

Atari ST
Amiga
CBM 64/128
Spectrum
Amstrad
+ more

ACE

ADVANCED • COMPUTER • ENTERTAINMENT

GAMES

DIPLOMACY

Micro megalomania



OUT RUN

Low, high or neutral?



DAN DARE

Mexican 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

Find hot
rhythms





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07 Version Update

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Take your scoring to the top of the tower in *Arbitus*, boost the ice in *Arbitus*, and take your game-playing skills to sparkling perfection as we check some other month's 100+ releases.



01 Adventures

Magnificently *Arctic* - can it stand a march on *Saint of Heaven*? Plus a look of the superb character handling in *Arctos*. *Arctos* and the rest of the *Arctos* trilogy.

BUY LINES

08 Special Offers

Celebrate the New Year with 10% discount on each of the carefully selected titles listed here.

07 Subscription Offer

The magazine could have slipped through your letter-box, saving you time, aggravation, and the risk of missing the best issue. What's more, subscribers get 10% extra discount off these national bargains.

09 ACE PINK PAGES

To please than not offend, but still red-hot, and now even *included peripherals* is well, the links these pages give both the specialist and the full-time buyer of the *Hardware* they need, and will not be buying 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 men behind this evil tide of trash should be stopped in their evil tracks before their evil games cause any more damage.'

Mrs 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 this 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 do-gooders 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 low 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!



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.

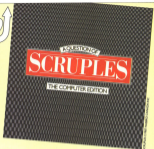
ADVANCED COMPUTER ENTERTAINMENT

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4 Queen Street
BATHURST NSW
02 225 44000
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COVER PHOTOGRAPH: Stuart Baynes, Photographer, Bath, 0225 440000 • SUBSCRIPTION FORMS & SPECIAL OFFERS: Carrie-Anne Porter, The Old Barn, Garsington, Oxon, 0441 7911 • 0458 76011 • CLOSURE DISTRIBUTION: Vanessa Regeneration, 200a North Road, Sevenoaks, Kent, 0458 760070 • UK Distribution: 1013 Tolly Gardens, London SW9 0DS • 01 275 82114 • PRINTING: Cross Hill Offset, Plymouth • Copyright: FUTURE PUBLISHING LTD 1988 • No part of this publication may be reproduced in any form without our permission.



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BY SIX SEAPROD GAMES - FOR KEPT!

A few months of wrangling, Telecomputer has announced that they will be bringing out the disputed games *Morphous* and *Magneton*. The titles had into their hands at the PCW show when Graffiti programmers Steve Turner and Andrew Stephenson, long time associates of Hewson, signed long term programming contracts.

Hewson had already granted us to publish the games themselves so rights over the titles were disputed fiercely, but the matter has now been settled temporarily by a High

Court injunction. *BT* successfully restrained Hewson from publishing the titles until the case can be tried, and so can now safely go ahead with publication themselves. The games will appear shortly on Telecomputer's latest *Frontier* will get



Representatives from New York and London shake hands in a deal for BT bringing money and Telecomputer's *Frontier* on the table

Magneton while *Morphous* goes to outer label Rankin.

But that is unlikely to be the end of the matter. The granting of an injunction under such circumstances has nothing to do with the merits of the case, so it is by no means certain that Telecomputer will come out on top. The final court case will take place in several months but Hewson are determined to continue their action over the titles. Should Hewson win, Telecomputer would have to make good whatever financial loss their injunction caused. The damages would, as the saying goes, be substantial.

CLONE ARRANGERY?

Clones - copy cat names that can run the same software on existing machines - are well established in the business field, but some more money is being made (and) some lost.

To clone a machine like the Amiga you need to get both the hardware and the operating system compatible. The Amiga's MC68000 CPU is available off the shelf and cheaply too, but its all important custom chips (opus, Paula and Denise) are only available through Commodore.

While Commodore are certainly prepared to sell the custom chips to other manufacturers' products - the Amiga's 68000 CPU is available off the shelf and cheaply too, but its all important custom chips (opus, Paula and Denise) are only available through Commodore. While Commodore are certainly prepared to sell the custom chips to other manufacturers' products - the Amiga's 68000 CPU is available off the shelf and cheaply too, but its all important custom chips (opus, Paula and Denise) are only available through Commodore.

From the operating system right at Amiga store looks just as unlikely. Although the Amiga OS is derived from Tripos, a product first owned by Graffiti from Melbourne, the aspects of the system concerning the custom chips and the Amiga's user interface (Hudson are exclusive to Commodore) - they have sold Tripos on to other firms for 19850 dollars, but those weren't home money for alone Amiga installed, said Melbourne's Andrew Spencer. "We aren't writing on an Amiga more for anybody. You couldn't produce a clone - not a totally Amiga-compatible one - without going to Commodore."

AMSTRAD TO GO AMIGA IN '88?

Amounts of a cut-price 68000-based Amstrad home users are trying hard and fast in the computer market over the last month. Inside sources from the British-based company either producing a CPC replacement in a so-called \$129 case, or an Amiga-compatible version of the PC 101 Z.

Amstrad are not renowned as a techy company - in the past they've furnished machines in the UK without announcing them at all - so rumors' mouth takes the three would be greeted with scepticism even if they agreed with each other and sounded plausible. As it is however, they both have major problems: a story on the CPC replacement claims that Amstrad have had major technical problems putting in the '88 bit - whatever their's supposed to mean - while the Amiga-compatible story also seems extremely doubtful as things stand.

But is there an Amstrad 68000-based machine in the offing? Support for the CPC is now in decline, and with the Spectrum still widely seen as the last in Amstrad's other entertainment computer line a new low-price model would fill an important gap in the firm's range. The 101 Z and 1040 PCs can't compete with the ST or Amiga as far as music, art and games are concerned so it looks like the last a



Paul Vinyop is in a hurry to keep Amstrad

new micro to keep Amstrad in the leisure market. Amstrad's official comment was that "we don't comment on future products prior to launch" - but given the company's tight-lipped reputation, that may not be the final word on the matter.

Nexus hit node

Yet another small, independent software house has fallen the dust. The line of Nexus whose game is in liquidation, despite their recent release *Knightsley* (looking up an ACE Rating of 91). The running of Nexus was recently taken over by programmer Paul Vinyop, who assured us that the programs under development - *T-Alchemist* and *St. George's* (Hewson - will all go to sea, good home) and that they should be finished in January.

So why did Nexus go down? Paul Vinyop says that under the administration Nexus didn't spend a lot of money. The main problem has been a lack of investment in publishing products. With the fact that the company's debts outweighed income to the extent that liquidation was inevitable. Paul Vinyop hopes to be back in the software business very soon - but he won't be running a software house, he says. When I re-enter it will be very much on the programming side.



Knightsley - makes \$129, but not so far that the Nexus game is lost



Amiga 88000-based home users are trying

Those of you who spent the year huddled over a monitor, defeating ever-increasing waves of aliens, all experts in tactical art skills and capable of simulating Eddy Thompson, may not have noticed anything too special about 1987. It was a bit lacking in the spectacular events department: *Alan Sugar* didn't even attempt to buy out *Jack Tramiel*, and while Commodore got rid of a good many of its senior staff, it never filled with bureaucracy as it had done so tentatively 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 means, and software for them; a lot of talk about new data storage and retrieval means; the big guys getting an even bigger slice of the software cake than before.



Sir Clive Sinclair made a welcome return to the limelight with the launch in February of the ZX81, the portable micro which had begun life as Pandion in the Dark Ages of Sinclair Research. Sir Clive delivered the machine (size - he would, wouldn't he?) - and it was not really a micro for the Sinclair game-playing faithful, but most purchasers pronounced themselves well-satisfied with it.

In March, Commodore finally revealed what so many people had been clamouring for: an affordable Amiga. And once home fans had two 68000-based machines to choose from, with the Amiga 500 and the dual ST 100 both in the shops, the software companies took a deep breath and sunk development money into 70-00 games.

Really, we haven't really seen the fruits of that development yet. But with ST's disappearing from the dealers' shelves, and sales of the 4800 picking up fast, the software houses had to discover it so far, it had largely meant Commodore and Spectrum and Commodore files, and rough-68000 code that can be put on either machine with the minimum of fiddling.

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

In June, the software fraternity had another advanced machine to consider, when Acorn launched Archimedes, a range of more striking Acorn's own Packard-Introducer-Set Computer 250, and some truly advanced technology. Righteously fast, with awesome sound and graphics potential, but who-on earth was going to buy the beast? Its generally apocryphal 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 micro (on price grounds) is melting away, despite David Braben of Elite fame launching up a little number called *Zenith* (ACE Packed at a staggering 179).

At the other end of the scale, the veteran Spectrum got its built-in disk drive in September. The software available so far on disk is attractive, to say the least, but, after a cautious start, it 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 VIC 20. But *Sage*, *Milnardo*, and inevitably *Alan* (which didn't seem able to lose 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 lower funds. US Gold set up *Soft*, a general purpose computer game console, and its distributor which checked a *CDM* deal with arcade publisher Capcom. *Demals* signed up Gary Linaker and expanded into board games. *Ocean* announced the release of a board game where your video recorder *Cyber*, video recorder takes the place of throwing the dice (see separate item). *Vigra* took *Flanigan* (*Flanigan*) Transpacific as the subject of an interactive video experiment. *Masterton* put things back into arcade machines, wrote games for them, and released a computer LP (*Milnardo*) got busy with CD-ROM technology.

Advanced Computer Entertainment

One of the major events of 1987 was - of course, naturally it goes without saying but will say it anyway - the launch of ACE, whose first issue appeared in September. The magazine was created in response to the growing demand for a more mature treatment of the whole phenomenon of games and related computer entertainment.

The response has proved that as the hardware has grown more sophisticated, so has the software and to have the people using ACE was intended to be the magazine that would market these developments, and take the readers where the technology goes. Advanced Computer Entertainment was in 1986. Advanced Computer Entertainment will be there to let you know about it.

The big league players also got active. *Masterton* followed up *Melbourne House* in February; eight months later, *Vigra* sought substantial minority interest in *Masterton*. The highly respected *Milnardo* turned over its sales and marketing to *Greenis*, and then led its two highest profile programmes, *Game Tamer* and *Andrew* (*Andrew*), to *Talmansoft*, *Elite Systems*



The ZX81 - still a general interest for those who love to play Transpacific.

concerns to shoot 'em up fans must be huge, and the price makes them almost impulse buys. But with alluring, alluring machines like the Amiga and ST around, the consoles look more likely to find a niche market as 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 consolidation of the

major software houses - the machine but on changing to be more regular investment



er in focus

fought Quark, who withdrew from the business of games centers. CRL and Mattel too have moved up with US giant Electronics Arts, which moved into Slough in March, and launched an extremely respectable range of games at the PCjr show.

When any software company found time to release computer games, it was Budget Software that dominated the charts. A new look, *Atlantis*, made the first attempt to break the *Microscopic Predator Code Wars* stranglehold - and didn't the fan-folks make such a beautiful fuss about reaching Division One?



Just... just Atlantis gets in 1987. Only Atlantis gets in 1987. Oh, how you love Atlantis 87!

With all this extensive activity, it's perhaps not surprising that there was little in the way of most-selling software. *Miss Fortune*, more licensed legs, more spots, more slots and a clutch of *Breakout* clones were the order of the day. To balance this out, we do get the graphics in *Legend of the Crown* (same about the game), continued high standards from Heaven, particularly with *Black* and *Melinda*, the continuity of *Blackburn*, and the playability of *Bubble Bobble*. The top *Prince and Damsel* done year with *Watch Dog 2*, and there were more reasons to fly out in *Landerlord*. *Adventures* wanted more releases from Infocom come out than any more moral can cope with, while *Level 1* kept going at a steady rate, and the *Parasit* sequel, *Sold of Threes*, appeared. The quality of computers rose markedly with the excellent *Sold Gold* and the everything-but-the-kitchen-sink *Game of Thrones*.

Lastly, *Star Trek* finally appeared and despite its lameness became the first ST game to make it into the Top Ten. *Beta* are now being placed for which of *Tecomsports* titles will be a year late in '88.

Overall, though, 1987 marked a turning point in computer entertainment. The 48000-based machines took off, as did their associated software. The games companies are getting smaller in number and more diverse in their entertainment activities. The games themselves are becoming more and more tied in with related pop, contents, films, TV programmes, licensed series, whatever - which means it's all the more gratifying to see really original and technically innovative games such as *Melinda* and *Inspector's Office* with TV and national press advertis-

ing, not to mention all those Commodore board-ups at Standard Binge, home computing a moving away from its cult status into the mainstream of leisure activity.

Crysis Italia

Technological developments which have begun or been halted 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 Virgin's *Transputer* project reaching completion (8000 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 playing conventional compact discs.

Next year should see the 16-bit market mature considerably, as the machines begin to overhaul the old 8-bit standards, both in price and the quality of software. The wars on display at the 1988 PCjr Show will be a true test of how well programmers have got to grips with the power of the machines. Current turnout suggests that we should see limited producing a machine in this area as well, which will certainly keep the interest high - and the prices down. But don't doubt on a final 16-bit show. Alan has a reputation for confounding the best gamers...

Even the 16-bit machines will start to look a lot slower and cumbersome if Adam makes a go and Letter developments to the Acornmodels, and Atari's computer makes an impact like the STs when they were originally announced back in 1985, neither of these will have a presence in the home market (up to 1000, and 1000...).

The reader: stay on track, and watch what the hell's happening.



Look out too, for more acquisitions, 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 giants will own just about everything, and that's when you'll start to see the old personal suits start up again - rather like the old record labels.

And of course the issue of certification, and infidelity, (seriously) is dealt with elsewhere in the issue of ACE, but the implications are staying, getting.

In the arcades

Tiger Road

Atari's latest coin-op release, *Tiger Road* features stunning graphics and great animation as you 'find' (that's you, missus, *Whisper*) *Golden Road* the world's No. 1. There are two stages, each with an end-of-level quantum bonus.

What really makes the game special, however, is the animation and range of different hazards. *Whisper* comes up and down decorated cars ready to drive. Huge piles of disembodied limbs surround you should that decide to Hoover you up into their maw, and numerous accidents fly in from all directions. *Definitely* *Oh-My-God* the Top ten for the New Year.

Heart attack

Blowmarks come in the more strenuous arcade games are turning into affairs, it seems. Capcom's *Streetfighter* featured super gas which the player literally punched with his fist as the pressure character beat the stuffing out of various other area fies. Problem is, apparently, that players who get just a little too involved run the risk of injuring themselves on the cabinets.

They're nothing compared to the supposed horrors of *Heavy Weight Champ*, whose game control system forces the player to being punched at by the other boxer in the ring by grasping and thrusting specially designed 'punch levers'. *Disasters* have suggested that his was being about a team attack in people with a history of cardiac illness. On the other hand, since people with a history of cardiac illness can drop dead at any moment, his doesn't seem particularly idiotic.

Sniff-um-ups!

Atari's latest CD-ROM game, *Sniff-um-ups!*, is taking about a whole range of games with *Sniff-um-ups!*.

It may have been announced yet, apparently because there is some difficulty in getting a 'nose sniff'. The is hardly surprising - most of the opponents you meet in *Sniff-um-ups!* are the personal business equipment. Fighting them is a sure thing, but sniffling them would surely be more than any reasonable man (or woman) could bear.

Sniff-um-ups! - the first of games you'll sniff (sniff in on it) and sniff a bit.



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

Golden Komodo - take your eye to the top of the heap.

Slope Street - clean up the streets of Mega City One.

Acornimals - explore the maze to find the 'sniffed' flag.

King Kong - watch the team-puzzling, see before you run out of breath or

Rescue's suggestions on a podium, please bring search funds.

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...

You guessed it... Japan is the subject of this roundup of news and tantalising views from the world of computing, hi-fi, video and the rest. The newly-formed Yamatai Corporation of Europe was responsible for laying on the tap in the East, and for making it quite clear that Yamatai aren't just about synthesizers and motorcycles – they're also into sports equipment, furniture, jam, pizzas, etc. etc., you name it, they make it.

Yamatai's Onkyo retail store in Tokyo has a huge range of synths and music computers including the CD1 and CD11, 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-meets-las-vegas experience in itself look us at Adlers, a kind of Tottenham Court Road game terminal. Stock after stock of hi-fi, video, computing and electronic gear makes the venue, 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 real deal slot drive copping unit for protected software).

Comms & entertainment

Everything in Japan is interactive – TV shows the Captain Power feature flailing when you can



Panasonic fax machines

"shoot at" with a "power gun" (available in all the department stores). You can plug in a laptop handset to your telephone and TV for interactive banking and shopping facilities, and stamp an electronic phone number index which recalls the number you want and then stamps 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 £1,000 (but what

ACE IN JAPAN

a folder, but otherwise comparable unit costs less here) and send complete printed documents down the phone line to other fax users.

Computers

MSX is still at the rage in Japan, with 8000 clones like the Sony MS Bit 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



Japan's MS Bit laptop computer displays the title and keyboarding screen.

companies have models. Sony's 'Produce 100' weighs just a few pounds but has a flip-up 400 character LCD display, a score of Japanese and European fonts, an art package, and a zip-on 8000 dot printer which can produce business cards. Photo pages (the Japanese love Photo/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 FMCT, which looks more like a piece of hi-fi than a micro. It comes complete with a TV set/monitor and has a phonetic music strip with hi-fi outputs, optional MIDI interface and music composition software. A MODEM, SCSI for hard-disk and voice sampling facility.

TV & Radio

Perfect 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 TY-8000 at around £100 stands up like a bedside clock and has auto signal lock to home in on any powerful

signal; the Sony TV-800 model, with 1.5" screen, is sold as the 800L, and cool-cool sized MMFA satellite satellites with digital tuning and LCD remote are common.

Video

Most Japanese video machines are MHC HG (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 fast both standards with its digital sound and high picture quality. Sony's Video-8 camcorder range includes an undermarket model and their Video-8 Pro (D80) has a pop-up slide dial just like professional 8 mm editing machines. Available on the back strap into the real remote control unit.

Picture-in-Picture TVs and videos, which superimpose a small section showing another channel onto the main picture, are common as thick 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, great magnification and much more for just £500.

Hi-Fi

Hard-disk LCD colour TVs are available from Casio, Sharp, NEC, Panasonic, and many others. Professional recording Betamax designs with Dolby or other noise reduction, level meters and so on are popular, while the new CD1 standard is hot



Casio's sleek-sleek hi-fi portable CD/Laserdisc TV

get launched in the UK but able to play conventional CDs, Laserdisc disks or 5" digital-pictures-and-sound disks – is just becoming available. Yamaha make a non-CD1 player for around £800 (VHS standard only – tough) and Digital Auto Tape players are common at around £300.

Gadgets

Sony's Repeat Learning System, an impressive gadget costing around £70, is actually a speech-recognition for magnetic tape learning which has lessons such as "English for Beginners". But if you want a high-tech replacement for the old-fashioned pen and paper, Casio's Inter-LIC and many other companies have found a means to the end of oval cards which you can use to store a message for your loved

one or going out. Your friends in the gutter are in the gutter too! Springs to mind, the Japanese, being traditionally short of space, are very fond of anything mini-card based, and you can put up pen and pencil sets, make-ups with solar-powered calculators, word lists, name lists, addresses, dates, English-to-Japanese translators, 5,000 word vocabulary and much more.

WANTED CRAZY CRITTURS FOR

KEEP
PLAYERS

WESTERN GAMES



AXE IN THE HAND
REAR END COLLEGE



COWBOY SHOOTOUTS



BUDDY SPAWFOORD
GUT BUSTERS GAMES FOR BUCKS



BUDDY SPAWFOORD
GUT BUSTERS GAMES FOR BUCKS



HOGWILD
IT'S THE GREAT HORSE RACE



BILL PARSON
GUT BUSTERS

ATARI ST



AMSTRAD



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C64 CASE - \$9.99
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AMSTRAD CASE - \$9.99
AMSTRAD DISK - \$14.99

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OCEAN GO INTERACTIVE

Interactive video has become something of a buzzword among software labels. Ocean is the latest company to move into this hot field with the input from the US of the ABC Sport Winter Olympics game, a variation on the true interactive video theme.



Winter Olympics is part of the fun for CBS, says Ocean.

Ocean chairman David Ward describes the game as a "teleshopping" way of appreciating the interactive video format. The game is primarily a board game, with the video images randomly selected to direct the game's progress.

As a precursor to the eventual installation of computers and provided 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 frame (every sixth of a second), is shown on-screen. Players press the joystick button to freeze one of these systems on 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 just sit 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 will generate \$10.50 and should be an early story.

Ocean is also looking to move into the video market by buying distribution rights to movies, following on from their joint release with RCA/Columbia of the Western film Pale Rider. David Ward is, however, cautious about the company's prospects in the area.

"Yes, we're looking to build up a video library, and we've set up a division 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 film to computer games, it would not necessarily buy up video rights for film with a view to micro-computer.



Ocean's John Good (right) plays the game with author Dr. David Dunnington on the left here.

MAD add X

Madness's CD-ROM MAD range is to get a fourth and become the MAD X series. Ingredient is a CD-ROM \$100, so that you'll now get two games for the price of one. Some of the CD-ROMs will have been previously released in their own right, but it's hoped that they will be brand new games.

The first release of the recent madness-themed range will be an January title for Spectrum, C64 and Amiga—Machines. It's a 3D sci-fi feature-length drama, the 3D role-Machines. It's the first to be issued for some time, and you can subsequently read about its design features in the Games Creator issue in this issue.

Second release will be *Rocked*, inspired by Boulevardier with Back To Reality on the CD-ROM, but *Rocked* on the Spectrum. The action marks an interesting move by Boulevardier. *Rocked* is one of the first titles out of their Super Beasts music system, and has now been brought on to a \$100 budget with no marketing full-price stage. It could promise some very good value games in '88.

Snippets...

Scraples

Amiga 12.95 (s) 17.95 (h)
C64 12.95 (s) 17.95 (h)



The computer version of the board game may asked these soul-searching questions which you, of course, answered truthfully. Should be in the shops as you read this.

Catch 33

Amiga 17.95 (s)
C64 17.95 (s)



The three-dimensional world graphics arcade adventure is about to make its appearance on the 16-bit machines. Still the game from the CD-ROM development site before you make it. Should be in the shops as you read this.

Winter Olympiad '88

Spectrum 17.95 (s)
C64 19.95 (s)
Amiga 17.95 (s)
Amiga 17.95 (s)
Amiga 17.95 (s)
Amiga 17.95 (s)

The Olympic sports are combined with the graphics spectacularly balanced between speed and control. The 8-bit versions should be out as you read this with the 16-bit versions following '88 soon.

Northstar

Spectrum 17.95 (s)
Amiga 12.95 (s) 17.95 (h)
C64 12.95 (s) 17.95 (h)



The year is 2488 and arcade action is still the name of the game. Head for the planet center, destroying the evil life forms and re-starting the life-support systems on your merry way.

Blood Valley

Spectrum 17.95 (s)
Amiga 12.95 (s) 17.95 (h)
C64 12.95 (s) 17.95 (h)
Amiga 17.95 (s) 17.95 (h)
Amiga Unlocked



The price may not yet be confirmed, but it looks as if Blood Valley will be Gemini's first Amiga product. The 8-bit versions should be here before the month. The game is based on fantasy role-playing books and the player has a choice of characters, each one with a specific objective within computers within the central plot of a main hunt.

Space Ace

Amiga 17.95 (s)
Amiga 17.95 (s)
C64 19.95 (s)
Spectrum 17.95 (s)



This list of a new series of games introduces a hero by the name of Ace (and obviously familiar). Set in the 22nd century the first game is a shoot-em-up which sees Ace at the helm of a jet of trouble. The second in the series will be set in the Middle Ages, but may not necessarily be another shoot-em-up, so watch this space. 16-bit versions will be coming first (February) with 8-bit versions shortly after.

Blood Warrior

Amiga 12.95 (s) 17.95 (h)
C64 12.95 (s) 17.95 (h)

The team who programmed *Jet-Boys* (reviewed this issue) are set to release another arcade style shoot-em-up. It's a sort of *Over Run* meets *Blade* as you drive your car through eight obstacles and try to eliminate the nasties. Look out for it when the March winds are a blow. Also from CRL, in February and March will be Amiga versions of *Tau-Gun* and *Academy*.

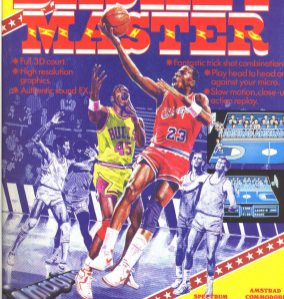
DYNAMIC

LACE UP FOR ACTION

BASKET MASTER

- * Full 3D court.
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- * Authentic sound FX.

- * Fantastic trick shot combinations.
- * Play head to head or against your micro.
- * Slow motion, close-up action replay.



DOOR
...the name
of the game

SPECTRUM AMSTRAD
COMMODORE

7.95 **8.95**
EACH EACH

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ACTION FOR 88



Image: The longer hair - get these parties right and you're sure to die.



Image: The only playing board. As you can see, you'll have to answer a question correctly within 10 seconds.

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...

POWER PLAY

Arise

Out on the BBC yards ago did no spring chickens on the other front, macros within, the cryptologically-oriented board game is finally coming out on the PC and Amiga. Earlier versions won a lot of friends with their clever integration of trivia questions and strategy, but Amiga have spaced 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 player's strength, expertise (not as much as trivia knowledge, we'll admit)

HALO JONES

Party

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



everyday occurrences and lobby the pet pooch is a psychotic robot. Based on the award-winning JIBBARD comic strip by Alan Moore (and his fellow, the game is all about buying groceries - not a place of crime in The Bronx, a floating ghetto where shoppers go armed to the teeth.

Spectrum, C64 and Amstrad users should get a chance to buy it March, but it's users will have to wait till May for their dose of future shops.

XENON

Believe It or Not

If you was the Super Select System in this month's computer you'll get the one all tied up and ready to play, but even without a lucky streak you'll still be able to come yourself a whole load of 50p pieces if you buy the game retail. It's one-up standard on the length of course and not too

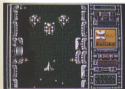
short on the 32, as you can see from these screenshots. You can travel around blasting ground targets, wrangle the joystick to fan into an aircraft and then fly around blasting air targets at the tops of buildings. Competitive stuff and very good looking - watch out for the ACE review, coming soon!



Spectrum users should get a chance to buy it March, but it's users will have to wait till May for their dose of future shops.



It's a tough world, and you're right in the heart of it. The fighting time you've picked up against time is ready against these hostile gun bots.



It's a tough world, and you're right in the heart of it. The fighting time you've picked up against time is ready against these hostile gun bots.



It's a tough world, and you're right in the heart of it. The fighting time you've picked up against time is ready against these hostile gun bots.

BLACK LAMP

Fantasy

This slow-looking arcade adventure drops you into a medieval fantasy of magic, mystery and rapt music. The gameplay leads you through the top-screen interior of the castle and out into the swirling woods as you solve riddles chosen as it's viewed from all sides. The



game probably won't be loaded with March or so but it's looking great already, with marvellous animation on the main character and some great backgrounds too.



It's a tough world, and you're right in the heart of it. The fighting time you've picked up against time is ready against these hostile gun bots.

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-maneuvre your enemy, plan coverage and some luck 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

Finally 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 520 STE.

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 you'd like to come out for the Atari.

Gary Roberts
Buckley

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 far as I have not found a game with as much of a challenge.

Des Smith
Glastonbury

Thank you for news for both of you. This should be available for Amiga and ST by the middle of the year.

Wife in One

Can you please answer this question: Has anyone got a wife in one (i.e. Ladder Brawl yet)? I've been trying for EONS!

Incidentally, we're all computer hardware here and think your magazine is the best on show and can't be better!

Stuart
Weymouth

Ministry man: Aren't your got a wife in one - but we wouldn't know a girl out from a cricket bat.

Controversy of months ago

I was looking through your letters page (Issue 3) when I noticed a letter from a D. Parry, warning a

REWARDS!

In recognition of outstanding editorial achievement RCB Letters will, from our next issue on, be awarding **FREE SOFT**. **FREE** to 2 writers every month. One lucky correspondent will be nominated Letter of the Month award - reference to the value of £20.

So please remember to add to your letter details of the computer you have, and the game(s) you would prefer to receive.



So free following advice

debate on the alleged abuse of women in advertising. I became more interested when Mary Whitehead's name popped up. The Guardian of spring up all kinds of arguments, but one fact everyone failed to mention is that there was a book in the 40s, equally scantly clad. I might mention, though I don't read anything from anyone complaining, is it all right to see topless men, but not right to see topless women? I actually found the ad very degrading to men - what with the male having to wear that awful cap...

Anyway, the point of this letter is that women don't need Mike, especially ones like Ms Parry, to speak for them. In fact, most articles I write would find it a little very condescending. I'd avoid women with a right dose intelligence and backbone if I were you.

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

Mr
Dunbury

I think you'll agree Mr. M. that women's scantily-clad male bodies rather more frequently in ads than men's. Do women stop D. Parry's speaking up on their behalf (conceding I'd like to be in) because we haven't had any letters from women on this 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 8-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 Bubble Bobble 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
TROUBLE

computers (especially Amstrad). Excellent reviews but perhaps you could have second opinions, included by the other reviewers including their personal ratings.

The *Playboy* great bit of feature would be good, and also larger pictures of the 15 bits and smaller ones of the 4-bits and please, some pictures have looked very out especially the *Tempest* and *Jester* ones.

Playboy Man is rubbish and boring. Get rid of it, please. Though the sound and graphics specials are very interesting, CP strategic importance was unfortunately of very little importance, and nearly sent me to sleep. If there are others who dislike it then, perhaps it could be made to comply with CP strategic site importance and IBM being same. The article on the upgrade states was very good but could have gone further still, like would a monitor (RGB) combination help be able to show the Amiga's set list. Also if you are trying to sell up a stable market for the 16-bit machines you should emphasize they'll be around for a long time and that you're in the future it's all some way off.

Now to the anniversary lot, the Amiga feature, I have a feeling I

am in a minority but I don't find it that interesting although I can understand that it does in a way show what is to come on the games front. On the whole, congratulations, A&E is brilliant, although perhaps slightly overpriced! No, I don't say that. After all, A&E is full of colour, full of info, and free spots, and magazine.

Don't worry, I don't expect this lot to be printed. After all, I never was any good at English, it's just meant to give you some suggestions. As you can see I have a very strong dislike of Alan Soper and his computer, and what he did to the Spectrum, adding a floppy tape recorder, then a disk drive with not enough storage, and with his "Gardner symposium" games catalogues which normally turn out to be the worst programs. The computer market should be more independent with more small firms making additions, that's what made the computer scene so exciting. And Alan Soper treats paid purchasers badly (remember the 486) and the way he treated the J3. Sorry but I can't stand the man, someone give me a machine, please...

Nail Wilson



The generous world computer journalist

You're certainly a fellow with some strong opinions. IBM and the strategy there are both occasional rather than monthly, you might not be interested in them, but lots of other people are. Amstrad is, as you rightly suspect, one of the main popular systems in A&E, so we could hardly get rid of it just on your recommendation. As for Alan Soper, love him or hate him, you just can't ignore him...

Give a job

I am willing 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 16 years old in January and I am taking GCSE exams in English, Maths, Chemistry, Physics, History, French and Design and Communication at Wicken senior school, and Computer Studies as an extra subject at evening classes. I have already passed the Cambridge Information Technology word processing exam earlier this year.

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

JET-BOYS



COM ARCADE ACTION



COM SPEC. ADM. ADVENTURE

TOUGH GAMES FOR A TOUGH

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

I would be grateful if you could send me any details of how to apply, to get started on the course I have chosen.

**Lee Beth
Moylan**

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 matter of showing to people that you have these skills, which is where paper qualifications come in handy. O and A levels in English and Computer Studies can be useful, so can professional qualifications from the universities or colleges 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) came to computer journalism by non-traditional 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 500 STEFM last W H Smith on the 10th November 1987, with it they supplied eight discs. Of the eight, five do not work correctly, if at all. An additional five, Road Runner, also does not work.

Star Trek said that the new machines being shipped have the latest TOS revision 1.05 and this is the reason the files do not work. How do you find out what revision your TOS is?

Please would you and your readers help to compile a list of working files to compile a list of working files to compile 1.05 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 1.05 TOS and below only.

**Mr G C Neales
Bosidon**

Are there only over that low ver-

sions of the operating system, and any ST bought cheap is likely to be the lower one, TOS 1.05. Quite a few leading files do not run under

■ Clary? What clary?

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

After purchasing issue four, I got home and then realised that the first Clary featured was meant to be on the front cover of my magazine which I have now. I went back to the shop where I purchased it but they said that they didn'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 Baker
Kilworth Beauchamp**

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

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

I looked at the cover - "Clary". I couldn't see it. Asked my mum - she didn't know anything. I checked the CD - no luck. I went down to the managers and asked if I could have one, as the other one must have been stolen from my copy in the shop. The managers refused. I do not blame them, so I do not have my free copy. Could you perhaps send me a copy please?

**David Hood
Staggon**

Quite a few people have been experiencing difficulties with the clones - largely due to them not being on the floor of the magazine. Either they fell off or - more likely - were ripped off by unscrupulous non-purchasers. If you bought a copy and didn't get your Clary send a stamped addressed envelope to ACE CLARY, ACE, 4 GREEN STREET, BATH BA1 1JL

THUNDERCROSS

1 WIDE ACTION

YOU WORLD

SOFTWARE SHOP

MAIL ORDER

For a broad sheet describing the complete range and information on your nearest stockist write to:
Electronic Arts, 11-15 Station Road, Langley, Bucks SL14 4JF, England
Or: Group PLC, c/o, House of Kings Road,
Ladbroke Grove, London W2 2JF



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

Outliner's Travails

I would like to express my views about type-in listings. I think that they are very entertaining and I violently disagree with your point 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 sub-standard as you seem to think. Recently I spent 1.75 hours typing in a listing for my Spectrum and was less than surprised for words at the quality. It was approaching that of a professional game of a year or two back. It also only took 3.5 "product" and "valuable" pages in quite large print.

I would also like to make one more point: how many people apart from you have written against type-in?

**Angus Gulliver
Letchworth**

Stop us about these listings, and we've repeatedly said that we aren't doing them, who on earth is going to go to the trouble of writing a letter asking us not to run them? 60? Years is only the fourth or fifth letter we've had asking for listings to be introduced.

3.8 pages takes me as another a lot: on discs 1.75 hours of typing the program in. I suspect we will not be printing program listings.

Is this a problem?

Congratulations on an interesting and appealing magazine. As most, I feel that it gives a good insight into home computers and software. But I don't write into praise your magazine with associates. I have what I consider to be a big dilemma. I have 6500 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 indicate my problem.

I am presently studying for A levels in Business, 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, spreadsheet, and a sharing package for extra help at home. The last point I don't really like to admit, but I am an old Spoozy user and would appreciate some good games.

Please don't repeat the specifications of either machine, give me your opinion of which would meet best my needs.

**A Churchill
London**

There's plenty of the services will want you mention for both ST and Amiga, whichever one you get, you should find something that will suit you. If you are going to do lots of spreadsheeting and databasing, 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 on the games front. At the moment the Atari ST has that more, but that is not to say that the Amiga will not catch up in it. But we haven't really got a clear idea about you at the moment.

Desperate Deal

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

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

**Ms & D Hill
Telford**

First of all, by getting in touch with the publishers, Mastertron (01-277 8890). If they no longer produce it and take to old stock, try putting a mail ad for the game on PostPages, somebody out there is bound to have one.

Taken to task

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

as such".

While I freely admit that well over half the time spent on my Spectrum 128 is on games oriented (hence I'm both 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 debt learn's statistics and home-accounts (using VisiCalc), masses of word processing (Textwise), learning new programming languages (DovePrint and Logo), musical composition (Melodics and Sonosoft synthesiser) etc, all of which my Spectrum handles admirably.

I realise of course that the Spectrum cannot realistically compete with 18 bit machines in terms of either serious software or games (although the 1288 version of StarGlider comes mighty close), however, I do maintain that, amongst 16 bit rivals, the Spectrum compares quite favourably due to its great sound processing (the same chip as the ST) excluding the absolute 48K Spectrum), full graphics capability (32K games area) along in comparison to user base and software availability you really can't see a word to move and lose but not least, the low cost of the machine itself and its peripherals and software if picked up as all of the software packages I mention above for under a few each - and the spirit for a learner.

Yes, I do love an Amiga or ST, but after treating the bank to purchase one and then being charged around £25 a year 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 latter journal's content of some Spectrum mag's has something to do with this idea. Remember I was originally designed as a serious machine and being such a supreme all-rounder, still represents an ideal choice for those of us who like to combine business and pleasure and aren't made of money.

**Grant Panchard
Aberdeen**

You have a fair point about, and you've made it very lucidly, lots of people have "made do" with Spectrums for various purposes. But making do is what it's all about; if you were going out now to buy a new micro, bearing in

mind of the word-processing, stats and music you wanted to do, could you seriously consider a Spectrum? If the don't want to be ready to the Spectrum - its done starting serious work over the years - but I don't really a machine you could run your business with.

Artcade rig-off

I do not know if people who visit arcades realise just how much they can be ripped off, not just by over-pricing, but by the games 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 - lives per credit difficulty levels, bonus letters, player histograms, hi-score tables, etc.

Many small arcades get greedy, and make the game very easy and as fast as it will go. Two examples of this, a 320 Degrees machine that gives you no bonus at the start of the game, and a notoriously hard After Burner 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 Freeman
Worcester**

We too would like to hear from other readers who know of this sort of thing going on. And we'll look in 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 twist
while soaring through the
air.

"720" is the epitome of a classic. It's got
every element of a great game...U.S. Goldy
- Game Zone™ Skate City Skater 1991

720°



CBM64/128
E11-99 disk
E8-99 tape



Spectrum
E8-99 tape
Amstrad
E14-99 disk
E9-99 tape

U.S. Gold Inc., Units 23 Halford Way, Malvern, WILTSHIRE GL1 2PE, UK. Tel: 051 556 2088

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: Cruise (and cruise) into the mountains. Put the steering wheel in the position and yourself will do a lot of other things for you.

ARCADE

● TOP SPEED

Title
\$09 per game

If you've been burning rubber in *Out Run* or *Le Mans* then just this one on your list. *Top Speed* may have a license scenario, but it delivers it with a dose of excessive torque that should bring speed to the level of even the most hardened speed fiend.

The game makes its opportunity in the arcade in two guises: the straight nitrous model and the all-in collision version (called here *Chaos*) for the car club as you'd expect from this sort of game: steering, nitrous, accelerator, handbrake gear stick (giving a choice of 10 or 50) which together take you through

a total of five stages, each with a copping 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. Activating the switch results in the car surging forward at feathered speed, wheels smoking and engine whining in true *Mad Max* fashion. Unfortunately the player is limited to just three bursts of 1000 per stage - the might not be such a bad thing because should you happen to hit a tight bend of 400+ km/h you have default to steer control of the car. These extra bursts of speed cannot, however, be carried over to the next stage.

Like most other color-on-car driving games, the player's view of the action is from a position behind and slightly above the car

and the ever-changing scenery scrolls toward him. Besides having to stay on the road and avoid crashing into roadside obstacles, the player has other post-steps to contend with, including other family vehicles and some rather large lizards.

At a point some way into the stage the player arrives 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 a different scenery -



TOP SPEED: The nitrous gas cabinet. Good old when it comes to extra torque that's a frequent foe.



TOP SPEED: Center lane and the left in the station - the car is positioned five feet off the left and the wheel is fully left.



TOP SPEED: Stealing through the city with the Nitro boost. Coming out to high speed is a very different experience.

don't expect much time to waste it, though.

The 3D is captured in a pretty fancy perspective - steady rise and fall of the road is captured by the rising and falling cabinet cast each corner will have you looking to one side or other. Crashing is an experience to be created by those with steel-tooth, unless you want to see their end up in your lap. All in all, Top Speed is a lovely game and if you take the time it is an exhilarating climb to and then again...



TOP SPEED: Making any corner is like an old-school on-ramp through traffic - stability is your end goal, not that of changing lanes.

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 Davenport who copped the crumpet - 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 GODFATHER: That you're the boss is all, stick to the bottom panel with your stick in the hand for tips.



THE GODFATHER: Whether you're a top cop or not, you're a criminal here.



TIME SOLDIERS: The more time - the better! You'll have around one of your lives. Some you'll be going for the extra gun - you'll see the dangers, but you'll see the fun.

ACE

◆ TIME SOLDIERS

SNK

3D-type game

The vertically scrolling shoot-'em-up has you in charge of the on-screen space watching to avoid bullets, scattered through time-time periods by the evil Goyles - whooves he, see or it may be. You'll find yourself in The Pleasure Era (complete with classical and stone-throwing conveniences), the Roman Period (all of about-clad engineering) and The Wood World to land of American-looking Western outlaws.

Control of the character involves this: twirling a joystick to make your character face one of eight possible directions, then pushing to move in that direction. For example, if your character is facing south and you want him to spin 90° you have to turn the stick two places to the right before moving. This is a fairly common to get to grips with, and can foster your hand oriented into some uncomfortable positions.



The fire buttons are located inside the joystick out of the deal of the game the player has easy to level-firing gun. Extra weapons can be picked up by shooting one

of the enemies captured and that appear frequently (and are tougher to kill). These extra weapons include a water gun that fires in three different forward directions at once and high-powered beams. 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 droppers for the extra.

At the start of the game the player is told in which time period one of his choices is to be found and is then transported to another time zone when he has to survive until he can find a transportation zone. These transportation zones are time machines that look like large broken eggs stood on end, just feed your player into it and he's transported to another time, another place, and with any luck the right spot for landing your others.

Once the player has sought his way through the systems of attacking zones he will be welcomed by the red-clad level guardian 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 shivers will be scored, at which point you'll find which time period the next stage is in (and so on)...

What really makes Time Soldiers so enjoyable is its entertainment and its atmosphere. That's not the constant action battle for one very playable game that will swallow your lips 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.

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.

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.

Super Select hardware

The innovative design Arcades 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 - either you know how. Super Select is constructed around an Amiga Protected Circuit Board. Attached to this at a right angle is a 'peggy back board', with 10 slots for miniature PCBs. The actual games you can play on a Super Select machine are to be found in form on ROM cartridges, which a new Super Select manager is provided up to 10 games on the one machine.

Super Select Software

If you think the hardware's pretty astonishing, wait till you see the software. The play-machine games compete with best Arcade cabinets, plugged in and ready to go. Each one of them is the sort of thing that is going to have less fortunate mortals enjoying their pockets to play dead in the arcades.



WORLD DARTS

No prizes for guessing what the game's all about, yes, it's on the side 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 skilled 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 stages before reaching Star Killer's command level and getting a chance to get an end to the snail that wants to put us all in the dark.

R PRIZE



XENON

It really does involve vertically scrolling shoot-em-up with absolutely amazing graphics as you - the lone Federation ship in these parts - battles through the four sectors of 18 zones. You can switch your craft between a ground-vehicle and a plane, depending on what you think is more appropriate for destroying the installations and ground-based aliens. Pick up tokens along the way to add firepower and manoeuvrability to your ship.

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

Xenon is a game that any arcade fan would spend a lot of 10p pieces trying to beat.

BLASTA BALL

Even in the distant future - and we're talking 2013 AD here - competition is alive and well, especially in *Blasta Ball*. The object of the game is to score goals by firing the laser in your spaceship 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 radar-style showing the whole of the pitch. There are barriers on both sides of the pitch, so the ball is always in play and the action is always intense.



Rules

- The starting date for entries is February 14th 1988.
- The names of the contestants (i.e. Future Publishing Ltd.) and their families are ineligible to enter.
- The amount of the competition shall be the first colored circle drawn to extend from among future-related prizes in the closing date. No correspondence shall be entered in to.
- The winner will be notified post and their full name published in the April issue of ACE.



A



B



C



D

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ARE THESE GAMES ILLEGAL?



Barbarian
Ooga, it's not his best days. Leave no other battle that a spot of 'gross violence'!

BARBARIAN – hack off the head. **HEREGADE** – 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
Here comes comin' it real handy, see how...



Death Wish

Spot! Does 'gross violence' just refer to the number of people you can kill?

The Video Recordings Act 1984

So what's all the fuss about? The one in 1984 cut the public debate raging about the so-called 'video nasties'. Still it's a violent or sexually explicit nature. It was widely believed that both the growth in ownership of video-recorder machines, 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's it got to do with games? Well, might you ask.

The act concerns 'video nasties' and 'video recordings'. The text of these is defined as: 'any series of visual images (with or without sound) -

(a) produced electronically by the use of information contained on any disc or magnetic tape, and

(b) shown 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 will (or may be) produced.'

So games should have been subjected to classification all along, just like videos. Well, not quite. A game is specifically excluded from the act - unless used here comes the interesting bit!

To any significant extent, it depicts:

(a) human sexual activity or acts of force or gross violence associated with such activity;

(b) mutilation or torture or, or other acts of gross violence towards, humans or animals;

(c) human genital organs or human anatomy or essential 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 (b), is designed to any extent to do so.

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

To partly clarify, all these games were mentioned on this page should have been submitted to the BBFC for certification before they got on to the shelves of the shops.

Does it all mean that the games companies are in for visits from officers of the law? How many games might get those 18 certificate which would cut them off from their largest customer? And - bonus of bonuses - will we now have 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 certification and censorship, in West Germany the whole business has been in full swing for several years. *Skynet*, *Quadsprung*, *Bruch Heart 2* and, most recently, *Sunday on just some of the games which have been banned by the Bundesprüfstelle für jugendgefährdende Schriften*.

This special body, founded in its English as the Federal Office for the Examination of Harmful Publications, set up in the 60s to protect German youth from morally corrupting publications in a variety of media, works likely to corrupt or define as "immoral or disgusting areas of those which include violence, crime or racial hatred or glorify war." So far it's the war games which have suffered, in particular, those from *Blitzkrieg* - who are now vigorously fighting the ban on *Quadsprung*.

The West German situation points out some of the absurdities 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 to shops specifically designed to exclude youth - which means Sex Shops. So if you want to buy a copy of *Star Wars* or *Quadsprung* in West Germany, you could find yourself among some interesting reading matter.



THE CERTIFICATORS

The business of granting certificates to films, videos and computer games is carried out by the British Board of Film Classification. Doing time you go to. For the cinema you see the certificate before the film starts. ACE want to use the BBFC Secretary, James Ferman and Deputy Director Ken Henry with a selection of recent games which were taped. We wanted their views on whether the games should have been submitted to the BBFC, and - if they had been submitted - what kind of certificate they would have got.

First off was Patrice LeBeaudon, Secretary of the BBFC. Would the classification apply then? For him it: it was mainly "horrorbook violence". James Ferman said, but, 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 these children would not be prevented from buying the game in a shop. A similar opinion

was expressed about *Generals Death Wish 2*.

This brings us on to another problem: just what is "gross violence"? The *Times* Bookings, ACE does not define it, nor does the BBFC. It's a matter for the courts, says James Ferman. And, presumably, a matter that producers of a game have to determine for themselves before deciding whether they ought, or ought not, to submit games to the BBFC.

The BBFC has only ever been called upon to classify three games - all from CRL - and they are not really equipped to deal with a field of programs. As yet, they do not even have a home computer, let alone the whole range of popular micro. CRL have submitted their games on videotape, with a printout of the text (all have been graphics adventures, such as forms of *Adventure*) will do for adventures, but for an arcade or arcade-adventure it's hard to see how you could easily tape the whole thing. Special evidence forms would be needed - but they'd have to be

THE SOFTWARE HOUSES HAVE THEIR SAY

Palace

Pete Stone of Palace, producer of *Robotron*, is a voice now at the Act, but says that of the time *Robotron* was released "I didn't care our minds. But I honestly can't feel that *Robotron* is a case where the Act applies. Pete Stone believes that *Robotron* is very much in the mould of fantasy, science-fiction action." "I strongly felt that *Robotron* would (with violence, I would) release it. But I don't believe it does."

"Will he submit games to the BBFC in future? It became the accepted thing."

CRL

CRL is a small I. Chairmen of CRL is the man of the scene. He vigorously denies allegations that Jack the Ripper was submitted to the BBFC merely as a publicity stunt.

Indeed, in his defence, he takes the high moral ground: "we were concerned that certain categories of people should be protected," he says. "If there hadn't been any procedure to get a certificate, we'd have tossed it down indignantly."



No game on to claim that Jack is "a leech through in computer entertainment, bringing into it a world of darkness and excitement" to the consumer. The better the effect, Chambers maintains the greater the effect it has."

We also need that he has been the victim of a boycott from other figures in the software industry, because Jack the Ripper has brought attention to people thinking the line."

And what about the fact that the game may not have needed a certificate after all? It's not a selector, says Clement Chambers.

Activision

David Hatch says that Activision is aware of the implications of the VMA, but that company policy is to avoid games of a particularly gruesome nature. "I'd like to think we'd have to submit a game like *Starquake*. It's so mindless." Computer images, she feels, are so much less realistic than video that the same procedure should not apply.

She goes on to make the point - voiced by many other people, software houses included - that a game without a message substance is seen as you say it's not the film."

She also points to the practical problems for software houses in getting certificates in a fast-moving market where it's essential to get

a game out as quickly as possible after its completion.

US Gold

US Gold are neither company whose felt the ocean lull in West Germany. Their latest game to hit the shores of the home computer is a 3D space shooter, a co-op conversion.

Stef Clauery, US Gold's Operations Manager, believes the time to be critical, and the company are fighting the case in Germany at the moment.

As for us very own NSA, a renowned Clauery says that he "wouldn't create a violent computer game". While US Gold, he says, "have had plenty of violent games, he doesn't believe that the kind of violence they create is anything more than. Fun and Amusement-style stuff. US Gold, he suggests, is unlikely to start submitting games for classification unless everybod's eye does.

Electronic Arts

The US giant haven't been established for long in the UK, but they're well aware of the law, not least because they are CD-ROM distributors.

Mark Lewis, EA's boss on this side of the Atlantic, doesn't think the NSA will cause the company's own software games. "I don't imagine EA producing such titles," he says.

"We're in the business of home computing - and that means for Mom and Dad and the kids."

He reckons that the nature of computer graphics - including text software - is such that violence in games is not a real problem; "All we have really good CD-ROM graphics are testing."

He would, though, like to see the software houses get together to discuss the issue. "I would love, for example, to see a participatory body here to discuss not only the practices of the industry but new opportunities to grow it."

Microprose

What has still have suffered more than most in the German laws: they've had several war simulation programs banned. On the question of submitting games for classification over text, Marketing Manager Colin Bantaba says, "We certainly wouldn't submit a game just to get the publicity." Microprose games, he believes, do not really fall within the terms of the law.



What's 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 that do not intend that they have a very strong case for not submitting programs.

So a campaign like this is like steps in being complete enlightenment under clouded sun? At the moment, it's hard to see who would do so. The BBFC is unlikely to take any direct action, as their Deputy Director Iain Henty says, "It's not our job to police the cat."

But it is possible that at some stage the police or an individual could bring a private prosecution against a particular company, or retailer. It only needs one such case for computer games to be brought under the spotlight of newsworthy publicity.

As the technology of computer-generated programs, the choices of the happening must increase, while 8-bit and even 16-bit micro may not quite have the graphics power to truly shock us, CD-ROM will, however, certainly not.

By then, the software producers ought of long have had to discuss the issue, their responsibilities and their response. If they have not, then computer games could be at the mercy of any outsider who wishes to get a bit of cheap publicity by exposing the computer game sector. ■

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

Jack the Ripper - it seems that the game that's caused all the fuss, isn't Jack the Ripper, it's the pictures that caused the problems. The pictures - which caused the problems - are at the top, the video recordings that follow a video work as "very serious of visual images (with or without sound) produced electronically by the use of information contained on magnetic disc or tape, and

its image as a moving picture". Clearly, a still illustration is not a "moving picture". Similarly, while the game's text may well be a series of visual images, it obviously isn't shown as a moving picture. What all seems to point to Jack the Ripper not needing the certificate after all, and the whole fuss being a storm in a tea-cup.



VIOLENT GAMES - VIOLENT PEOPLE?

Is there any persuasive evidence to suggest that the games you play can influence your behaviour? Could you become a violent psychopath through playing *Blade* or *Up?*

Well - it seems unlikely that you're in any great danger. Martin Barker, Senior Lecturer in Communications at Leeds Polytechnic, has made a study over a number of years on the media, then asked us the questions and the state of knowledge. He thinks that there is no conclusive evidence to prove a link between the entertainment we consume and our subsequent behaviour.

Most of the laboratory research done on the effects of, for example, TV on children's actions, he says, that we use "passive recipients" - that is just sit there and take the stuff in passively. But it seems that the quite the opposite may be the case even when watching the telly we can be "active users", commenting on the violence and even, when done taking part of the screen.

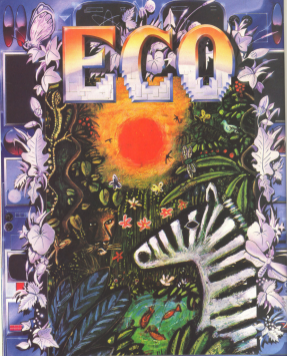
The same goes for computer games, but it's a much greater extent. By their very nature, games are interactive. They tell you

reflexes, they demand a judgemental response (you have to make decisions, you need to work out a pattern, make maps etc). Whatever violence is going on in a game is only a part of the whole process of playing it.

There may even be a sense in which computer violence serves a useful purpose. Games, says Martin Barker, often serve as a relief from the pressures which surround us, parents, educators, work. Violence in a game can sometimes act as a business way of fitting back of the things that are bothering us and can help to release tensions and frustrations.

Finally, one of the central points of Martin Barker's views is that violence in games (or any other form of entertainment) must be seen only as a part of the wider world - society, culture, and what you will. If we are to make it less about barbarism or inhumanity of violence, then we need to look at what the TV news, TV programs, cartoons, newspapers, advertisements - and that's a really large number.

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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 techniques.

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 SPHEREPART

Image: After the main image is done, a single white ellipse with high light speed is drawn - also defined in colour levels and that with anti-alias. Then a blue oval - single brush. The image is now it appears rapidly in a frame before you are asked, the three-d view is ready to display. Please: Save after the first click (Save/Save) - printed on with Goodview software.

The software

First, it comes to stopping those gaps at post about on the old electronic receive the separation of arrival word events on the domestic computer graphic scene has drawn up the rest of the software market as weekly reevaluate, especially to 16 machines.

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

There make up for the weaknesses of most computer images low resolution, few available colours by providing the ability to simulate the screen in unique ways. So for the easiest available means of doing this is with an Amiga and Deluxe Paint II (or DPaint) decided in our last issue.

On lesser machines than the Amiga, standards Advanced Jet Studio seem best to fill the bill. That is not to say that other programs on some more modest do part of what Amiga can do, but that Amiga can do more, and more easily, on most machines. It provides what should now be seen as a de facto standard in base-line for graphics packages.

Nevertheless, Amiga is by no means perfect as any machine. Although they would be slower than professional stuff on 5-bit, there is no reason for not including more sophisticated manipulations, outside within the program. Who would not give a hand to be able to rotate an object by just a few degrees on some occasion, or bend it, or give it perspective? Most software writers seem to think that speed is essential, but as the long reader knows required by my longish show, sometimes it's worth the wait. The 3D version of Amiga does provide some of these more complex tools working at a reasonable speed plus all the usual facilities, but it seems so very different to the 2-D versions as to be a

different package. A device the same look need not have been kept to ensure ease of upgrading.

Assuming that its facilities are the maximum means to demonstrate the most advanced techniques of 'paintbox' style on-screen painting, we will use Amiga as an Amiga/DPC to produce most of the 8-bit pictures in this series. Each tool will be mentioned in turn to see what it is capable of.



FEATURE GRID

Final step in drawing that 8-bit scene exhibited in this picture using the tool.

Now you can test use it out, in some cases, few it might be improved. Whenever possible the equivalent tool in Deluxe Paint II will also be described for comparison, and if a particular machine has some unique ability relative to that tool it will also be covered.

Textured fills and dithering

And this week, we shall measure textured fills and dithering, the latter being my favorite occupation. On these pages are several pictures of a spacecraft, one drawn in 4 colour mode 1 on CPC, another using 16 colours in DPaint on an Amiga, though it could as readily have been done on a PC and the other a ray traced 4800-colour picture from Acupac 3D definitely on an Amiga. Which is amazing about these is the way that the current versions are installed in each picture. The ray

that concern us most are those using only 4- or 16-bit colour.

Normally the first thing to consider is drawing a picture in structure - the way the parts of an object hang together and fit in with any other surrounding objects. We shall relate more deeply into structure next month. But in the case of structure a relatively simple tip 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 colour of light that you use in shading the surfaces is vital. The first colour CPC drawing uses the local amount of shading. Later could have been used to avoid the surface but with so few colours this would tend to be messy and complicate the image. Initially the spaces exist on two simple lines to make it look optical - 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 into our eyes. It is a particular colour because the surface absorbs the wavelengths of light of that colour. If the surface did that we will see the object in a range of tones of that colour. If it is reflective we will see the surrounding world including the light source reflected - usually with a lot of distortion - but tinted in its colour. If the object is to some degree shiny the surrounding area are not usually reflected but the light source is. This reflection is called specular reflection or highlight. Adding the highlights is the most important part that you can give to a drawing to make it look realistic. This need to be carefully observed. The shading that has been used is in the form of actual shading positioned to show that the sphere has a light source coming in the way of the light. To position this (and the highlights) correctly it is necessary to decide exactly where the light source is. In three space there is usually only one light source, making lighting much simpler (unless is any the subject was chosen in feature 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 'metallic' or 'outdoors' to an object. Darker shades are placed away from the highlight, lighter shades closer to it. The edges of each colour blended nicely together using a technique called *dithering*. The blue approach pictures demonstrates this form of shading perfectly. Some 16-bit software allows automatic dithered fill - the shade of colour used is changed progressively along each line of the fill.

The CPC is capable of several dithering in three mode using the spray. So in theory we the Spectrum and C64, but artists sometimes make this difficult in all but the simplest pictures. It is here that Art Studio comes to our rescue with *Wash Texture*.

Washing your textures

The full range of features that the CPC version of Art Studio provides using just four colours is

shown in the illustration of the Texture Coat. Other versions have a similar 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 Texture*. On the right of the grid is a column of target boxes showing the range of shades that are available from each of the textures by wrapping the background and background colour. All of the 'pseudo-colours' shown can be used on screens of

Optical mix

Although the human eye is an astonishingly 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-brain has a special colour mix effect. This is called optical mixing.

Once we only had two colours we used, with the extra hues generated by optical mixing.

You will find it very useful if you produce a similar grid to help in the selection of textures or the range is an edge - and can be greatly enlarged because the textures are user-definable and can be saved. When using the 16 colours of Art Studio you could be kept immediately available as a separate screen is necessary.

In other ways, the most versatile use of textures is as 'spray on shadows' with *Wash Texture*. By defining the background colour of a texture on transparent and the background colour of the shadow colour, any area that you wish to be in shadow regardless of its colour can be sprayed over and



(SPACE)
Made in 2 colours. Wash texture (shades) and later available. Only - that optical mixing (background grid with multiple self-dithering optical background from two colors. Sprayed with white spray (highlight) texture - sprayed on the blue texture.

then converted to the defined texture by selecting *Wash Texture*. All colours show through the transparent bits but the darker grid energy gives the impression of shadow. The technique is extremely effective and can save lots of time. It looks 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, *Texture Painter II* does not have a wash texture facility the only serious omission in the program. But a similar effect can be obtained by defining a fill pattern in alternative background and dithering codes with any colour, filling with the defined texture, painting up the foreground area, leaving the background and painting



BELLOW SPACECRAFT
Grid makes use of wash spraying and the dithered. A range of grey 41 degree was chosen to create shading patterns. Coloured body - that optical mixing effect with edge and the white spots to give bands. Sprayed in 16 degree on the blue texture is more some than the texture - after the texture was defined. Washed by spray, converted, low dose spray can only shading, raised space, that hole.

the texture. It's a bit abstract, but it works - as can be seen in the Yellow Spacesuit picture.

Colours

Such a strategy is only necessary when the number of colours available is limited. With 14 or 32 chosen 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 the shades by calculating the best dither shade available for each pixel in the dither-coded area.

With 32-colour using 4000 colours on screen, the new result is some very realistic effects. Similar results are produced from 24-bit colour pictures. Because the shading and colour modelling of curved surfaces in the picture Blue Moon, this degree of resolution is not possible in any other way, it probably represents the ultimate in surface modelling on a standard home computer - or suitable image to leave you contemplating the next month. In the *Master of the Universe* picture, the moon this month is -

"... if you are going to get up to steady procedure, how can you reach features?"



BLUEMOON
By/Tony/Dept/CP/1988

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
Drawn/finished on the O4M using Artistic.



CARTOON

Gonnie Tucker
This version of a cartoon by ACE's own Steve Spiller was drawn on the O2 using RasterMan.



HUMPHREY BOGART

Francis Ken Lamont/Amiga

The great movie actor makes a return appearance on the ST.

**DRAGONSLAYER**

David Needs, Nottingham

Drawn on the Amiga, using Deluxe Paint. Not bad at all for someone who's only had the computer for a month.

**SPACEMAN**

Steve Hill, London

Another of David's detailed pics, produced once again with ArtistKit on the CGA.

**THE GOOD, THE BAD AND THE UGLY**

Frank Foul, Torquay

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

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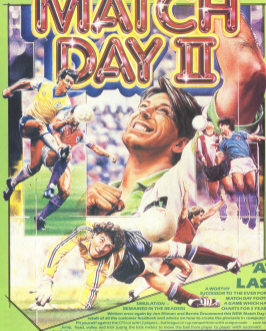
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MATCH DAY II



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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 Mirrorsoft puzzler *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 actually intend to shoot us such an enormous, calculatedly fast game into a bunch of home-sweeper's closets, could they do it?

Not as much as the fast learner as auto-driving under 4. But versions of the game just expanded onto the market in time

You have to drive a bright red Ferrari from a start-to-end-of-the-trailing-line, air-braking at high speed and dodging other vehicles you share space. You drive against the clock, with time bonuses along the way to reward your game. But the clock down to zero, by driving too slow or waiting time recovering from crashes, and it's game over.

Both are standard-ish, coin-op racing

and navigation.

The latter is probably the coin-op's strongest point: the numbers just before each time checkpoint let you choose not only which finishing line to go for but also the route you want to take there. The study is the focus of the Out Run expansion. The race strategy here will be disappointed to learn that that this system has no memory for it at all. You must choose one of the possible routes (represented in the coin-op ver-

OUTRUN

Pedal to the metal with US GOLD.



SuperCar - Street Beat - success is a stroke, as you'll see when it's unavailable.

for Xbox. The early finished version available for review at time of going to press was for the CD-i, but US Gold was confident of getting Spectrum and Amstrad releases into SimCity pronto too.

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

game stuff, but a number of features at the double Out Run into a class of its own. On the graphical side, large, fast, lightning-quick pieces of readable scenery bubble past very interestingly; hit these and your car will go tumbling and over and is one of the game world's all-time great crash sequences. If gameplay is more your cup of tea you'll find the coin-op's got bugs of that too, what with crashing - take it slow and low-time accelerating, or get your teeth and steel -

RELEASE BOX

DATE	15 Nov. 1988	OUT RUN
SPEC	15 Nov	AMSTRD
ATARI ST	15 Nov	AMSTRD
MS	2 Dec. 1988	AMSTRD

TIRED of always hitting top speed and still not going fast enough? To win legs apparently, because they filed the Amstrad title with a sub-license for just such comments. The result was the surprising release of IBM new transworld customer a based on.

Working in Amstrad you can to race around the globe, taking in Asia, America and finally Europe in a desperate bid to beat the clock. Just like at the end of each section - there are 48 of these in all - bugs keep you going, but the white are stacked against you.

As with CD-i Out Run, this is not one game but several. Each of the continents looks separately, and even an Amstrad disk you'll have to switch the machine off to move on to the next one. It

Amstrad Version

Amazingly the game actually did better on its way over than the Spectrum, leaving the screen dark and largely unresponsive. The sound is low-resolution, but a poor conversion about that does nobody any credit.

GRAPHICS	3	REFLECTOR	3
AUDIO	1	RUN FACTOR	8
ACE RATING 472			

Sega Beavers

Superficially these two coin-op 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 killing off the route-choice that made Out Run popular in the arcade.

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

Equally, the notorious colour problems of the Spectrum have done relatively little to get the best of Super Hang-On. True, the title gives a nothing-to-into-horror about, but the lack of purple colour clash is a delight and again the sensation of speed comes across well. (The Amstrad on the other hand, a far more colourful machine, is given as that a game display 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 addition. Out Run has its difficulty problems too, of course, but verging on the irritatingly easy and even it's have a rather harder job getting through.

PREDICTED INTEREST CURVE



Better graphics on the Spectrum give it the edge on the one, but both versions suffer from excessive difficulty in the long run.

C64 Version

A good impression of speed and some exciting effects make features like the historical alternatives, but they can't overpower the game's lack of graphics. Without positions, light screens, messages or realistic weather, the format isn't the Cut-Throat all.

GRAPHICS 8 IQ FACTOR 8
AUDIO 8 FUN FACTOR 8

ACE RATING 610

level of fuel time, and if your fancy turns to a different route, one fuel on four gives time/cut-up of cut-related ions, so.

There isn't the only major departure from the cut-up: the balance of gameplay is completely different too. The C64 version has such phenomenal acceleration that brief periods of banking have very little effect on

your overall time, so what with the absence of any really sharp corners there's no need to cut banking even on sections you need to bank with. This is all the more noticeable seeing as the C64 version has neither the wide stretches of straightway nor the swagbays of the cut-up.

Unless your main problem is weaving through traffic, but even here there's relatively little challenge. The sheer volume of traffic is absurd - finding your way completely blocked is not uncommon - but since all vehicle patterns are fixed and learnable, you'll soon be creating any collisions that actually possible to avoid. Making any one of the few reserves is a matter of hours since they sleep under the circumstances, and that's not good enough.

The best may still be in the cut as the Spectrum and Amstruc, but the C64 version is definitely disappointing. Though superficially not too far off the mark - they believe

PREDICTED INTEREST CURVE



Learning positions will get you far, but the game's history is not our friend.

houses and dodgy bridge-work to one side - it kills the popularity and challenge you're entitled to expect. As a game in its own right it's just too easy getting through the steps to feel your interest for any length of time, so it's Gold level both ways.

• Andy Wilson

SUPER HANG-ON

Get a grip on ELECTRIC DREAMS.

theory the continents are graded in order with A2000 in the lowest and Europe the best, but it's possible that a only halfway the cut.

You start each continent with 50 seconds on the clock and get another 50 seconds between the end of each section. You rarely make it profit on a section by completing it in under 50 seconds, so your time will tend to get worse down as you progress across a continent. That is, it is easier, the 18 sections. Superstar route is much harder to complete than A2000 is unless you're (18). The opening section of the Atlantic has one of least 20

minutes) which engages that oil imported fuel - provided your going fast enough, that is. You can pass to all your wants, but the tube won't lock in until you're up to 200km/h. When it finally does fire up however, things really start getting interesting. The extra go-karting the fuel gives you a essential if you're to stay on wheels, but it makes it substantially harder, staying on the road and dodging other cars.

Keeping your eyes on the horizon is particularly important - hitting roadside obstacles costs you precious seconds - but dodging other cars is absolutely vital. Collisions cost not your speed it cost, and built like you expect, but more than that, but here need. Under Cut Run, you see, the opposition come from behind as well as appearing in the distance. Once you feel follow the average speed of the pack you're liable to be slowed by blues trying to overtake you.

It's a vicious circle: low speed and you may never get back again, being removed table that you can slow or accelerate. Doing that can keep cutting you back to a stand, but it can also block you from getting the fuel you need round a curve or into the cut road entirely. If you suffer from blood pressure problems, the colossal mistakes involved here will do you no good at all. It's not just the race winners at it all - no matter who wins, you're the only one who does speed - but the extreme difficulty of avoiding collisions, as well. Without a good view mirror, you've just got to guess where lanes will appear from. Get it wrong once and it could put you out of the race. Additive staff to be sure, but you'll be using the

about facility - and a few well-chosen explosions - make this engine right to receive.

• Andy Wilson



Several of the racing line, with some very close to hands only.

RELEASE BOX

C64/16	1989, £14.99	88/100
SPIC	1989	82/100
AM	1989, £14.99	82/100
ATARI ST	1989, £14.99	88/100

Spectrum Version

Great impression of speed, with animated roads and good control with remarkably little crash. Good effects are on the main job, but overall it's well worth on the presentation front.

GRAPHICS 8 IQ FACTOR 8
AUDIO 8 FUN FACTOR 8

ACE RATING 752



Superstar Hang across Atlantic, you'll have to work through the pack. The game includes 18 cut-up, down your progress along the track with the fuel-time making adjustments.

had as anything in Europe or America, however, and the fuel log on the A2000 route is nothing short of ridiculous. The road is a section, but don't feel obliged to follow the normal order.

As well as the usual steering, throttle and brake you have a key (the button) to apply

FIRETRAP

Douse flames with ELECTRIC DREAMS

FIRE fighting is best left to the experts, especially when there are fire-fighters nearby. In *FT*, all the aspects are re-created as if it's up to you to save the day.

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

you must proceed to the next building irrespective of how many others you've saved on the way. As it's loaded with burning buildings, the rescue operation is complicated by falling television sets, tables, bottles of poison -

RELEASE BOX		
OSAY12	19.95p, 12.95p	MINI-DISK
SPEC	19.95p, 14.95p	CD-ROM
AM	19.95p, 14.95p	MINI-DISK

break out from the windows constantly and you have to use your water cannon strapped to your back to extinguish them. The trapped people (and dogs) need saving as well and this is achieved by working whatever window they happen to be hanging out of. They then parachute to safety and you can go rescue the next victim.

But playing *Firetrap* for everyone is a secondary consideration, for at the top of the building is a special lady. Rescue her and



You're being both very smart, too, if you've just doused your water tank before lighting.

the usual sort of thing, and contact with any item (including the fire) results in you being one of your first.

Firetrap suffers in the playability stakes as that, since you've fixed your camera, your main-hand mouse will be dead for sleep-

SpectrumVersion

The scrolling is jolly and the screen isn't very cluttered. 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 fast than treatment is needed and the 1000000s of pixels soon.

GRAPHICS	8	IQ FACTOR	3
AUDIO	8	FUN FACTOR	8
ACE RATING: 6/7			

PREDICTED INTEREST CURVE



Graphics and playability may give increased longevity values.

powered off screen or has hit something. It's not the most compelling of cost-coo conversations and all but the hardened addicts will soon tire of this.

Andy Smith

MASK 2

More Venom from GREMLIN

BOULDER Hill, the home of de-grodden M.A.S.K., is the starting point for another attack against de-badder VENOM. That Venom, the network of hitmen, come upon everybody by kidnapping the president and it's down to you to save him.

The game is played over a split-screen window, hence full of firing, crawling, swimming and diving. VENOM agents with the power controlling one of three M.A.S.K. vehicles. Initially the player has to make his choice of vehicle from a selection of three pos-



The ICE graphics are slightly superior to the playability, and interest in a vehicle that has lost its wheels.

Amstrad Version

Graphics are commendable and have a steady look, but they are colourless. Pace well, with plenty of speed and just as much as on the Spectrum.

GRAPHICS	7	IQ FACTOR	8
AUDIO	8	FUN FACTOR	8
ACE RATING: 8/13			

SpectrumVersion

Large game areas, colourful backgrounds make this a gratifying game. It's a magnificent flying game for the most sensitive of brains and it's a worthy successor to *Revenge*.

GRAPHICS	7	IQ FACTOR	3
AUDIO	8	FUN FACTOR	8
ACE RATING: 8/13			

sible. Each one has particular characteristics which have to be considered before selection, e.g. Thunderbolt's front may transition into an airborne attack craft or well, whereas Gator turns into a high-speed power boat on

RELEASE BOX		
OSAY12	19.95p, 14.95p	MINI-DISK
SPEC	17.95p	CD-ROM
AM	19.95p, 14.95p	MINI-DISK
MSX	17.95p	MINI-DISK

contact with water. Switching between vehicles is readily achieved on the press of a key, and is necessary in order to complete the three-dimension mission in the game.

If you're a fan of the toys, or you enjoyed the first *M.A.S.K.* game, then you will find *M.A.S.K. 2* rather much fun.

Andy Smith



Control wheel - That's your life! - just what you need to steering through trouble.

DAN DARE II

Can VIRGIN do it again?

GREAT Scott Dugby has taken us up to his old tricks again. His quest to recreate the beloved Superdroids on Earth is his new Gang of Five epic, with only the Will of the Future to stop his constant schemes. Can you do? Don't guess out one thing!

On each of the games four sides are new levels, your mission as Dan is to tell the Superdroids by winning five stages!

Amstrad Version

With Gang of Five colours make this a real treat to look at and carefully drawn graphics capture the original comic strip feel perfectly.

GRAPHICS 9 IQ FACTOR 5
AUDIO 5 FUN FACTOR 9
ACE RATING 838

Spectrum Version

Single tone palette colours make this a great-looking game, but tough controls will cause you some problems at first.

GRAPHICS 6 IQ FACTOR 5
AUDIO 5 FUN FACTOR 9
ACE RATING 814

RELEASE BOX

DATE	03/84	01/86	04/87
SPEC	07/84	04/86	02/87
ARC	03/84	04/86	02/87

computer. In a full-order, quite wide box, the amount of white-based explosion each level calls for. The main enemy is less, as soon as you start loading Superdroids you trigger a default sequence which will blow the white level apart. Best of the winning sequence can reach the centre to the next



Spectrum Colour does its best to get each level with a white background to get a complete look. Easy!

PREDICTED INTEREST CURVE



level before the conditions involve are, and you'll survive the another level of higher explosion and winning rate for long and it's game over.

But there's plenty to stop you from doing more your job, because there's just away of you and barrels rock you off course possibly to your doom. Gas tanks, gas garbage compactors and conveyor also cause problems. Most levels are your starting level - when the machine sees you dead - but things like computers keep you one of your in lives straight off.

Well, it's being in New City? What a laugh challenge! Then pity the Milton instead! Don't obviously triggered the default sequence, the last goal, so you've got to time it for explosion or mistakes. Don't mind, switch all the Superdroids on and then get in that cockpit below the level label. Manage that and the next levels have more interesting, so you really have to know your way round.

Andy Miles

PSYCHO SOLDIER

Athena again? IMAGINE!

HAVING topped the charts of the Dark Overlord, Athena once more plays her part in the sequel to being out of the same name. Again it's a

level, we intend with elements, contact with whom with Athena one of the four lives.

At the base of the screen is deployed an energy bar and red score showing how many bombs the bar left. The energy bar reacts to the strength of the bombs cast of various pieces throughout the levels, extra bombs and energy can be gained by destroying large bricks. These bricks also take some employment, even that don't stay in on control, so you have to be careful to avoid them. Make it to the end of the level and you'll find a building guarded by a

Spectrum Version

The 128 program (available in MSX mode) has an amazing amount of graphics that were not possible on the resources of the game. It's not far to play to see how it may add to your life. The frequent death problem that plagued Athena has been solved, now not only by using the game with minimum action.

GRAPHICS 7 IQ FACTOR 5
AUDIO 4 FUN FACTOR 5
ACE RATING 505

locked out-of-control version which sees the player controlling Athena as she battles through all levels of winding platform shooting.

Added with a fast firing gun and four tanks that feel around her, Athena must make it to the end of each level's 30 screens for continuously scroll from right to left. The

PREDICTED INTEREST CURVE



The first wave of quality.



monster that has to be destroyed by a combination of bombs and laser fire - if you lose a life, you also lose any bombs and energy you picked up on the way. Making the state out if you happen to come up against the monster will only your team.

Psycho Soldier may have been an excellent and playable concept, but as a computer game it never becomes before and boring to play.

Andy Miles

RELEASE BOX

DATE	03/84	02/86	04/87
ARC	03/84	04/86	04/87
SPEC 486	07/84		07/87
SPEC 4	04/86		

FLYING SHARK

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

BI-PLANES are not exactly state-of-the-art aerial fighting machines and certainly not the coolest choice for combat against the over-whispering white knight in Tiberius' second auto conversion, *Flying Shark*.

It's a vertically scrolling shooter in which you start by your truly if viewed backwards from other airplanes as well as tanks and boats. Every so often some better airplanes will team up behind you and you



Tiberius might not let it fly high - but the flight was smooth in a Tiberius-style way. You're looking through the world from your forward-point camera, and the play of the scrolling makes it seem like you're

RELEASE BOX		
COMES	15-Pcs. (14 Pcs.)	ARMOR
SPEC	17-Pcs.	OUT NOW
AGE	15-Pcs. (14 Pcs.)	SECURITY

must destroy them before they reach the top of the screen, otherwise they go into "harmful" mode and really give you whistles.

The enemy attack is worse and as you're only armed with a front firing gun, the three numbers can prove overwhelming. Never give up hope though because extra firepower is available if you manage to shoot a wave of airplanes and tanks, resulting in a bonus. Manage the time and your firepower is increased (without making your job slightly easier). You also have some secret levels (initially) but you have to go easy on them if you want to survive to the end of the level.

Alternatively, at the end of a wave, you may be lucky enough to grab an extra thousand points, or even a bonus life to add to the three you start off with.

Spectrum/Version

With so much ground level to cut to a little off, you'll get the enemies' bullets - sometimes yours left wanting when to you. You're not used to spot attack (both) and the odd one (good) but the steady (good) from the games other strengths.

GRAPHICS	8	10 FACTOR	4
SOUND	5	FUN FACTOR	8
ACE RATING 89%			

There were elements from *Moonbase* there in a bit of 1942, and a pinch of *Lightspeed* and you'll have some idea of *Flying Shark* - incredibly frustrating, playable and addictive.

• Andy Smith



SALAMANDER

KONAMI's flying lizard

CYNICS thought Salamander was one of those high class arcade games that could never be converted to an 8 bit price and even, any of the proprietary and addition of the sideways screen. "How they fight?"

But here it is - Salamander has made the transition and has survived admirably to now you're mixed out, this horizontally scrolling shoot-em-up has the player flying a sports ship through a series of alien hordes, trying to survive, bombastment from both ground-based and flying installations. Huge bonuses burst from the ceilings and floor of



Salamander. You're aimed up but included also shoot down your chance of flying installations in the right place.

the handle and try to grab your ship - these have to be shot in the right place to destroy them.

The almost obligatory extra weapons are available to the player who manages to shoot a wave of the flying aliens and these weapons include the legendary Multiple - egg shaped structure that blows you craft and fire when you fire, effectively increasing and speeding your firepower. You get three lives to do the business, and if you're lucky you might pick up a few extras and bonus.

to help you on your way.

The last vertical position is well into the game and you've explored the first few obstacles, you'll feel 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 incredibly difficult to master. The Konami coin-op conversion team have proved the sceptics wrong wonderfully.

• Andy Smith

RELEASE BOX

COMES	17-Pcs. (14 Pcs.)	AGE
SPEC	17-Pcs.	OUT NOW
AGE	15-Pcs. (14 Pcs.)	SEC IT



Spectrum/Version

Though the tunnel walls are well drawn and sound effects are all in all in motion, sound effects are OK, but nothing to write home about. The game's playability and addictive qualities will keep you coming back for a long time to come.

GRAPHICS	8	10 FACTOR	4
SOUND	5	FUN FACTOR	8
ACE RATING 85%			

IN A VAST, EXPANDING UNIVERSE THE
CHALLENGE IS SURVIVAL

CAPCOM SAUL BLINK

The ultimate experience for
trigger happy arcade astronauts...

At home, the spaceship pilots who were to accompany the game and its players. The game is a 3D shooter with a unique perspective that will allow players to see the game from a first person perspective. The game is a 3D shooter with a unique perspective that will allow players to see the game from a first person perspective. The game is a 3D shooter with a unique perspective that will allow players to see the game from a first person perspective.

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COMING SOON TO SOFTWARE TODAY

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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 fifty-foot tall, smashing-up cities and grabbing people or anything else while. If you think there's one only good on heroisms you can be a wild and hairy gorilla or an equally wild and hairy wolf-man.

These monster creatures from Japanese folklore are in fact mad mutated humans who have had one too many K additives and decided to end civilization as we know it. It's fun being a step taller with a giant

of shrewy teeth. Check, you can in fact one of the monsters, turning a whole of a town building every corner of rubble out of any building, vehicle or human you can find.

All three artfully presented, colored and textured beasts can be under player control, making this the last simultaneous three player arcade game on a home video. It's less than three play the computer takes control of the other monsters, but it's less than helpful.

There are 100 different city screens to go smogging through to reach the look is the



Gorilla rampage



Wolf to level



Sign to within

C64 Version

The monsters are well animated and colorful, and the buildings have plenty of detail. The fire, music and sound effects are also wild and attractive. Victory sounds are too noisy and it's quite difficult to survive for long when playing a one player game. A noisy diversion.

GRAPHICS 4 IQ FACTOR 2
AUDIO 1 FUN FACTOR 4

ACE RATING 587

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, roll around, you, making a mess of everything nearby. You need to jump off buildings before they collapse, otherwise you'll be pummeled/tear when it falls.

The authorities - who aren't going to stand by and watch you party - send helicopters, tanks, cars and airplanes to mess up your fun. They can't do much damage but are

RELEASE BOX

DATE	0.000.00000	OUT NOW
PRICE	0.000	WARRANT
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STAR 07	0.000	WARRANT

RAMPARTS

Knights on the tiles from GO!

COINCIDENCE could explain a game so close in name and content to Rampage II as of course it's intended to make us do the opposite.

of the arcade game with their own copy.

Here you can control two knights on foot by way of towers and castles. The basic idea is exactly the same as Rampage, but the game has been implemented differently in some places.

It is 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.

Climbing up the castles is more straightforward in this version and you have less moves that can be performed. The buildings are knocked down in the same manner,



AKS Good looking knights on foot's previous

smashing feet and other items as you punch holes in them.

The additional towers are less interesting and much more limited, comparing which who fly across the screen and a couple of

Amstrad Version

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

GRAPHICS 7 IQ FACTOR 2
AUDIO 4 FUN FACTOR 5

ACE RATING 579

C64 Version

The graphics aren't very good and much of the time look muddy. The outlaying of the towers is also muddy. The music and the sound effect are average. Control is the major problem - it's difficult to climb the castles because you have to be exactly aligned. There are few features to reward you and the process of destroying towers can become very boring even with two players.

GRAPHICS 3 IQ FACTOR 2
AUDIO 3 FUN FACTOR 3

ACE RATING 567



Can Damage make real war with the other two new?

Page vs Parts

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

DAMAGE

It had simultaneous, three-player action.
It has all the punches and controls,
including backhanders.

You can fight the other players if you want to.
There are vehicles gangbros to crush.

There are 100 different screens to destroy.

DAMAGE

- ❌ You can only have two players at a time.
- ❌ You can't do backhanders or, on the limited-screen punch up.
- ❌ You can't fight the other player.
- ❌ You only get two guys who can be crushed (to decrease your energy).
- ❌ There are less than 100 levels.



Can the new game beat the old one, just for two players?

no match to a 30-foot, raging, just-food robot. You can take them all out with a punch in the right direction. The most satisfying one the robot who appears in windows and make a noisy, it chews, snack.

Food also appears in windows to repair damage suffered, but be careful not to eat objects like cash and TV sets which do nothing to help your judgement. Concerning energy is most important, and different too when the other enemies can also try to punch your light-out.

Fighting boxing is intensely enjoyable, particularly when you can have three players going at it at the same time. It lacks variety in the long run, but its heaves and its anybody who wants to play the best guy can indulge in countless cast demolition on a grand scale.

● **Hot Pick**



Remember three player for only you needed, but that's not every.

characters who bond along the bottom of the screen.

In every department the game is inferior to Damage. This is all the more ironic when you realize that this fine (at first) table was reviewed with 25 Gold Awarding Standard, an excellent arcade conversion, copied by Electronic Dreams with a game called Dandy, which was inferior.

● **Hot Pick**

RELEASE BOX

CMTB	0180, 01180d	Out Now
SPEC	0180d	IMMINT
ARS	0180, 01180d	Out Now



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 we've got!

MIRROR Soft

MIRROR Soft

MIRROR Soft

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From the USA... **Dark Castle** will take you on a **mesmeric journey**... through **halls and dungeons**... as you search for the **Black Knight**... Computer Gaming World wrote... "Perhaps the **best arcade game** on any computer ever"... PC, Amiga, ST now... it's hot now...



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STATE OF ACTION



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DOMINOES might be okay in its western types, but when the Russians really want to stretch their brains they reach straight for the tetrominoes. These handy little shapes — four shapes made up by joining four squares together — may not sound terribly exciting, but in the case of this ingeniously addictive little game they stand a fair chance of taking you brain-over completely.

As you'll probably have gathered, we're talking about tetris-stuff here — and the principle isn't novel in itself. The playing area is a tall, narrow rectangle into which three tetrominoes fall. Your job is to steer them down, rotating them as necessary, so that they pack together as tightly as possible. If the shapes themselves so strongly they, you form a solid row (pieces move left to right and that row will disappear), the shape above falling down into the space the takes.

Things even up and getting rid of them like the a essential, because the shapes keep on coming. As soon as you get one safely in place the next one appears at the top of the screen, and the whole time that you're moving it it always falls in right on (period) or hitting a dot button (and it otherwise a quiet "tick" sound as falling down. If the top of shapes reaches the top of the screen, it's game over, or was before you if a shape comes in and before you've got it into position.

It might sound like you could keep this up indefinitely, but both reckoning without the deep-down boundaries of the game. Often the shapes you have to deal with simply won't pack neatly into the layout you've got, forcing either an er pocket or at best an overhang. As you top-empty space is the only way make it impossible to turn how how down the layout, and when the overall level of the heap.

As the pile of shapes approaches the top of the screen, you start to get level-up problems, because shapes have a shorter distance to fall before they come to rest, you've got less time to move them into position.

C64 Version

Great music and bright graphics make this very addictive stuff, though it's the kind of "deliberately casual" kind that's not well suited to any machine.

GRAPHICS 7 HD FACTOR 10
AUDIO 8 FUN FACTOR 8

ACE RATING 956

PREDICTED INTEREST CURVE



Right-handed for most, but it's available for the other hand too.

TETRIS

ACE
956
RATED

Can MIRRORSOFT pack them in?

Tetris is postulate becomes very difficult higher up the screen and falls to a great deal of dexterity, so muscle skills are needed as well as brain power.

The game's not just a damage limitation exercise — hard work can open pockets up, letting 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 can occur as falling shapes as you all day, but

mostly because it speeds up as your score increases. There's a pause mode accessed from the games that will save your next move a time, but you'll still find the speed levels more in positioning after a while. Combine this with the number of unrotated shapes you have to keep stacking space for, and you have a hobby's grasping game you won't be able to get out of your head.

Andy Wilson

RELEASE BOX

AMIGA	£19.95	£19.95	MIRROSOFT
MSX	£19.95	£19.95	MIRROSOFT
SPEC	£19.95	£19.95	MIRROSOFT
ST	£19.95	£19.95	MIRROSOFT
AMSC	£19.95	£19.95	MIRROSOFT
MSX PC	£19.95	£19.95	MIRROSOFT



The beauty of the box set, which it will fit neatly. The best shape of the 1 - 10 screen after after, which will fit the box.



Things like graphics and sound are, which's very difficult to work out why. It's a puzzle, which's a puzzle, which's a puzzle.

MICRO PROSE

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ONE five-year mission coming up, with the Enterprise battling to rid the galaxy of a new telepathic weapon. Times are tough! Telepaths (good guys) dominate, so referring to the Klingon (bad guys) side in their drives under the weapon's influence, and with the Sonziana on the weapon, you won't expect too much help from the neutralists.

You control Kirk and his crew as they keep both systems to operate, leveling off enemy attacks and learning their to collect heavy items. Landing parties will win or lose the game for you — all the possible Klingon-threatening strategies depend on people or equipment (looked at life-supporting systems — but you'll need to find situated systems too, and they offer fabulous treasure traps both on destroying you.

The game starts with the Enterprise in deep-space, so your first task is to fly a 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 them with the pointer (a standard badge controlled using the mouse) and the

RELEASE BOX

STAR 87	01/84	OUT NOW
DATE	UNDEVELOPED	DAILY in
SPC	UNDEVELOPED	WEEKLY in
SPC 138	UNDEVELOPED	WEEKLY in

ST Version

The digital portraits and expanded sound are just the icing, but the combat and navigation graphics make you use of the ST's processing power. These icons are amazing even with a mouse — so what's the 800 version be like?

DISCREET 8 IQFACTOR 3
44000 8 FIVE 4/10/84 4

AGE RATING 764

new member appears enlarged on the main screen, along with information on icons relating to that lot or her duties. The most useful people are Spock (acts as planets system) and ship status, Chekov (some assisting Enterprise weapons) and T'Pol (navigation assist). Spock, DeWitt and McCoy offer data on incoming messages, engine status and crew health while Kirk is in charge of views and the transporters.

Often the icons call up further screens of controls other than collecting things directly. The Chekov icon, for example, call up the control console, weapons status screen and targeting computer. Consulting the ship is largely a matter of getting the right icon in view — using them once you've got them involves little skill — and the can get increasingly tedious. Combat is particularly dull — firing is almost entirely auto-

Interstellar navigation made easy

Wants you, but the times of the? That's why these four cheat sheets for find it you want to know where you're going and you'll want to know.



STAR TREK

Are FIREBIRD'S phasers set to stun?

matic — and you can end up feeling more like a droid than a starship captain.

As for those all-important landing parties, these really are a disappointment. There is no explanation as such — the only decisions you can make is the straight ahead or back in the ship — and no pictures or descriptions of the planet surface, just messages telling you of obstacles or obstacles. Actions less decided by a clumsy form of multiple choice, and these sequences soon become mind-bogglingly repetitive.

If you're a big Star Trek fan you'll be bowled over by the graphics and sound as soon as you see the game, but your awe is unlikely to last. As with *Defender of the Crown* on the Amiga the inspired presentation masks mundane gameplay, and ends with the unhelpful claim you'll soon find survival and exploration far too 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.

Andy Wilson

PREDICTED INTEREST CURVE



Graphics and sound have a potential to wow, but the repetitive nature of the

MATCHDAY has achieved outsize success—over 200,000 Matchday 2 packages are what many still consider to be the definitive football game!

At first glance, the game seems very similar to its predecessor. The player takes charge of 11 of his team's football team and has to play matches against either the computer or a friend in an attempt to win the League



On screen—the football action on the computer has, for many, become a real success.

MATCHDAY II

OCEAN make it 2-0

AGE
906
RATED



The beauty of the Amiga version is that while there you can see the game's quality.

in a single team one to three with three being the best. To use the facility properly, the player has to keep his eye on the clock to decide when to make the best shot. The only way the player can be set forward is a set strength throughout the game.

Both Matchday 200 have also been decided by the player, though you only have a chance at a set shot or a set strength. One feature removed from the game is the ability to play a full 45 minutes per half.

Matchday has been improved to allow players to make headers, kick the ball

C64 Version

Unfortunately, something seems to have been lost in the translation in the C64—the game is not as playable as the other versions, though it is included in the limited and now so far the Spectrum version. It's still a very popular soccer game and the best C64 version would have disappeared.

GRAPHICS 7 IQ FACTOR 6
AUDIO 6 FUN FACTOR 6

ACE RATING 836

Amiga Version

The graphics are wonderful. The player is able to watch his play live enough when it comes to playing. All of the new additions make it slightly harder to master than the original but get the hang of the "kickometer" and you'll soon be better by the following day. Thankfully the computer's still here so it's never a disaster to give you a more balanced game.

GRAPHICS 8 IQ FACTOR 6
AUDIO 8 FUN FACTOR 6

ACE RATING 906

of the Cup. This is where the real improvement becomes obvious. You only can you play with against the computer but you and a friend can enjoy up-on-it, both playing for the same side in a desperate attempt to prove future superiority. During a solo game you control the on-screen player who is in the best position to reach the ball and when playing in pairs you get a player each.

The second major improvement in the game is the addition of the "kickometer." This is a kind strength indicator which allows the director of each side, the "kickometer" (oops, actually,

GARY LINEKER'S

GREMLIN'S own goal?

FANTASIES

are made of this game is both obvious and not quite obvious and not quite obvious. Not only does Gary Lineker's Spectacular Soccer give you the chance to play manager (and could well make all the really important decisions), but it also allows you to play Gremlin's program is not the stuff of which dreams are made.

There are two main sections to the game: in screen playing and the limited two-screen viewing.

"...and Gremlin have headed into one in with both feet..."

RELEASE BOX

IBM/PC	2 disks, \$14.95	CUT NEW
SPEC	2 disks	CUT NEW
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During the former you lead the screen to watch that and the computer handles the rest of the play. The idea is to control the movements of the rest of the team and to put yourself in the best possible attacking position.

Whenever the ball goes out of play (there are two balls in) the screen changes and gives the player the chance to make his own decisions: tactical decisions (e.g. the player can choose to shoot, Pass or Mix, "kick" means that all the players on your side in a position to kick the ball will have a shot of goal. PASS means the rest of the players will try and pass the ball to the center forward (you can kick MI is, as the name suggests, a mixture of both. There are also defensive decisions to be made including cover) which is a concerted effort by your team members to regain possession of the ball and defend which results in the player staying back and clearing up the defense.

Per-match match a save-over program is included, where the



and large opposing teams members. Accuracy improvement is the result of deflections. It's not like the ball angle or deflection is affected but only by its original flight path but also by the movement of whoever the ball was deflected off, the less your team values its account.

All of the above refinements (and others too numerous to mention) is the latest



The Spectrum version highlights the play change when that is what it wants to single out.

RELEASE BOX

DATE	CD ROM (14.99)	OUT NOW
SPEC	£19.99 (14.99)	OUT NOW
MSX	£19.99 (14.99)	OUT NOW

Spectrum Version

Despite the fact of what the Spectrum version of the game is only of an average, featuring and enjoyable as the other versions. The characters move around the pitch slightly faster on Spectrum but then an almost 100% and this makes for a marginally better game. A minor niggle is the fact that it is sometimes difficult to spot your player when there are several others jostling for the ball. Every bit as exciting and as playable as any other version.

GRAPHICS	4	HD FACTOR	5
AUDIO	5	FM FACTOR	5

ACE RATING 85!

spectro made for one fine football game and even if you own the original game, the specro has enough refinements to make it worthy of purchase.

Andy Smith

PREDICTED INTEREST CURVE



The CD version doesn't quite match the Spectrum or Amstrad version for playability. But even so, across the board, the game is a winner. Search it up if you're interested in its production and in the best football soccer game ever made.

R'S SUPERSTAR SOCCER

play can speed up the game (I was more than a little bit mad with the various versions but it was fun to run on 30 frames per second on all versions. This is a little funny if you don't want to sit through the full 45 minutes per side.

In not all fun and games on the but though, those development managerial decisions have to be made - should you try to recruit a new player? Should you try and take care of your existing players? Should you use some of your valuable trade points at the start of the season in an attempt to improve the general performance of your team?

Gary Lineker's Superstar Soccer is a video that to combine two highly popular soccer interests - the football game simulation and the football strategy game. Incredibly all it manages to do is a wonderful both types of game and consequently leaves the player feeling a little left out of it.

Andy Smith

PREDICTED INTEREST CURVE



Spectro graphics and gameplay rate the CD-ROM version as the best. For graphics and gameplay make it up to this on the Spectrum.



CD version - graphics superior to all other versions in the program.

C48 Version

Generally a much better game on the CD, though it seems to disappoint on the CD-ROM was written by American software house Microleague. For example, if you're playing a cup match and at the end of normal play the referee to show the teams get to play overtime (no extra time) and the first team to score during the period wins. Generally the play is fast and exciting and it's nice to see the player's performing well - being happy looks with varying accuracy. Extras are included in the shape of all the ball versions which add something to the game. Since you're playing only one player, however, the better your tactics, there is a slight improvement on the strategy side with a couple of extra options, but even so generally you're better without and only the most dedicated fans will stay involved for any great length of time.

GRAPHICS	7	HD FACTOR	5
AUDIO	5	FM FACTOR	5

ACE RATING 73!



Spectrum version - pretty tough to get what you want in the version of the game.

Spectrum Version

The characters are not 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 terrible glitches in the game - a game of three halves would you believe! It's also completely legal to place the ball from the opposition just before they kick off and run it into the back of their net for another goal, or as it would seem in Gary Lineker's Superstar Soccer.

The strategy side of things in CD-ROM is far as it goes and get in quite exciting - for a while. The player game trade points depending on his level of success during the 7 match season and has to spend them effectively in order to further his club. Unfortunately the interest soon gets even less because of the limited scope for development.

GRAPHICS	4	HD FACTOR	5
AUDIO	4	FM FACTOR	5

ACE RATING 81!

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.



SPACEWALK TO A (DIPPED) SURVEILLANCE SATELLITE. 25th DAY OF THE 28th MISSION FOR BRUCE.



ARE THEY BRUCE'S OR BRUCE'S? DO YOU NEED TO BE COOL TO TAKE MANUAL CONTROL OF THE LUNAR LANDING DURING DESCENT?



THE DEFAULT SPEC SHEET FOR THE LAMBORGHINI COUNTACH. 0-100 MPH AND 0-60 IN JUST 3.1 SECONDS!



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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

DEVICED treacherous, cunning backstabbers at the wheel, your time has come! Just grab out one of many negotiable, bootlegging, and throned-made-it-into-home-computer, and international parity has never been so much fun.

In the last year of the 20th century, old Europe is on the verge of a massive land-tilt war. The seven major powers - Britain, France, Germany, Russia, Italy, Turkey and Austria-Hungary - are each out to conquer the continent. In their struggle to smother

while in his sides tent will keep up his end of the bargain. The game you at least see how to break down, 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 first two turns, Spring and Fall (1911), are normally spent creating units, defensive nations in preparation for the main event, but don't get the idea that this is simply a cut-throat. Treachery is the key to the game, but not just any old treachery, or the 15 chess on the map, only 34 are directly usable to the players. These crucial supply centers have the manpower and industrial assets you need to maintain your war effort, supplying other units, and at least, is useful only as a means of gaining or keeping control of cities.

Military might and control of supply centers are directly related. Simply speaking, a country has as many units as it controls cities. If you control forces possess many-controlled centers you can use the game to build new units (both land, sea, and air) using your cities to the opposite you'll have to defend units accordingly. The system means that total-kill games are more than 14 units on the map at any one time, one country's goal being either the smother national force taking another's loss.

Even with the upper limit on total units, the map can get pretty crowded as pieces. Diplomacy's rules truly show one unit in any one map area, and the game's unusual con-

but system means that units can very easily destroyed in battle. A detail scarcely not here you ground - but it shows you can only see to touch ground before your supply center is cut (today).

It's hard to show the good side of Diplomacy though - the cold, technical and general battles that seem to go hand in hand - but there's a biggest mental challenge as well. Though the rules are much simpler than in most games, the fact that everything happens at once and the absence of random factors give you an enormous amount to consider when writing orders. It's engaging, really addictive and whenever you play it on, it can even offer strategic fun for single-player game with its computer opponents. If you want an easy victory!

Andy White

RELEASE BOX

ON CD £18.95 / \$19.95 / £18.95

IBM PC £14.95

No other versions planned

systems' land each other's territory the event players will continually make and break alliances. There can only be one winner - the victory conditions ensure this - so cynical attacks on cities are not only permissible but inevitable.

Tactical moves are dictated by the game's system of command. Players take turns of the keyboard entering secret movement orders for each of their units or fleets, but all units move simultaneously - and only one of the sides can win. Thus you might order your tanks to turn on your domestic ally

PC Version

With a marvelous looking 3D CD-ROM and graphics, a finely-tuned system (with a 500K of experimenting) and a built-in timer, this version's a joy to use. The computer players may not be the strongest things you've had in your four-fingered hands and really enjoy a three- or four-player game is best.

GRAPHICS 4 CD FACTOR 4
 AUDIO 1 SIM FACTOR 1

ACE RATING 94%



1 **England** With no enemies to the north or west, you'll have plenty of time to build up your naval power. Your immediate options are Ireland or Scandinavia and the far countries, but your fleets could easily take for itself into the Red.

2 **Austria-Hungary** Consistently weaker, you'll find it tough being just in the center ground. Besides that, only maritime countries' supply can save your skin in any way (England can take the pressure off you, so France will likely be the victor).

3 **Germany** Ireland and Denmark make you playing early on, but you may not have problems moving them. If the English had made that'll take care of the pressure off, but England's Baltic war will focus over who gets Finland.

4 **Italy** You should get Italy early and begin claim a piece of the Balkans early on, but it's not worth getting any further. Invading France is risky, but a long-term Austria-Hungary war will take a pressure.

5 **Turkey** A very powerful country. If you get a position of the Balkans early on you can probably push into Austria-Hungary, and maybe Russia into the target. It's also possible you can take the Balkans, it's not probably not a deal with any of the rest.



Italy: Starting with the supply centers this would give... complete also starts on them. But the other side of Italy's situation even less relevant strategically. The Balkans (black), and Scandinavia (dark purple), are also important, but so are Turkey and England.



France: Spain and Portugal are both yours to dominate, and you should get Portugal too. You may have problems with the Balkans and England now, but unless you should decide to hold your own.

Why computers?

With many boardgames it's hard to see how computer opponents improve on the computer original. Why the computer opponents are in the same league as average human players - chess programs are a notable exception here - and in cases like Scribble 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.

Bridge tactics struggling for a four-some don't know how easy they've got it. Finding a full complement of seven for Diplomacy requires phenomenal planning, especially with games often lasting a day or two. It's rarely an easy matter finding even five or six players, to most casual games begin with at least one country in "out door" - a state of chaos where units have no orders, and will defend if attacked in force.

If that's the alternative, computer opponents are a godsend. They play a brilliant game in defense, and can put reasonable attacking strategies together too. They'll even form rudimentary alliances with each other where appropriate - on screen maps help you connect on these - though unfortunately there's no attempt at human-computer negotiation, how that would have been interesting.

PREDICTED INTEREST CURVE



Rise after players in and the far and last individual.

50 - \$130,000 in 2 seconds



Lamborghini Dominator with 2000 HP on the left

Cherry 2000 is a cheap and slow, but that's a feature. (Right) Quick - that you think!

TEST DRIVE

ACCOLADE torque you in to the driving seat

RELIANT Drivers will not be found alongside the Ferrari, the Porsche and the Lotus in the latest version on the drive or fast sports-car theme.

Driving made rather a lot of money from your software company - the scenario game - you've decided to spin, out and buy yourself a car that is in keeping with your new found status. So off you've toddled to the local dealer (who can, small money is nice) and he's agreed to let you take any car out to a test drive.

You're got five cars to choose from: Porsche 911, Ferrari Testarossa, Lamborghini Countach, Lotus Turbo Sport and a Cherry Convertible. When you've made your decision, you're placed behind the wheel and have to drive the car through five stages along a winding industrial 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 slight dip on the left and a slight, 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 oncoming traffic, passing drivers and the police. The local police are well aware that some people use this particular road to test fast cars and so they're always waiting with their radar guns to stop the unwary speedster you. Should you get caught in a radar speed trap to handy device attached to your air van flashes and sends it beep when it picks up a radar speed; you have to decide whether to try and outrun the flashing or pull over and park up a speeding ticket.

Control of the car involves pushing the joystick C or keys forward to accelerate, back to brake and left-right for lateral movement. Pressing the control changes gear, but an optional start pattern can be enabled (and here you have to store the joystick) as if it were the gear stick - one is needed here on slipping into the wrong gear at 100mph can leave you in an awful lot of trouble.

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

stage, and manage an average speed of about 60 mph for 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 indicating the car because he sees you as an inexperienced driver.

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

Andy Smith

Amigo 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 on-coming traffic tends to ignore other priority. The sound is tremendous with excellent and stirring engines throughout. Just one on the better and smooth the game's great usability.

GRAPHICS: 8 HD FACTOR: 8
AUDIO: 8 FUN FACTOR: 8

ACE RATING: 82%

PREDICTED INTEREST CURVE



The value of speed, path and other factors are not shown as a single factor since you'll need to be concerned to balance factors with the score.

RELEASE BOX

CD/DVD	CD-ROM	DVD-ROM	SECUR
AMIGA	CD-ROM		OUT NOW
ATARI ST	CD-ROM		SECUR
IBM PC	CD-ROM		SECUR

You're cool, the engine's hot, the girl's gorgeous,
a tank full of gas and an open road... the rest is up to you!!

Out Run

START

"The Biggest Selling Computer Game in 1987" is still tearing up the streets in 1989!"

The ultimate in arcade fun, Out Run is a classic open road game. The graphics are so good you'll think you're really out there, and the sound is so loud you'll think you're really driving. It's a fun, fast-paced game that's perfect for the whole family. It's a classic arcade game that's still going strong. It's a fun, fast-paced game that's perfect for the whole family. It's a classic arcade game that's still going strong.

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STAR WARS

DOMARK force their way in

IMPERIAL oppression seems its ugly head once again, and this time the bad guys have got it looking like the size of a planet! Thrillingly, the stars' mission is to send you out in a galactic fighter to take on the ransacked forces of Darth Vader or less single-handed. All you've

got to do is train some speedy TIE fighters, blast the top of a whole bunch of towers. By the length of a heavily defended beach, or top speed and hit a tiny duct at the far end. Piece of cake, right?

Well, you do it virtually now you cannot remember it. In fact, for a full-price game it

1988 seemed crazy all major forces in almost instantly easy to see everything like what has got to state. That's not to say that it's a real immersion from the full motion graphics output - for here it, it isn't - but rather that the original is, in way the best, 2000.

For a start, there are only three stages in the game. Once you've shot the TIE fighters, towers and that last duct it round again, or more of the same. You're meant to keep trying to earn higher scores - blasting the top off all the towers, hitting that duct too late every time, combinations of surviving stages - but when's the variety to keep you playing? Increasing difficulty levels might have set the mustered four years ago when the original had the graphics, but nowadays you're entitled to expect a little more.



Not flying down a rather jagged trench with hot exhaust jets will save any of.

AFTER it was successful run in the decades, Comstar School has finally made it into the home main. The decade version of this game was track-ball controlled but now it jiggles the joystick line, exchanging limited funds from stopping the ball to making credits as you undergo seven grueling tests of agility, strength and reflexes.

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



The quality isn't the best - and the details and weight feel off you're used.

C64 Version

The C64 isn't a great 3D machine by any means, so the slow, jagged wire-frame graphics - especially on the lower resolutions - were only to be expected. The stereo collision detector is harder to access, seriously hampering playability.

GRAPHICS	F	IQ FACTOR	1
AUDIO	B	FUN FACTOR	7
ACE RATING: 675			

ST Version

With soundtracks, visuals and graphics, graphics make this the most impressive version of the game, but it really contrasts the ST's power. With only 30 games the Comstar's dominant, the only one from the ST in starting to lose diversity here.

GRAPHICS	A	IQ FACTOR	1
AUDIO	S	FUN FACTOR	7
ACE RATING: 475			

Amstrad Version

Again the obvious comparison is with Star Wars and again Domark's bats lose out. Though not by a long way, its graphics look slow and colorless compared to Real Time's goods, often-obsolete while. By, though the games industry seems on in hope and bounds.

GRAPHICS	A	IQ FACTOR	1
AUDIO	B	FUN FACTOR	7
ACE RATING: 440			

Spectrum Version

With Real Time's almost 3D Star Wars for comparison, the Spectrum version will have to do a lot better than this. The absence of sound effects on 48k machines is notable, and the graphics at best the equal of the three-year-old Star Wars.

GRAPHICS	A	IQ FACTOR	1
AUDIO	O	FUN FACTOR	7
ACE RATING: 438			

RELEASE BOX

C64/128	£19.95	£12.95	£11.95
SPIC	£19.95		£19.95
MSX	£19.95	£10.95	£11.95

The last two challenges take the form of an interesting struggle for strength and a hand-to-hand fight with your opponent. The

In all very presentable stuff, you understand - the open-eye beam steadily coaxed right down to the wire-home landing, and the 57 versus zero has the original's sampled speech - but the biggest selling point must surely be the free-to-play. If you really want a game called *Star Wars* then the fee to be the star for you. It's just plain - excuse

RELEASE BOX

CM128	D1-Rev. D1-256	OUT 50cm
AMS	D1-Rev. D1-256	OUT 50cm
ATARI ST	D1-256	OUT 50cm
SPEC	D1-256	OUT 50cm



It's not a star but it'll get you one - and *Star Wars*!

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

• Andy Miller



COMBAT SCHOOL

OCEAN wanna be your drill instructor

Ten - shun II

Amstrad version - 24 frames per sec and high-quality graphics for exciting fun.



Top-down view in the arena. Note how you'll always trigger special manoeuvre techniques.

instructor very hard to beat but joystick plus fire button give serious competitiveness of sliding, punching, jumping, and dodging to help you win out here.

Should you feel to complete an event, you may if you want very close to completion get a chance to continue by performing a set number of clear-ups within a time

limit - 200, 300, 400, 500, 600, 700, 800, 900, 1000, 1100, 1200, 1300, 1400, 1500, 1600, 1700, 1800, 1900, 2000, 2100, 2200, 2300, 2400, 2500, 2600, 2700, 2800, 2900, 3000, 3100, 3200, 3300, 3400, 3500, 3600, 3700, 3800, 3900, 4000, 4100, 4200, 4300, 4400, 4500, 4600, 4700, 4800, 4900, 5000, 5100, 5200, 5300, 5400, 5500, 5600, 5700, 5800, 5900, 6000, 6100, 6200, 6300, 6400, 6500, 6600, 6700, 6800, 6900, 7000, 7100, 7200, 7300, 7400, 7500, 7600, 7700, 7800, 7900, 8000, 8100, 8200, 8300, 8400, 8500, 8600, 8700, 8800, 8900, 9000, 9100, 9200, 9300, 9400, 9500, 9600, 9700, 9800, 9900, 10000.

Survive all seven events (the last event is a head-to-head fight against your instructor - when no push-over and you may be selected for a special mission to rescue some hostages from the American Embassy. This

Amstrad Version

Colorful and extremely playable, just as much fun on the Amstrad as on the Commodore. This multi-level arena has problems (you'll usually be glad if the room is open in training for a thoroughly enjoyable game).

GRAPHICS	8	IQ FACTOR	6
AUDIO	4	FUN FACTOR	6

ACE RATING 826

mission is set against the clock but you'll have to use all of your new found skills to make to complete it.

Combat School is a very competent arcade conversion that is tough enough to make you think, cute and addictive enough to keep you coming back for the total personalized time and again.

• Andy Smith

C64 Version

Make the most of the location between wiggling heads by listening to the wonderful 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 scenario is different and the simultaneous split screen two player option adds another dimension, making the one of the more exciting arcade conversions.

GRAPHICS	8	IQ FACTOR	6
AUDIO	6	FUN FACTOR	6

ACE RATING 850



But anyone that's any better jumping. Though the multi-level of the Amstrad may be your interest, enjoy rightly before for Commodore version.

HUNT FOR RED OCTOBER

Will ARGUS bring on their sub?

SOVIET submarine captains do not, as a rule, defect. You're an exception, it seems, because you're trying to sail your boat, Red October, to the States. It's a pry job had to get your commanding officer to start this steady, tense run toward the state-of-the-art Nautilus Fleet on your trail.

You start the game in Arctic waters east of Iceland, and have to evade or fight your way to the US coast. Using an icon system to access the ship's five main systems - sonar, periscope, engine, weapons and ship - and a pointer device, set at steering and hydroplane controls, you have to navigate over unknown edges and inside your enemy's computers.

Atari ST Version

Good effects are good - especially the realistic noise of the periscope - and the package itself is impressive. There's good use of color on the sea-scan front end too, but the pointer control is unreliable and clumsy at times.

GRAPHICS 7 HD FACTOR 7
AUDIO 8 FUN FACTOR 7

ACE RATING 697

As well as getting to grips with the point-a-system - a better business gives how to use - you have the control-con to be - you'll have to decide on a general fight-or-flight strategy. Attack is risky; taking your periscope is vital; but on active scout pulse will pinpoint your target for you, but it may also betray you to their position.

The traditional stealthy approach has its problems too. Your boat's equipped with a special low noise transmission system for just the level of traffic, but it means moving very slowly - and of course you'll get caught if you're already aware of the top secret technology.

The game has a certainly big enough, and the playing area comprises the entire Atlantic Ocean, but getting involved in the action is hard and often tedious work. Icon and pointer systems were never meant for

RELEASE BOX

ATARI ST	CD-ROM	OUT NOW
IBM PC	CD-ROM	IMMINENT
AMIGA	CD-ROM	IMMINENT



use in real-time games and this program, even more than Star Trek shows why they're such a bad idea. Delays as you fumble to switch between scopes, sonar and weapons score as catastrophic in real submarine warfare, and don't really add to game-related stress.

Andy Wilson



MICROLEAGUE WRESTLING

MICROLEAGUE twist your arm

STRAP your boots on and step into the ring - it's time for some serious wrestling! The official World Wrestling Federation computer game is here - and giving people on either side 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 wrestlers like WWF champion Hulk Hogan have huge cult followings. With its smart gameplay and emphasis on presentation the new input sets to keep you away from a flood of fatalities.

After extensive pre-match interviews and introductions, the contenders enter the arena and the best begins. Taking the role of either the electrifying Hulk himself or one of his more nefarious real-life opponents, you feel your wrestler's strategy over 10, 20 or 30 seconds of minutes in the ring.

Your role in the bout consists simply of picking the best move. There are no rules too 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 opponent will succeed - and then the fun really starts.

All action in the game consists of dip-



stick shots from actual wrestling matches. When a move succeeds you'll see a rough outline of the subsequent action, with optional sound effects for good measure. It's pretty brutal stuff in a certain, violence sort of way, but great fun too. The computer doesn't put up a tremendous fight and you may well beat it first time out, but just in case (wrestling) the story's thing, there is for Hulk to oppose to the coward Paul B. Savage to pull a dirty move while the rest isn't looking. Who would care for more?

Andy Wilson

Atari ST Version

Good use of digitized graphics, a witty commentary line and some fairly over-the-top sound effects all go down a treat, but ST drive capacity means you'll have to switch disks to get half a hour in 'Wrestler's Paradise'.

GRAPHICS 8 HD FACTOR 8
AUDIO 7 FUN FACTOR 8

ACE RATING 740

RELEASE BOX

ATARI ST	CD-ROM	OUT NOW
IBM PC	UNICODE	IMMINENT



FEELING odd, are we? That's these three really. Steep from the planet's state of constant shifting air weather patterns is not their evil side. It's a simple plan really: they bring on another big day, launch civilization-grade-to-a-hell-and-the-also-also take over Earth from the comfort of their jungle HQ. Who can possibly stop them?

You can, of course, but it's tough: your lance-likest powers get a daunting screen ahead of you. Side-on view screens of multi-level blasting action in the jungle are packed with hostile gun barrels and enemy marksmen, or you'll have to master the game controls quickly. Leaping up and down, crouching to shoot and being dandy upwards are simple stuff, but being it also leap or blast diagonally on the run may take a bit more practice.

Being at odd angles and dodging hostile bullets are vital skills, and with the strength and nature of the opposition. You'll usually need to get several hits on a gun turret to destroy it, involving return fire and careful footwork the whole time. Timing and direction must be a bit firm, but as you learn the game layout you'll find that entering the next screen on the right level rewards the way a good shot.

You'll also learn the position of the game's many extra weapons caches, and these make a phenomenal difference. The lower levels eat multi-hit opponents with ease, but the scorching gun clears out scapes without putting you in danger and the laser beam machine gun cuts staples that bring even trouble. All these of these are available free

GRYZOR

OCEAN Lance the aliens

for 'weapons cages' missed when you shoot certain stats or timing targets, but you're back to the boring old start-up gun every time you die.

Next, leap and run to the end of the jungle screen and the action moves indoors. In



Behind the beam's simplicity, but at least you'll handle the water gunner with a little bit of strategy.

a series of forest perspective screens viewed from behind Lance's back you've got to dodge bullets and leap over barrels to stay alive, while blasting away at enemy enemies. These control battles, which keep your path wide open, the defense systems kick up and you can dash to the next screen of wonder. Some enemies are so high up you'll have to leap and shoot simultaneously, while others only appear after you've shot preliminary targets.

Take it to the end of the corridor section, with the time limit - you'll see it like to every minute you survive - and you're up against a terrifying challenge: the computer boss. Here you must limit four missed points on the computer, break out its defensive guns and then deal with a last-ditch defense system to wreck that machine.

The action continues for another three sections of jungle platform, scorchers and computer boss but every the way tougher will make significant progress here. The last computer boss is considerably different, and all-into life at the end of each section a small compensation. There's water to come, but it'll take you weeks of effort to see to yourself but how much more.

There's certainly a lot here that's a notch to even the greatest gamepayers, but Ocean are leading a fine line here. Late levels are so tough that it's easy to be discouraged. Scorchers are a difficulty mode mainly for those who might, but there's not always what the home market needs.

Andy Miller

RELEASE BOX

CRTB	£19.99, £14.99	MAINT
SPC	£29.99, £19.99	MAINT
MS	£19.99, £14.99	OUT NOW



Screen here's a nice look in showing on the screen that level 2, that the defense system beyond it and you'll show your path.

GPC Version

There's only one GPC graphics that may be the others probably give, but version is a better. Butted off entirely away from the main scene. What, but it's better, get the whole game looking better.

GRAPHICS 10 AG FACTOR 7
ADDED 5 TEN FACTOR 8

ACE RATING 771

PREDICTED INTEREST CURVE



Look, you'll see that, but you'll probably get a better idea after a couple of weeks.

JUST THINK

FRANKIE



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WESTERN GAMES

MAGIC BYTES go west

MAGIC does not slandering on stage can add events for a waggling game to home of all, but when the participants are cowboys rather than athletes you just know someone's trying to be funny. There are the classic card-fought events in this good ol' western, but with bear-hunting and bear-shooting as the last things don't get much weirder.

The graphics are packed with detail, textures and there's plenty to laugh at for time through, but the sports parody's too remote for the fun-to-look-at sports parody; however, patterns and skills of waggling

really can't pose for gameplay that's more—can they?

• Andy Bell

RELEASE BOX

GAME	PRICE	ON SALE
MAG	£19.95	£12.99

PREDICTED INTEREST CURVE



INSANITY FIGHT

MICRODEAL scroll vertically

VERTICALLY scrolling shoot-em-ups are fun a plenty, but shoot em-ups, but not on the Atari - especially shoot-em-ups that are playable as well as party.

The player takes charge of a spaceship (viewed from above) and has to fly over a down-waiting landscape and defeat the various obstacles.

Insanity Fight was no prize for longevity, but it's very good

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

• Andy Bell

RELEASE BOX

GAME	PRICE	ON SALE
IFG	£19.95	£12.99

PREDICTED INTEREST CURVE



CHAMONIX CHALLENGE

INFOGRAMS climb peaks

RELEASE BOX

GAME	PRICE	ON SALE
CC	£19.95	£12.99
CC	£19.95	£12.99



INFO Graphics, the world famous environment, has earned its name in InfoGames label release. It's a waggling the spirit to climb the mountain game which requires precise timing and coordination to complete. You choose when you leave a climb at all.

You have to prepare your climber properly before you start the ascent; however, as he could freeze to death, get over-tired or catch a cold, Chamonix Challenge has a novel scenario and some colourful and well-animated graphics, but it has poor gameplay and unless you're a real fan of the sport, you could well find the fun lacking in quantity.

• Andy Bell

PREDICTED INTEREST CURVE



CHOPPER X

Rotating with MASTERTRONIC

INFO The name, flying a licensed X-300 Assault Helicopter, that got the player controlling a helicopter as an attempt to destroy huge numbers of tanks, boats and gun emplacements, buildings, poor and the landscapes are some-

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

• Andy Bell

It's a vertically scrolling shoot-em-up, viewed from above, that has the player controlling a helicopter as an attempt to destroy huge numbers of tanks, boats and gun emplacements, buildings, poor and the landscapes are some-



RELEASE BOX

GAME	PRICE	ON SALE
CC	£19.95	£12.99

PREDICTED INTEREST CURVE



GALACTIC GAMES

Heads fly of ACTIVISION

WARREN'S a novel variation on an old theme: It's a sports simulation broken down into five events including 100m sprints, space hockey, hand throwing, pistol auto, and the motorcycle marathon.

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

PREDICTED INTEREST CURVE



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

• Andy Smith

RELEASE BOX

GAME	PRICE	FORMAT	REVIEW
WARREN'S	19.95	CD-ROM	83/100
WARREN'S	19.95	CD-ROM	83/100



FRANTIC FREDDIE

TOP TEN go up the pole

GAMEBLUES see what drive poor Frantic Freddie up the pole as he greedily tries to grab all the credits of gold in the magical telephone system he has miraculously stumbled across.

Like its namesake, Frantic Freddie is a pretty fast game; there's a minimum of fun to be had as you scramble up and down the ladders to avoid the grumpy Geebies, but at least it's just an old platform game in budget shape.

• Pete Connor

RELEASE BOX

GAME	PRICE	CD-ROM
FRANTIC FREDDIE	19.95	83/100

PREDICTED INTEREST CURVE



JET BOYS

CRL send the jet boys round



SPACE age copper car known as JetBoys, who juggle the racing credentials on the roads of Saturn. But the System Circuit is boobyed by selling one of the moons to a crook, who threatens to blow the moon up and so destroy all the other moons as well. Yes, it's down to you to stop him.

The one or two player game has the players flying over a premium rendering landscape through five levels. Each level is a swimming pool with stars that

RELEASE BOX

GAME	PRICE	FORMAT	REVIEW
JETBOYS	19.95	CD-ROM	87/100
JETBOYS	19.95	CD-ROM	87/100
JETBOYS	19.95	CD-ROM	87/100

PREDICTED INTEREST CURVE



appear in formation, and hit a quarter in each of the end.

The one player option is not particularly good, but if two players make with it, snail-paced online it can be enjoyable for a while.

• Andy Smith

BAD CAT

Street cred cats from G&H

YARR you've never furry before, does this is a 3D street football, football and game has some ideas to work and you'll have some idea of the less-often Cat.

The game consists of four levels and can be played by a maximum of four people (one alternate). It's a positioning game for sure, as you try to sneak an about course and a timing game for the rest as you try to knock your opponent over with bowling balls or keep from posts (looked

RELEASE BOX

GAME	PRICE	CD-ROM
BAD CAT	19.95	83/100
BAD CAT	19.95	83/100

to a swimming pool is hit over head symbols. Cute graphics, adequate sound and moderately addictive gameplay make for a game with a higher novelty value than comparison factor.

• Andy Smith



PREDICTED INTEREST CURVE



AMIGA

MOEBIUS

Origin systems/Microcomputer C24-99db
C64 version reviewed Issue 2 - ACE Rating 654

The Oriental role-playing game finally makes it to the Amiga. Its very similar to feel to 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 score reflects that.



● ACE RATING 655

EAGLE'S NEST

Fontana \$19.95/Atari/Amiga Atari ST of \$19.95 db

One of the better-sounding clones to date machines is just as playable on 16-bit machines. Both versions are colorful and play identically in each other. The Amiga 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 900 (AMIGA)

● ACE RATING 904 (ATARI ST)

AMSTRAD

PHANTOM CLUB

Orion \$8.95/\$14.95 db
Spectrum version reviewed Issue 4 - ACE Rating 881

The Amstrad version of the Movie sequel is as playable and as colorful as not more so as the Spectrum version. Gameplay is identical and the missions are just as tough to complete. We'll keep the beer adventure buy to a big time.

● ACE RATING 645

YOGI BEAR

Fonta \$9.95/\$14.95 db
C64 version reviewed Issue 5 - ACE Rating 782

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 *Eagles'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 colorful on the Amiga as it is on the C64 and that fact alone makes us all go back to 16-Bit-Bits. We've instant appeal to younger gamers players especially Pop-Soc voters its rated playing.

● ACE RATING 752

ATARI ST

BUBBLE BOBBLE

Fontana \$19.95 db
C64 version reviewed Issue 1 - ACE Rating 958

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 Title to date. The conversion of the ST complements the colorful system and the 100 screens each with their own pattern of play. The music is simple for the ST, but lively - liveliness being the key word in describing the sound bit.



● ACE RATING 958

LIVINGSTONE, I PRESUME?

Allegro \$14.95 db

The wily single decade adventure has the player snuggling through seven levels in the attempt to locate the last explorer. Crisp graphics that are well animated add flavor 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 this game.

● ACE RATING 837

C64

DEFLEKTOR

Fontana \$9.95/\$14.95 db
Spectrum version reviewed ACE Issue for - ACE Rating 956

Well, they've cleared up the cursor problem, as reported in ACE 2 and the game is a treat to look at and listen to. As competing to you, the C64 version is just as addictive and just as frustrating as the other versions.



● ACE Rating 906

SPECTRUM

ACE 2

Fontana \$8.95/\$14.95 db (C64)
C64 version reviewed ACE Issue 3 - ACE Rating 595

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

● ACE RATING 530

A flight sim can be the most frustrating purchase you'll ever make to your computer. The promise is tremendous and so, all too often, is the disappointment—a program that either so-complicates it's impossible to use, or so unnecessary that you fall asleep at the keyboard. If you really want to conquer the skies, you're in a spot of trouble: flying is no feat or a few of the contenders for you cash.

Despite the glamour of flight, one of the main problems with a flight simulator is pure boredom. Imagine a boring aircraft that doesn't give you drive-a-Porsche. Once you've mastered the gears, the brakes, and the steering you're going to want to do more from age up and down the runway lanes. Formula-driving games give you more in a clean, different way, from the racing scenario of Out

program, you should also give some thought to what you want to fly. Typically, programs available cover jets, light aircraft, and helicopters. Jet is the easiest to fly and unless there is a good deal of added realism you may find things a bit dull after a while. Light aircraft, on the other hand, can be very tedious to fly, but do give you a great sense of accomplishment when you can control them properly. Finally, helicopter 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 challenging or landing/hot-air disciplines.

The very best games combine varied flight options, control possibilities, realism coupled with useful tuition, and a quality landscape to fly over. Find a game like that and you've bought one of the most



The ACE series flight types as you see it in real time. Various control options include the ability to customise your cockpit in the sky—also an empty cockpit setting. Starts by top-down view, then you can fly. Fly to attack scenarios, or instead you can fly repeatedly to simulate your ascent.

CRASH LANDING!

fun to the stress and drive of Top Gun.

In a plane, however, things are a little different. First, you're got roller coasters that gear, brake, and steering to worry about and there's a danger of loss of interest during the lengthy learning curve. Secondly, once you're up in the air what do you see? Answer: nothing but sky unless you look down at the ground and probably contacting aerial views of landscape aren't as easy thing to do as it is on a train.

The way in which flight simulators have tackled these problems determines what sort of program you get and whether you're going to buy it and fly it, or buy it and lend it.

First, there are the tiddler challenge games. These offer typically either varied flying scenarios (eg. different aircraft) to land and take off from or combat scenarios in an effort to keep the 'fun' interested. Then, there are games that try to overcome the learning problem, either by hooking it (making the program more simple) or by trying to make a mini-*if* it making things more complex and daunting. Finally, and more recently, there are the programs that have tackled the real view problem and attempted to enhance the appearance of the ground beneath you, thereby giving you something to find, to look at, and to avoid-landing into—in addition to the style of the

voluntary entertainment program you're likely to buy.

FLIGHT SIMULATOR 2

Holdings

April 87 £19.95
IBM PC £19.95

• Games for review: Games for review

Well, there's no doubt about it. When it comes to serious flying, as opposed to combat, this program is severely the standard by which all other flight simulators are judged. The latest version offers a total 50 landscape together with 120 airports in five different areas 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 on a home video.

The choice of plane is important. Jet simulators tend to be rather easier to fly for the beginner and in addition they obviously move quite a bit faster. The Cessna, by contrast, is a



The ACE series has a great attention to detail. Here you can see an aerial view of the ground beneath you, thereby giving you something to find, to look at, and to avoid-landing into. You can even use the display to talk to other hot air balloons.

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...

somewhat twitchy creature but by this is more than compensated for by the excellent control which scans key-press rates and makes either a 'brake adjustment' or a normal control adjustment in the elevator position according to how fast you tap the keys. This is much closer to the feel of actually flying a real 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 get some real starts with it without worrying about your life insurance. Real option of all, however, is the World War I ace simulation. This is really just the Cessna with a gun on its front, but it's still very enjoyable as you confront the tenacity of a small, remote landscape. Gain points by shooting his followers and shooting down his six pilots, each of whom shows different tactics. Don't expect to come out victorious, however, and you're really measured control of your aircraft.

And that's really what this program is all about—mastering every aspect of flying from navigation (there are extensive radio and manual navigation appointments) in a non-environment that includes almost every conceivable variable from cloud height through turbulence to wing hazards. You can even fly under the Golden Gate Bridge, but unless you're the program will leave those who possess and master it with an unrelieved sense of achievement.

Display quality	8
Sound	6
Interactivity	10
Documentation	7
ACE Rating	8

FALCON

Spaceman Hobby/Microsoft

Apple Mac £29.95
IBM PC £29.95

• Games for review: F-16

This game falls squarely into the top-

and a lot of category of flight sim and some close to doing for combat simulation what Flight Simulator 2 does for light aircraft training. The 140-page manual has scant coverage of flying techniques but is positively bristling with authoritative details on weaponry or combat manoeuvres, and the various military ranks and decorations that you can earn your success or failure in battle.

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

of Fame, 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 behaviour. As for Laurels and leaves (for example, you get unlimited weapons without having to bother about weight), and the opposition just sits there waiting to be shot at, it's quite a shame, you'll be worrying about being captured, stalling, missing attacks, overloading, backing out due to high G forces, and a dozen other factors that lesser ranks don't have to contemplate.

Ambient CPC £3.95 vs £14.95 (UK) £4.95 (US)
IBM PC
 • Helicopter simulated • Lighter controls
 Apache

Helicopters have come a long way since the old days when Westland sold the boxes. Although the British company came up with the excellent Lynx (which did you last see a helicopter top-the-log?), the Americans have been hard at it and the Apache shows just what modern US technology can stuff under a rotor blade when it sets its mind to it.

Digital Integration seem to team with their Fighter Pilot simulator, which was the first flight sim to 3-D

vision to give a no-compromise operation of combat challenges and simulation authority. It's still an excellent buy but misses out somewhat in the ground-detail stakes. Sometimes, on the other hand, stores - and improves - on the features established by Corell's renowned Combat Lynx, which gave improved wireframe landscape features and a reasonable degree of light control realism.

First, the instrument display is excellent. Even, sensible read-out gives all essential information. The landscape is slightly closer but still ambivalent and effective for 3-D machines. It would be nice to see the



View: The excellent Digital view through a cockpit in the IBM PC, used as the main reference machine, gives you a head-first insight. It's not feeling very convincing.

spent at least a couple of days just learning to handle the aircraft. Keeping in the air is a double in this game, but proper alignment for landing and practice to guide 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 stalling and stalling 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 HUD) and a version of HUD, or 1400 LG Display. These give essential flight and target information by reflecting it off the windscreen, 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 HUDs for use when various weapons systems are activated, including guns, various missile types, and bombs. Mastering their use is essential for success, in even the simplest missions.

There's a duty roster and a Hall

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'll be confronted with a very wide range of scenarios, many of which have to be made instinctively and immediately, both in the air and on the ground. Should you feel that head-banging inside with a bang? Should you use the AIM-9L, or the AIM-54 missile on that elusive B-52? And, if the unthinkable happens, should you eject and risk capture (or even death) or should you try to nurse your game back home? Certainly the nearest thing to being the USAF currently available to a computer flight-sim enthusiast, but more of a 1400 LG than a flying challenge.

Display quality 5
Sound 7
Instrumentation 7
Documentation 5
WCE Rating 5

TOMAHAWK
 Digital Integration

IBM PC £3.95 vs £14.95 (UK) £4.95 (US)
Spectrum £3.95 vs £14.95 (UK)
MS-DOS £3.95 vs £14.95 (UK)

What the experts said...

ACE visited the British and Russian Aero Club to see how flight sims measured up in a professional environment. Byron-Care, Operations Manager at the Club and himself an experienced pilot, put Digital'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, no matter how good the simulation."

To prove his point, Byron showed us the Club's own simulator (see separate box) and pointed out how healthy 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

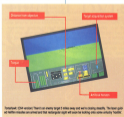
(not often properly implemented in simulators) and other weather conditions. Tomahawk and Flight Simulator 2 both include some weather factors but you're unlikely to run into a full-scale hurricane while sitting in your aircraft.



Byron has a no-nonsense view on how to judge flight simulators. Though it's quite likely that you'll get the best out of the best, you'll never get it all in a day.

However, the pros do have some good things to say about simulators. They built up a Hall of Achievement award, pointed out

Byron, "which could certainly save your life in a real plane. And in this regard they are also helpful for instrument flying practice." But what's really needed is a greater degree of visual feedback outside the cockpit. Visual flight rules are an essential part of flying, and the professionals, and it seems that until we get more realistic visual detail into a simulator they will remain a little bit of the thing you see without being the best.



Tomahawk: (240 version) 'Excellent quality flight 1400 LG and with plenty of detail. The 1400 LG will deliver more realism and that's why you'll get the most out of it. It's a real winner.

game-winning or an ST or an A-10, but for the time being this will do nicely. Landing gear, pylons, tanks, guns, fuel gauges, fuel, and mounts all come and go with simple but effective rigging as you zoom out up to 1000 lengths in a large map. There are four missions of increasing difficulty and complexity, culminating in an almost impossible game of heights and crosses with the enemy as you each seem to support your ground forces and occupy entire sides 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 cloud cover height,

flaring, and flight instruction—a wide range of activities, but for 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 altitude and elevator movement of the plane; 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, flap, etc.) correctly, all should be well. There's help there too, however, once



Check flight on the HUD (upper left) before taking to the skies before flying on the real equipment. It's not in a bad way. There's a good view option for the scenery, as well as corrected view tables, including heading and ground projections.

daylight flying, crosswinds and turbulence. There are four pilot ratings with entry advice and skill doubling with each increase in player status. Flight simulators used to be muscle-wringing job that the Apache 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 must for chopper champions and a strong contender for the rest of us, though simple copying cut-and-paste and using the on-screen quiz compare well with reading down the runway.

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

CHUCK YEAGER'S ADVANCED FLIGHT TRAINER

Electronic Arts

CD-ROM \$59.95 CD-ROM \$59.95
IBM PC \$29.95

■ Full production and experimental aircraft, emergency flight control in life a thrillingly experimental aircraft.

Storage here naturally stores it before, but this is the first flight sim to make a serious attempt at flight training. APT offers four modes of operation. Test flight, Formation flying, Airplane

clear instructions about control adjustments are given via brief 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, take-offs, landings, and other basic aerial maneuvers.

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 boating one of the seven "bizarre courses" scattered round the terrain, presenting streets to fly along, pylons to fly between, and so on.

Equally challenging are the intricate routines in the Formation Flying section—there are six pre-memorized routines and you can derive and SAVE your own. However all these take the imagination outside the Race window, which has you racing along a line flat above the ground, passing through gates in correct sequence. You won't get far in this until you've mastered your aircraft.

The graphics in APT aren't bad at all for an IBM 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 fantasy locked away in every amateur pilot's imagination...the plane he (or she) is hovering in suddenly goes into a steep dive, the pilot has a heart attack. Joe (or Joanne) Doe leaps from their seat, shouting their favorite Power Mantra manual and yells, "Don't panic! I'll save you!" A short while later you're landing safely at Kennedy Airport.

Wrong. Supposing Joe Doe really did leap up in front of you like that, claiming to be able to save the day, should you let him get on with it, or should you just duck him over the head and start saving your prayers?

Real, when Joe dies down in the pilot's seat, he's going to do something like this: accelerated in front of him, he'll probably recognize the attitude horizon, unspooled indicator, and tachometer. But probably have some idea of what he ought to do to get the plane out of a stall (if he has learned), but whether he can get it into practice is quite another matter.

To start with, he probably won't be that used to maintaining attitude control and dealing with yaw (where the plane dives from side to side). The altimeter may be wrong or, showing height above sea level, which means that if you're clearing a mountain Joe may be landing water (and he'll like it). If the engines have actually died for some reason he's highly 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 behaving quite happily. After

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 just landing 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. So 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!



Watch out! Joe's always got you identifying the attitude horizon...There will be no life here if you're not used to the flight simulator. I'd be happy to see you get that plane off the ground by changing out of it with you in it.

grams available. There's a lot in this program, making it good value for money and an excellent trainer for those keen to progress to more sophisticated simulators when hardware or creative permits.

Display quality	7
Sound	3
Instrumentation	8
Documentation	7
ACE Rating	7

CLUMPSHP

Microprose

Amiga ST	\$24.95	db
IBM PC	\$24.95	db
OS/2	\$14.95	cd \$19.95
Spectrum	\$9.95	cd \$13.95
GPC	\$14.95	cd \$19.95
Average	\$20.95	db

■ Highest Overall Score

Major Will Bill Steady has served quite a reputation for himself in the US games industry. His company Micro-



Storage (ClumpsHP version) gives freedom, forcing you to free-running options for your cockpit. Here we're taking enough time to let the air flow (pilot's seat) out of the cockpit to be in a cockpit.

prove do have a knack for tuning out impressive products with quality packaging and a good dose of healthy gung ho aggression. Needless to say as World War II winds you off an mission after mission with the promise of promotion to Colonel and the award of the Congressional Medal of Honour.

Gunship makes an interesting comparison with Tomcat as far as Digital integration. The former has all the hallmarks of an American up-market product, with an excellent manual and a lot of bootlegging throughout the game that takes long periods from flagging. One version has a Hall of Fame, and the structure of the program is clearly designed with every recognition test, training mission, radio transmissions from base, armament screens and so on. Some versions even have a cassette tape featuring a live tutorial from Major Bill 'Small' Yearner!

By contrast, Tomcatish seems a rather restrained affair, but once you've got down the bulky manual and started flying, Gunship shows definite disadvantages over its US rival. It's easier to fly, but Tomcat has superior, and the landscape (although more colourful) is less effective. Instrumentation is as complete but not so readily laid out and as a result rather more time to look at after a long time in the air. There's even a rather clumsy screen that regularly flickers across the screen as the Commodore version.

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

Display quality	5
Sound	6
Instrumentation	5
Documentation	6
ACE Rating	5

STRIKE FORCE HARSHNER

Microsoft

Start UP	120.00 sb
IBM PC	120.00 sb
System	15.00 ea (120.00 sb)
CGA 420	15.00 ea (120.00 sb)
GPC	15.00 ea (120.00 sb)
Commodore Amiga	120.00 sb
■ Home-Use-Only	

The Harshner has been a highly successful success, combining agility with 3D/3S, capability. It takes this by having engines that can be tilted through just under 100 degrees, and although Microsoft's program only shows 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, fast, lightly manoeuvrable aircraft with a very large map and straightforward control to fly. It's a little better than the Commodore version, but obviously they can't match the ST's solid graphics and extremely smooth operation.

There's only one mission - destroy the enemy HQ 125 miles from your start position. The map is divided into grid squares and you are provided with four ground sites where you can warm and refuel.

To capture the enemy base, you must strike into enemy territory and identify grid squares with minimal hostile activity. These sights 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 move your resources across the map which is far too large for you to traverse without fuel and armament backup en route.

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. Frozen up against you are Surface to Air Missiles, Anti-aircraft artillery ground fire from enemy troops, and enemy aircraft (which are a lot faster than you are). Chaff and flares are provided to help you foil radar guided and infra-red seeking missiles.

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 control-display options.

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

Simulated Scoring

Simulated Scoring has become a familiar sight these days, for example, car-hunt-juggles on the ground and then put them straight into a jumble pot. Naturally these tests are just a little beyond the purchasing power of even the average hobbyist, but even smaller simulators have a role to play in flight-simulators.

In the United States they use a dedicated simulator to practice instrument flying. The model you use here has all the instrumentation required to simulate flight-instrument (regardless this and a potter to determine your course. As you can use it for a number of instruments that would be familiar to any home-based enthusiast who's got a few flying hours or a good simulator.

The latest without simulator experience, the ones in look for in particular are your **Attitude Indicator** or **Attitude Indicator** which will give you a good idea of whether you banked left or right and/or tilted forward or backward - essential information if you want to know whether you're headed for the gull or the ground.

Your **Altimeter** is just as important - every aircraft has a certain **stalling speed** which will leave you heading backwards with stalling rapidly. Chuck Yeager's **Advanced Flight Simulator** was the only program to give advice on how to get out of stalls, a technique which involves reducing air-flow over the wings and therefore lift by increasing back pressure on the stick.

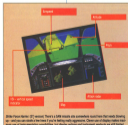
Your **IAS** or **Vertical Speed Indicator** will tell you how fast you are gaining or losing height. This is especially important when landing - used in conjunction with airspeed you can ensure that your landing is as smooth as possible. And of course you'll need to keep a close eye on your **Attitude**.

Finally, there's your compass which, of course, tells you which way you're going, but just to give you an idea of the complexity of real (as opposed to simulated) flying you should know that when instruments are straightforward as your compass and your altimeter could be inaccurate unless properly adjusted, take atmospheric pressure, elevation, and magnetic variation into account. Page 100 of *Simulated Scoring* some of these variables, but no other simulator we tested did.

To get yourself a real pilot's license nowadays would cost you about £3000, including a least 50 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 sorry second-hand offer.



A Cessna 170 - not a very fast plane, but a good one for learning instrument flying. It's a good idea to have a good simulator to practice instrument flying. The model you use here has all the instrumentation required to simulate flight-instrument (regardless this and a potter to determine your course. As you can use it for a number of instruments that would be familiar to any home-based enthusiast who's got a few flying hours or a good simulator.



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FIVE STATE-OF-THE-ART GAMES MUST BE WON!

ACE READER SURVEY

We don't rest on our laurels here at ACE. Every month we hold an editorial meeting and take a close, critical look at the magazine, asking ourselves how we can improve it. And that means how we can make it the magazine YOU want. That's why we're giving you the chance to get your suggestions on the table for next month's conference...and just to tempt you we're offering five lucky respondents the chance to win some exciting free software. Grab a pen and get down to it now!

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THE MAGAZINE

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What have *Airball*, *Boulderdash*, *Mastertronic's E1.99* 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 *CHL'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 adding some toys, moving landscape features around and so on isn't a particularly novel one. In the early days of home computing there was simply no need for the kind of thing. You could create a state-of-the-art game using your machine's built-in tools, or, for the fickle elite, a few bytes of machine code (FORTRAN or even TeX) statements.

The emergence of an organized software industry and the intense use in programming demands soon changed all this. By the turn years of 1982-4 when games like *Ultima* made *Eighteen* hot the elite, the cutting edge of games writing went to buying the average computer user programming expertise.

More so, however, about it however, people still wanted to get involved in professional-looking games, even if that meant other people's games. For the sake of the growing complexity of commercial games made from interacting things to explore and fiddle with - and so the games price was born. The vast majority of users simply

didn't know how to get it done (see this, but the door was not completely closed. Small odds for *Eighteen* were started to appear in the computer press at the height of the Spectrum Woods titanic fever, granting the power to completely redesign the game level rendering into a rather grey view of copyright law to boot).

With such an obvious demand from computer users for 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 associated 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 games a construction set boom could be just around the corner. Wouldn't you rather have a game redesigner tool, a tutorial, with a 5-star entry form or a little manual budget?

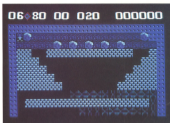
Real programmers don't use S.I.U.C.K.

It really did look like a while, three years ago

or so, like games creation utilities would soon get professional quality home-brew programs within everyone's reach. Developers in the adventure world seemed to point the way: *Glitch's The Quill* already offered budding Scott Adamses real game creation power without a byte of code to write, and the lightning speed of programming utilities from *Quake* (now without stated levels of version create game tools.



Quake's *Quake* (the budget version) with a level editor (shown like a transparent layer) that can be released from the *Quake* as going forward into other levels (page).



Atari's *The Great Escape* was the first program for the Atari with scrolling backgrounds.

SHOOT-EM-UP CONSTRUCTION KIT

Online Productions, C24 E14 99 or C17 99

Although it's not a "construction kit" in the strictest sense, this utility is a good deal more than that name would normally suggest. It assumes the format files of simple 2D shoot-em-ups and lets you redesign the text. You can draw your own sprites (limited 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 sprite forces the scroll by trying to move off screen. You can pin sprites to make the large end-of-level enemies so popular in cart-ups 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, splinterable weapons or wave functions, nor can you have alternating law player action. You can send the player right back to the start of the level—and you can do other, though perhaps that's something to be applauded.

These clearly aren't 1980 limitations given the cost of shoot-em-ups. 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 in 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 at such once all those *2600* buyers come on-stream.



2600: The same game *Ship and Tank* shows that the system's capable of—and makes sure players still it to use up.

Was it all gas in the sky? *2600* and *2600C* would have been hailed as works of towering genius back in those early days, but neither of them offers the kind of freedom and scope for originality you need to make your programs stand out these days. Even if everyone else didn't have access to the same utilities too, no *2600C* or *2600* game could compete with its originality.

The problem has a lot to do with the way the games industry has progressed over the intervening years. The 16-bit games of today drive their host machines harder than ever before, straining against memory and speed limitations. Most of the cat games can barely be developed on the machines they're intended for these days. Typically the programmer writes the game code on an *87* or Amiga, transferring it to the target machine (*Spectrum*, *C64* or whatever) only to test new sections or debug old ones. The reason for this approach is simple: modern games and modern programming tools won't both fit in your average machine simultaneously.

Furthermore, simply because it's generally technically adequate doesn't guarantee it's a place to do things anymore. When the programmer can't produce a featured low file size, he usually has to rely on having an original idea to sell his product. By their very nature these games' creators can't implement such original ideas. The whole point of them is that they turn out games like the ones the professional/semi-pros already writing.

To a certain extent any success games creators have can only serve to underline how important the market has already become. Users of *2600* can't hope to compete with the likes of Jon Strasser (editor of *Electronic Arts* and *Shoot Over Heels*)—his game system is technically far superior, and it shows in the end products—but if *2600C* could handle state weapons and alternating fire-player before you could do an awful lot of full-price *C64* games, quite competently with it.

Games are moving on, of course. Both-wave sprites and position scrolling are becoming increasingly common on the *C64*, the ancient *Flight Low* 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 machine's memory, and even if they do there's a quick-hit disk drive handy for storage. With the death of good software to the new machines it often seems like almost anything that runs will sell, not with budget prices slating at about the £10 mark who needs to hit the full-price bracket?

It may not be an explosion of Amiga or *87* games creators—and there probably won't be—but the reason won't be for its work. Quite simply, what's the point in selling your system to everyone else once, if you can keep it to yourself and sell them the products of the system later and time again?

It just sounds cynical or greedy, but it's what the programmers have a living to make the same way anyone else has. All programmers and up-keeping their old programs to some extent, whether it's just high



It's hard to appreciate in the finished product because you can't edit, but could you be in the act of creating the scene shown?

score table and software update routines or even chunks of game code. Many developers use very game-creation tools. Bethesda's *OT Advanced Art Studio* began life as a special-aid game background design utility, and old two-dimension games designed to it. It games writers don't actually go the whole hog and create their own super-3DCCX systems. It's probably because they can work fine with the set-up they've got and still keep the floor shiny they want.

Budget builders

Surprisingly enough, construction sets have

proved most popular in this country with the big budget houses. Not letting the bulk of the program build you - Mathematical want ones, will utility-produced adventures, and the other more free-ween companies with the possibilities of exotic game-creation - but actually giving game-writers more with the-games themselves.

Recent examples that spring immediately to mind are Bethesda's highly playable *Syren* and Bethesda's *SWP* release *War Cross Construction Set*. It's not hard to see why games like these appeal to budget houses in particular, with their narrow profit margins.

These companies simply can't afford to give away fancy editors or glossy manuals, but the trade-off of the trade is more or less free.

As for the programmers' time spent-creating the editor, that too can prove very cheap for large motivated 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 extra work involved in making the programmer could well pay off in the extra cost of use for the purpose.

There's more in the pipeline in the way of relative budget games. Mathematical's classic 3D scenario like *Molecule Man* was the first even walk-game to have a built-in editor, and is about to get a new look at life on the inside of the first *M&M X* game. Also on the horizon is *OT Thrust*, so release date has been finalized for this long-awaited revision, but the current working version contains a built-in planet editor. If you're here, here we come! ■



OT Thrust is just another in a long line of editors on the horizon. It's not hard to see why games like these appeal to budget houses in particular, with their narrow profit margins.

3D GAME MAKER (3DGM)

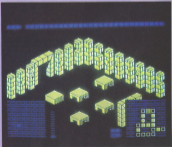
Oil, Spectrum 09/90

More than a construction set but only just, the 3DGM offering would have been an answer to many people's prayers a few years back. Essentially it's an isometric 3D room-by-room game of the Knight's Quest or *Barbarian* school - not in the same league, mind you - only redesignable.

The redesignable aspects is the object and room background graphics as well as room layout and map, but not in the way objects with in the game behave. You're stuck with the systems' rather limited repertoire of killing blocks, bouncing mazes and the like. Giving them a new look is easy, but it's late more than that to design where your finished product came from.

The object of a 3DGM game is always to reach a fixed finishing point also, when limits gameplay to put it mildly. Even compared to Knight's Quest the puzzles you can reasonably construct are on the weak side and the screen slowdown in a full room 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 *Chimes* or *Molecule Man*. As for *Planet Over Road*, forget it.



3DGM's redesignable objects is one reason for the game's success.

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From the left you enter the first room.



But where to next?



Which robot is lurking behind these walls?



Can you access the next tower?



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Running into more trouble?



Why is the robot guarding the robot?



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EPYX

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 creativity there is on the adventure scene for the professional end of the market when you realize that they are already approaching the number one slot in the UK.

The game boasts the same excellent graphics as its two predecessors, *Claid of Tharns* and *The Power*. It also features the usual excellent parsing which comes to expect from Magnetic Scrolls, but interestingly the computer has renamed the GO TO command which allowed you to return to a saved position. 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 **SHAWNEE**

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 this process frequently.

The discipline shows an improvement on earlier games as well. The Power was altogether too obscure to be really enjoyable as an adventure. *Claid of Tharns* was much better — a simple because built with some excellent locations. *Jinxter* has got 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 the chests and a brooker which you then assemble to resurrect the wizard at Tuzza, thereby deterring the pirates of the wizard class.

Wishes who are chasing the 'old' look

ACE
916
RATED

Complex parsing must come...

There are some other amusing 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* it's involved:

- 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 **TRY MATCH** before you've opened the matches — the program will reply **YOU CAN'T 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-worms. You are holding the car open, so you type **OPEN CAR**, to which the program replies: **SHOULDNT WE BE HOLDING OUR LITTLE TOOL IN OUR LITTLE HAND FIRST?** You are holding it, but you have to type **OPEN CAR WITH CAR OPENER**.

Even more amusing is the line involving walking through doors. Suppose there is a door to the east. You type **GO EAST** and the program replies **THE DOOR IS CLOSED**, or words to that effect. So you must type **OPEN DOOR** first.

What we need is a parser that:

— answers **LIGHT THE CANDLE** with **WITH A MATCH!**, and if you reply **YES!** responds with **YOU OPEN THE MATCHBOXES, TAKE A MATCH, STRIKE IT, AND LIGHT THE CANDLE.**

— If you want to go east (or west), and all there is in a closed door in the way, opens it for you, states you through it, and closes it again after you. Come on chaps — we know you can do it...

PILLGRIM

ADVENTURE

The design of the game — as mentioned in an earlier ACE article — is innovative in that details is not possible. You have a character who appears when needed to save your state and let you carry on with the game, but you won't score maximum points that way. The slow score gently tough puzzles is challenging the experts without putting off less experienced players and adds immensely to the enjoyment of the game. Getting around *Jinxter*, then, is no problem, and as before there are large numbers of encrypted clues in the accompanying documentation, if you get stuck.

Sadly there is no sample of voice input in the production version — if you've got 'Rescue 1.00' check for typing **VEB0006** you'll catch

the game by going south to the bar in the pub. You will also have difficulty getting the candle in the Hagia Sophia. However, neither of these two options are necessary to complete the game - if you think you need the candle to illuminate darkness, you should think



Play as well as look. In this scene, did you notice the graphics? In fact, you really couldn't after a while. (Magna's Scroll is available on most systems - see credits on following page.)

again - so neither of these bugs is too disastrous.

There's a magical element within the game that induces a new dimension of puzzle solving. Each of the five elements has magical properties, including the ability to change the weather (which plays a significant role in the game), freeze objects, and fog them so that they always return to you if dropped or otherwise removed from your inventory.

Magna's Scroll's text style improves with every game and it adds two excellent location descriptions and maps. Even forest objects sometimes carry a carefully crafted description, as in the lone garden:

(Magna's Scroll)

What you do is sit on the benches and drink a lot of beer and then you fall off the benches, into holes, into, into, into...

It adds richness. Magna's Scroll's reputation still further and confirms their position as one of the country's leading publishers.

house. If you fancy a pint of Old Moose-bottle in the pub, it isn't in the game, a spot of mountaineering, and some superb graphics into the bargain, then spend out without loss of regret.

SYSTEM: 91 ENCOUNTERS: 88
CHALLENGE: 88 LANDSCAPE: 90
VERDICT: 91 1/2

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INFOCOM are really branching out now, so what's the score?

Next about 3-2. It's not very fast, but we had serious games, and games in *PlayStation* mode. We were there, it's not because the game was really either too easy, but definitely a recommendation for opening up a

American businessman, given a document by a wounded secret agent while on a train journey across the border from Pakistan. The agent charges you with delivering the document to his contact at the next station, but the cost of the operation will be overtaken.

Chapter Two gives you the control of the

Chapter One is a bit of a fiddle and Chapter Three about average. It's very straight away that I didn't think the game one of Infocom's stronger pieces. The next time element doesn't add much to the game - all it needs is that when your time runs out and you get caught by dogs or guards or what-

BORDER ZONE

Three-part thrills from INFOCOM/ACTIVISION

new genre. Then came *Mad and Art*. One good thing to noting the puzzle solver, although traditional adventures would doubtless still lead. *Three Dimensions* release in six more months - must be a record! was *Beyond Zork*, which definitely gets the ball through the net in all departments - fun, different, and challenging.

And here the company are taking *Border Zone*, the new origin of this one does not be a new single on every Infocom game these days is "old time". In other words, from the moment you start play there's a little clock in the top right hand corner ticking away. This one *Border Zone* isn't, but as soon as you start up again it's back into the race with old *Border Zone*, even if you don't do a single day.

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 (going on a top 500 executive). Each character has its own related game in one of three game chapters and you can choose at the beginning of the game which chapter you want to play.

Chapter One gives you control of the

same American agent from Chapter One who escapes from the train after handing over the document and must then escape across the border on foot. In Chapter Three you're the double-agent at the scene of the assassination which you must, quite naturally, try to stop without compromising your personal security or true identity.

You can tackle the chapters in any order. Chapter Two is undoubtedly the hardest on the Right option, anyway, whereas



Who's Number One?

There's a lot of competition between adventure houses to see who can lay claim to the 'Number One Spot'. That one is still, in my opinion, occupied by Level 5, but surely the Level 5 reputation will largely be an older game. Their insistence on sticking with text, graphics, and other fantasy scenarios no longer holds them in good stead as games like *Castle of Fear*, *Beyond Zork*, and *His Majesty* open up new realms of interactive fiction for larger audiences. Let's hope Level 5's planned game based on the *Arkham* legends brings their catalogue up to date.

Magna's Scroll already think they're in the top 100 list. They hobnob with Infocom and have recently included one of Infocom's writers (Dave Lebling) as a character in *Janet*. Their games are certainly improving, but neither we need to see a couple more titles and a pretty steady improvement in the game design before we can give them top honours.

Infocom don't count, because they're American, but I still wonder how they'd fare out of every four Infocom titles advantages better than anything ever come up with in Britain. The Infocom game isn't much better than either Level 5 or Magna's Scroll. Their games don't have large vocabularies. They certainly don't have graphics. What they do have, though, a superb game design and excellent atmosphere. 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 ICOM Simulations in the US or Microscope, and licensed in the UK by Mirrorsoft. The games are great examples of how the advanced computing power of a 16-bit machine on the one hand (and you can be used to absolute new playing styles).

The game is entirely mouse-controlled. The screen has four main windows displaying inventory contents, current location, available verbs, and verb messages. This is itself a lot entirely understandable, but the way the game is played certainly is. For example, if you are wandering you have in the current location - a jewel, perhaps - you start type **GET JEWEL**, instead you 'pick it up' with the mouse pointer and drop it into

your inventory.

Moving around is conducted 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 **EXAMINE** objects, since placing the pointer on them, and double-clicking on the mouse will get you a description in the text window.

For anyone who hasn't played this sort of game before, the visual nature is stunning. Not only can you get and drop objects etc by moving them around on the display, but you can even hit them up and see if there's something underneath.

In addition to the visual dimension, there is also extensive use of sound. Doors knock open, spikes laugh and gibber at you, dragons land into flames with a deafening roar - all sampled sounds that add enormously to the enjoyment of playing.

That's the good news, but it'd be surprising you if I left you with the impression that everything's perfect. First, there are very few control options. You can **EXAMINE**, **GET**, **SPEAK**, **OPEN**, **CLOSE**, **PUT**, **COMBINE** and **OPERATE** - and that's all. To some extent 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. That you can use **OPERATE** to light a torch, lift a wall, pull a lever and so on.

In practice, this means you use **OPERATE**

over than you **EXAMINE** and by rights.

One you've worked out what to do, doing it is never a real problem. To help you, however, you can select **FAST** or **SLOW** click speed depending on your self-confidence. The puzzles are as ingenious as ever, but the last two chapters left a certain disappointment for me. In the first, the atmosphere was great, but the **CHISEL** too easy. In the second, although there were quite a few interesting things to keep you busy to deal with, the solutions were rather dull.

The third chapter is a bit of a bore. First, the hunting only in which the mechanism is to take place is a more lively, if rather limited, affair, than the two previous scenarios. Secondly, the time factor seems better implemented in this section as the seconds tick away before the clock runs out, rather than the chance of the scene in the film *Day of the Jackal*.

Border Zone, like all ICOM games, is beautifully executed as far as the plotting and programming is concerned, but it didn't grip me as much as their other releases. I would have preferred a single scenario with more puzzles and more puzzles. As it is, the fragmentation of the plot (although originally seen to follow from the atmosphere, a talking point adequately compensated for by the good execution of the first

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and everything in sight, which doesn't help everything see yet. Naturally the stunning visual display and sense of motion compensate for this, but that's only they have to.

Your quest in Shadowgate isn't twofold - you must - stop the black team ascending the inferno of the underground world by grabbing a few magical objects. There's a limited magical interaction in the game using the **SPEAK** command whenever it's allowed, water and **SAVE** is often as possible. But with a game system like this to build on, expect more impressive stuff in future.



Shadowgate in the Mac. There's a rich-looking interface, and a huge variety of objects to use.

SYSTEM 80 ENCOUNTERS 62
 CHALLENGE 80 LANDSCAPE 70
VERDICT 89B

DEJA VU

MINDSCAPE squeezes 16-bit system into 8-bit.

DEJA VU was the first ICOM game to appear on the Mac and is now available on the Amiga and ST too which machines it is tightly optimised. It's also the first to be ported down into an 8-bit machine. How does it look?

The system is the same as that used in Shadowgate (reviewed in this page) and has translated surprisingly well onto the C64. Becoming accustomed to it is easier with a couple of updates you find yourself a prime suspect for murder. Can you escape and turn the tables on those who have framed you?

The screen layout is very similar to the Macintosh version, though the graphics reviewer is eager to accommodate the Commodore's lower resolution. The program makes frequent disk access as you click your way through the rooms and out into the streets which flow gaily by down a central, but doesn't do so surprisingly quick and the pace is a lot slower than, say, an ICOM game.



Deja Vu on the Amiga. It's a shame you can't play more scenarios - Revenge is the last at present.

Mouse-control isn't quite as intuitive as it is on the Macintosh. At times, you're using a optical mouse. Furthermore, the manipulation of objects is not as precisely

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was the first ROM game to appear on the Mac and is also available on the Amiga and ST for which versions it is highly recommended. It's also the best to be played down onto an 800 monitor. How else is that?

The system is the same as that used in *BlueGrapple* reviewed on the pages with two (optional) upgrades well into the CD-ROM. Remembering consciousness in a house with a copper spigun you find yourself in prison support for murder. Can you escape and turn the tables on those who have looted you?

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The screen layout is very similar to the *Macintosh* version, though the graphics window is larger in comparison the *Commodore*

in lower resolution. The program makes frequent disk accesses as you click your way through the menu and out onto the streets which show progressively down resolution, but accesses are surprisingly quick and the pace is so slow that, try as I believe you!

Mouse control isn't quite as pleasing as it is on the Mac because, of course, you're using a joystick instead. Furthermore the manipulation of objects is not as graphically responsive because of the lower resolution and some smaller objects are barely noticeable until they have been auto-clicked

Pat's Patch

This month Pat looks at Gilsoft's Professional Adventure Writer.

PAW has already appeared for the Spectrum range of computers, and it has recently been translated to the Amstrad machines. There are slight differences in representation on the two formats, with the Amstrad version using a CD-ROM. The Amstrad PAW also offers an incredible 100% of space for your adventures - and that's before the 40% loss compression and opening the possibility of disk access for non-PAW. PAW has the best patch for ever seen, with a few more significant words of the player's command capable of being individually recognised. The first few letters of each word are scanned and these letters must all be typed unless the programmer has deliberately marked other options.

All the well-used "no" commands are built in, the get things removed, and in addition a "do" command is provided which allows you to create your own automatic routines to recognise and all right commands such as "There's everything except the bucket down the well". Objects can be normal, abstract, or containers and these flagged as containers cannot be carried round and even get inside other containers.

Up to 256 locations can be defined and the descriptions for these can be as long as you like while around 400 messages are available in addition to the 60 provided. Again the messages can be of any length, only restricted by the overall memory limitations of your system. Again the Gilsoft editor it should be possible to access random access text files on disk for even greater capacity. In fact it should be possible to use most of the RAM space for containers alone - and!

If you have any experience of the Quill you'll find PAW simple as it uses the same basic layout and coding techniques. PAW is much more flexible than Quill and with more commands but you needn't use all the available ones.

One major difference between PAW and Quill is the way you load information in the database. The CD-ROM version of PAW consists of two parts, a compiler, and an interpreter. Data is put together using a word processor in straight ASCII files, then passed to the compiler which checks syntax and creates a database. Then the interpreter is used to load the database and create a runnable game.

Unfortunately while text editing is easy using your favourite word processor (or the simple text editor supplied on the disk), compilation takes ages when files start to get large. It's currently working on a game which requires 200 sub-objects and this alone, several minutes to compile. On the other hand, the speed of editing more than makes up for this. It would suggest that you handle the editing first before writing some of the text. That way the files can be saved fairly often during the editing stage.

As for coding, conditions are split into several tabs. Responses which return the player's input, and other generic tables, two of which handle actions after "Response" but before the "What next?" prompt, and several more which are used as subroutines. These details can be listed from within any other table and responding to an event. The most you can see is in creating interactive characters and conversations but

the way the first one you get your thinking cap on. Graphics aren't supported at all, although a window is made for you to patch in your own routines using "Paint" - but with all that memory for text, who needs pictures? It isn't a practical proposition for non-programmers to create detailed, in-depth adventures in this logic! Buy it!

to shop.

Almost all the main characters in the game can be addressed as you question them about each other. Interactions that are low cost and their business often. You will spend time talking to others, listening to irrelevant conversations and reading around in personal documents, or well to solving the usual locked door and inaccessible location puzzles.

The range of the game lies in the complete movements and actions of the different characters, all of whom you must keep track of and check out during your investigation. A small map, lots of conversations, much local work, and an excellent atmosphere make this one of the all-time adventure classics, and deserving of a wider following. The Pig has been revised to all the usual features, including Amstrad CDC, but check with Amstrad for compatibility and pricing.

The Pilgrim's Players' Guide to Hitchhikers

To Third and Final Parts

Are you fed up of the "Screening Door" or if you've done the Maze, then you'll have enough common sense to **Get the Book**. By some door, or being left **no tea and tea** is going to have it, but don't go and will you've got a little time as possible, having a drink at the stage right now.

Marvel can repair the patch and of course you did remember the **feet** is pointed out in the last issue, didn't you?

As well, you're nearly there. Can you hear it? Can you hear the fact that you have almost finished a program that cost you... Yes, well, tea and the better, eh? Take your body belongings, wear your gear, and descend through the hall into a drive-in dump... or... well!

Next month: The first instalment of the **Pilgrim's Players' Guide to...The Maze**.

A Pilgrim Retrospective...

Suspect by Infocom

Never listed at it, said its Action retrospective when the Pig was to check the price of one of his favourite Infocom games. They set about with up the book that the little gem has had such a release. This is mostly because the game came out at the same time as *Hitchhikers* and was rapidly adopted by its more famous companion.

There's a good pity, because it really is an excellent example of interactive character programming. Built in a large Amstrad country house, offering a daily drive ball, you discover the corpse of your wealthy father, strangled by the local man, your situation. The police are on the way, the clock face sensationally towards midnight and if you want find out who did it then, you've

Next month...

See your *Shades* diary returns with more snippets from the outrageous *Murder* multi-act game, and the *White Wizard* makes another great appearance with a survey of role-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 getting 'commodity'? That it begins...

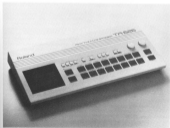
Once upon a time, bands of sage, hoary creatures scouted the earth. Their cruizers, as they were known, were subject to fits of alcohol-fueled violence and aggression, and required frequent offerings of hip and booty beverages. The good crea-

tures at the time were greatly afraid of the dinosaurs, and believed them only because they emitted noises which were always effective in the people, and which no other creature could make.

Then someone had a revolutionary idea: "What if we made a machine that could generate all the noises made by the dinosaurs, but without taking up so much space, with out requiring constant proprietary feedings, and without the same tendency to run off with our wives and daughters when we're not looking?" And so was born the concept of the drum machine, or so it is more broadly called these days, the Digital Synthesizer Programmer.

The first automatic rhythm devices, were mono-driven tape-loop organs, which had real instruments controlled by parallel-type rolls. These were followed by the great Wurlitzer column organs of the fifties, and then, at the sales, those organs featuring preset digital accompaniments. Certainly manufacturers realized there was a market for the digital units by themselves. *Rogé* and *Roland* were among the first to produce self-contained preset machines featuring, for example, *Pattrol*, *Sambassadors* and *Regis* styles.

The first digital machines were developed by *Roger Linn*, sometimes referred to as the 'Dinosaur' of the drum machine scene. His machines offered remarkably sophisticated facilities for the time including features such as touch sensitivity, which are still not necessarily found in today's machines. Then *Sequential Circuits* introduced the ability to change each voice pitch and level on each beat with their *Drumsticks* machines, and D-



Roland TR-808 — 242

Set sound source to 0 to use sound with plus 8 programmable patterns and speed to 8 programmed ones. 80 representative is actual, including extra, programmable trigger sequencer and sequencer.

ten Systems were one of the leaders in developing sampling drum machines with true 24-bit 32-bit Computer. Most of today's advances are in terms of increasing affordability, and the facilities offered by recent innovations like the T8000 would have been rivaled by major recording studios in less than 10 years ago.

Who needs 'em?

If you are a drummer, then clearly you can manage 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 neighbors yelling in the police, above all, perhaps, a huge extension in the creative possibilities of your medium. And you no longer need to be concerned about a

machine restricting you to its tempo; a device like the Roland Human Clock enables you to create 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 just want some rhythms to back up your keyboard playing, in which case a preset-only drum machine or a home organ with rhythm patterns could be enough. These range from acceptable to real, and generally you get what you pay for.

Alternatively, you may want to use rhythm creatively in home recording or performance, and here things get more complex. Dedicated rhythm programmers may well look at some examples (like, say, other brands) before deciding. They have those automated designs and weaknesses, but all of them suffer from the restriction of a single line display for programming, and all of

them limit to some extent the sounds you can play. If you want to see all the drum voices you are programming at the same time, and have more 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 could depend with the drum machine and opt for a multi-sampling keyboard or sounds to play with. The point here mainly is the ease of complex, either a or all-related ideas you choose.

Facilities

Most of the criticisms levelled at drum machines in the past have been implied in the word 'machine' — inflexibility, inflexible and monotonous accuracy, lack of feel, etc. (Perhaps that is why manufacturers now seem to avoid the word in their product names). However, many of these criticisms 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 had MIDI quite expensive, but I'd still like to use my computer as a Commodore 64 to make music. What are my options?

James Bennett, Sunny

Howard Ingram replies:

The problem with any new technology is that it is always going to be expensive. Advertisements will try to woo you into believing that you need MIDI but never forget that advertisements are trying to "seduce" you into buying MIDI. In advertising parlance, the word "seduction" can always be substituted by "brainwashing".

To answer your question, I would agree that MIDI is expensive, but if you wait five 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, to suggest that you consider buying some non-MIDI musical software because, although these may have limitations, they are often excellent introductions to computerized 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 getting a Commodore 64 because it is possibly the best computer to get an affordable music-making on a budget. This is due almost entirely to SID (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 64's user manual and a series of POKE instructions. More importantly, the introduction

We throw your questions at the panel — this month Harold Ingram tells you how NOT to get into MIDI!



That's the man who's answering your question, James. He will tell us what you need to do to get into MIDI.

of SID meant that there were soon a plethora of software packages for your time and money.

Probably the best non-MIDI software available for the 64 is The Music Studio by Activision. This program requires you to sit at the keyboard to play notes on a musical scale, and then by pressing the "hit" button on the joystick you can listen 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 as usual the "Guitar" preset sounds nothing like a guitar, but you can even change the presets, adding and subtracting filtration, 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 trill from a minor. Its 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 readily available off the shelves. Two software packages (pre-installed, these being Ullrich Music and Ultron Rhythms — both from Proton), priced at £1.99 and £2.99. At these prices it's rather to expect anything special, but I was surprised at the quality of the sound. The Ullrich Music program supposedly turns your computer into a synthesizer (what has been heard that before?) but the main drawback is it using the C64's keyboard. The sounds are good, but it's difficult to play. Ultron Rhythms is equally interesting, 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 far wrong. To help you on your way I've included the editor's name (Dustin Ed.), and he has agreed that ACE will send you both Ullrich Music and Ultron Rhythms — to get you started. Good luck and have fun! ■

OK, so Howard twisted my arm, in future, however, we'll 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!

advances it is now possible to achieve the desirable variety of performance from a drum machine, and the sounds themselves have come a long way from the tinny and muffled-to-the-point-of-the-early-models.

The facilities offered by modern drum machines vary immensely, but most will allow you to choose between selecting preset patterns or programming your own. Most have a number of buttons which can be tagged to give the drum sounds it wishes, although in most budget machines these will not respond to velocity or dynamics, and most can be played live/re-programmed via a MIDI controller, key, or keyboard of a sequencer. On which case most machines will respond to velocity information if your controlling instrument connects to.

You could, if you wish enough, guarantee yourself a MIDI controller (something like the DSI-1 or SP 1200, for example - but we will assume that this is not an option). At the other end of the scale, it is now possible to buy good, fairly recent but now discontinued machines such as the Roland TR-21. Its costed £190 is music shops, or even less from the classified sections of music magazines. Such machines do still work effectively by many people on tight budgets, and it may be worth seeking what facilities they can offer.

All the machines mentioned as the best give good value for money in one way or another, and other considerations in facilities will be found on other machines.

The trouble with producing rhythm sounds these days is by the sequencer/trigger option, but as the cheapest acceptable will do much on the most sophisticated drum machines, you have to be taking it very seriously to follow that path. If you really want it computerized, that is without sequencer timing a drum machine is probably the most cost-effective way to produce good quality rhythm sounds, and gives you good flexibility and control. Whichever route you choose, you'll have to find a rhythm programmer or sequencing environment that can add depth and drive to your music.

Yamaha RX21

The RX21 is a fairly basic machine, with a standard set of snare, bass, five tom, open and closed hi-hats, cymbals and hardware. It has 44 preset patterns, ranging from variations on 18 basic patterns for jazz or rock, to reggae, disco, and Latin American rhythms, and offering a selection of 18 and 160 patterns. As it offers the MIDI with presets, these do tend to have a rather inflexible, mechanical feel, and they are best regarded as a base on which to build, using the 18 user-programmable pattern memories.

Programming, either in real or step-time, is somewhat easier than on many machines as the 18 instrument-voice buttons are not required to perform any other function, such as pattern selection. In fact, the usual trade-off between button count and ease of use has been fairly well managed here, with multiple key-presses used to a minimum. The sounds produced by the RX21 are dry and fairly neutral treatment via an external mixer unit to be acceptable by the latest stan-

dards. Bear in mind, though, that you can only hear of the sounds in vivo, as the machine only has stereo outputs. However, some flexibility is provided by the ability to programme different volume and accent levels for each instrument, and if your needs are not too elaborate, and your budget is tight, then the RX21 or its Latin equivalent, the RX21L, may be worth thinking about.

Roland TR606

Moving up a notch in the price scale enables us to consider Roland's latest machine in a long line of successes, the TR606 for £280. A lot of extra facilities become available. The first thing to notice is that we now have truly on-board sounds to play with, enough to give us a choice of different basic kits and a wide selection of Latin sounds. Up to eight of the voices can be sounded simultaneously, with some fairly novel limitations on polyphony, and the sounds themselves are excellent - clear, believable, and with

those features combine to produce great flexibility, limited only by your programming patience.

Patience is a necessary virtue, however, since the key-press sequences required to programme the TR606 are quite difficult to memorize, although the learning curve is shortened considerably by the operation manual supplied with the machine. The beautifully produced but poorly-illustrated manual is decidedly hard going.

What else do you get for the extra money? Tape sync capability, programmable shuffle and flut effects which actually work, MIDI transport as well as receive (great for programming beat-lines for your synth), and quite a lot more that space does not permit etc. There is even a section in the manual headed 'Writing Patterns' - how there's a novelty!

Access HR-16

HR16 brings you what may be the best specification possible for under that amount. It may be far already, since we have been waiting for several months for Access' latest drum machine, the HR16, to reach the shops. It's quite true before you have given up and bought something else, expect it to have all high quality percussion sounds, 16 of which can be assigned to the velocity-sensitive pads and played simultaneously (involving the same sound 10 times if you like). Four fully-assignable outputs, 100 pattern memories, which can also be used to store instrument, tuning, and panning data for recall from a sequencer, tape sync, and 100 user memories are among the other goodies this machine will offer - when it eventually makes its appearance.

Cheerich MD6

At a similar price level to the Yamaha, £119.95, to be precise, Cheerich's MD6 should be among in the shops before 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 low-cost libraries of alternative sounds into its eight voices, and an integral pad box 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 of sequenced rhythms - stick sounding off a surface makes a very different response in the player from fingers tapping time buttons, and even more so from the instantaneous effect of programming patterns in step-time. The Cheerich SP1 is likely to be the most affordable EDK yet produced, at £124.95, excluding symbols - (and only the total expansion sampling systems can offer sequencing symbols). Other, more established, makes include Roland and Simmons, and their products usually work out of the kit itself and a 'brain' which actually produces the sounds, allowing you to synthesize the sound of each instrument.



Drum 21... drumming!

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 tuned up or down by seven semitones, the tuning can be programmed to change with patterns, as can the accent level and overall level for each instrument,



Drum 60

to be dynamically controlled from Cheerich's DR6 electronic drum kit illustrated elsewhere in the article.

Add to this its 16-step capacity (the MD21 has four) and separate sound outputs and things look very promising for the MD6. The overall feature, of course, will be how good it 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. ■

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FREDDY HARDEST

Get tough with the Amstrad version

- Access code = 887600
- More soundsets can be loaded, punched or deleted.
- Robots can be loaded or shot.
- Alerts can be loaded or punched.
- The title area has blue squares and are activated by standing on them and pressing up or down.
- Hanging bars are score gaps that are more than two blocks wide. Press up when on these to rock the more soundsets and robots.
- You can't fall off ledges without dying, so don't die!
- The red squares are nuclear fuel for the ships so pick them up.
- Drop the fuel on the squares marked with an 'X', then go to the computer terminal to see which ship is being fuelled.

• It is not essential to get the captain code, but you do have to programme the ship to bypass.

- The holes in the passage ways are useful for moving around the base.
- Always check each terminal.
- The four captain codes are: PENEK, AIGOUK, AMPEK, BORO.

• If you get the captain code wrong when loading a ship you can try again using a different code.

MARTIN COLES, Derbyshire.



TRICKS 'N' TACTICS

BOBSLEIGH

Bob 'Sleigh-em' Wade plays it nice cool on the slopes...

First, equip yourself with an amateur technician. 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 numbers you should follow these rules: if both air and ice temperatures are below -1 that one type < if the air is above zero then use type 1. If between these levels you should use type 2 or 3. It 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 strength push start or clipping the ice wall on one of the early corners will cost a lot of time.

The wobble start is easy enough, but don't get control away and forget to jump in the last. Because one wobble 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 should avoid the wall because at the stage they can literally see seconds 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 off 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 links and long curves. The links can freeze you off at a crucial moment either braking or leaving a turn, while its easy to lose concentration on the long turns and let the bob drift out for up or down.

Winning through

You'll need to win consistently to get enough sponsors cash to buy the expensive bobs. There appears to be little difference between the two and four man variations, so go for two-man at first because its cheaper. Once you have an Olympic bob you just need a top three team slot to get into the Olympics at Calgary.



Achieve hi-score mastery with this month's selection of expert hints and tips. *Nebulus*, *Bobsleigh*, *Driller* and other recent releases yield up their secrets...

THUNDERCATS

Move for over with the infinite lives poke on the C64

Type in and flash the listing:

200 0000

285-2-245 26-4-288 268 248

27-4-76 333 289 284 378

221 8876 242 34 271 76 33 8

221 888 245826 88 20200: 8888 &

2488 & 888

How to use:

NEW (return)

LOW (return)

When READY appears, enter:

POKE 1011,245 (return)

POKE 1012,207 (return)

RUN (return)

The game will re-load.

THE HACKER, London.

DRILLER

General tips

1. Activating teleporters restores your travel time around the maze and to activate them you should initially head west to **Topic**. Once over the lift, activate the lift by long at the apartment switch. Enter the suspended complex and find the hidden tunnel. Follow the tunnel to complex **BN**. Destroy the four **Blocks** to maintain the teleporter.

2. The **jet** is in one of the hangars in the Aquamarine section and the best way to get to the water is to go west to **Topic**, over the wall and west again to **Beryl**. Sever the powerlines to disable the vicious-downstairs pointing laser beacon and then set the synchro of all **agates** (including the building). Now the doorway to Aquamarine will be created.

If you've lost your way on the vast expanse of **Mitral**, 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 get all the large switches in the **Securities**, **Alabaster**, **Opal** and **Quartz** sectors to **Down** so the four lights are illuminated. This destroys

the southern wall in **Opal** allowing access to the **road**.

4. To **pause the game** - call up the information screen as the slope the clock.



Drilling

Gameplay

► **Breakdown** (Start of Drilling) - To avoid being put in the bottom holes it goes into a puzzle of a vertical stack. The water level is made.

► **Aquamarine** - Can be accessed by going east down the wall, going over to and passing in the gates will do.

► **Stealth** (Start of Drilling) - To avoid the water level it goes in the water level. If you're going to activate the water level you'll get more points. Also, making the plot it's not a lot of time.

► **Opal** - There is a tunnel in the top right.

► **Topic** - The water level is in the top right of the wall.

► **Topic** (Start of Drilling) - To avoid the water level it goes in the water level. If you're going to activate the water level you'll get more points. Also, making the plot it's not a lot of time.

► **Alabaster** (Start of Drilling) - To avoid the water level it goes in the water level. If you're going to activate the water level you'll get more points. Also, making the plot it's not a lot of time.

► **Alabaster** (Start of Drilling) - To avoid the water level it goes in the water level. If you're going to activate the water level you'll get more points. Also, making the plot it's not a lot of time.

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► **Alabaster** (Start of Drilling) - To avoid the water level it goes in the water level. If you're going to activate the water level you'll get more points. Also, making the plot it's not a lot of time.

TERRORPODS

The map and the tips – brought to you by **CHARLEY ALLAN** of Ipswich. Nice one, Charley.

1. Always use your driver. On this board use up fuel, you can then trade your remaining fuel. Park the DVY at 1-8.

2. Going round to the right, radio to every production, trading them indefinitely (2400 units you reach your start again 01-04 0000).

3. While moving around to collect all fuel at pick-up points to trade for as much detonite as possible:

▲ REFINERY CONVEYOR

○ MINERAL DUMP

● FUEL DUMP

▲ MANUFACTURING CONVEYOR

■ FUEL WARE

□ GENERAL WARE

■ EXPLOSION WARE

□ EXPLOSION DUMP

■ RADI-BLASTY

■ FEEL PICK - UP POINT

— STREETS

— MANUFACTURING SHUTTLE

— EXPLOSION SHUTTLE

— RADI-REPAIR SHUTTLE



Manufacturing centres

Co-ordinate and	Alloys needed for unit	Comps per unit
	Build	Trade
14, 000	100	100
01, 000	300	300
01, 000	400	400
01, 000	500	500
4, 000	100	100
01, 000	500	500

spines, dodge missiles and waste Terrorpods.

5. When you finally build the Terrorpod (on level 1 that takes about an hour) you will have to invade 15 Terrorpods in 5 minutes. Luckily you will be given 10 minutes. They probably won't be in the same areas – see your map to find them.

NEBULUS

Tower Tumbling with Bob Blade in Hewlett's instant classic

To start with you have to learn some general vice. Patience is vital and panic is fatal.

The spinning cog(s) that enters at intervals on level 1 is the most measurement of time. Get used to the intervals at which it arrives and wait it down, like a train where you can easily load it. It may seem like you're waiting time but getting involved after being ahead will cost you time.

Reappearing blocks are a nuisance. You can guess where some are located but the only way to be sure is to find out the hard way and then make sure 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'll die and there's usually enough time to recover on the Spectrum version, but less time on the MSX.

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 carry you up to 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 block 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 2 - Realm of Robots

Go left at the start. For the first time you have to jump over robots as they spin through their platform. The first one is at the bottom of the tower, and the second one hurls up. You have to leap over the second and on to a waiting lift.

At the top of the lift there's another robot to

watch out for. Be careful of the living here because the blocks underneath it are conveyor 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 lift. 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 stops you on a lift. Pause before using the because otherwise the being is such that you'll needless plunge into a hole.

Tower 3 - Trap of Tricks

If very handy look at the elev. Go left, shoot the ball, through the door, up the lift, walk right and wait. The spinner will appear and knock you down to 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 copies of floppy software. How? Simply by sending in tips, jokes, and maps for the games we all want to beat.

This month's biggest prize goes to Charles Alan for his Terminator map and his Double Jet Set Golf game for the Amiga, including the monthly classic feature Flight, Trail Drive, Eagle's Nest and Russian Games.

But here are the very best. Mario Coast: Freddy Harlowe has got his MotoBike 2 for the Amiga and the TurboRaid Plus with the Hopper a copy of Rampage for the C64.

But look — you only win if you send in tips. So write to:

TRICKS 'N' TACTICS, BOX
4, GARDEN STREET,
BATH, BA1 1 EJ

Tower 4 - Slippery Slide

Start right from the start and jump the two robots as fast as possible before the spinner starts. Use the lift and shoot the fasting block to your right. Then proceed to the left, shooting the blocks in your path.

There's a sticky section halfway up where two fasting blocks have to be removed. The first is easy but to get the second you proceed to the left, after 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 floor. Make sure you jump early or you will land your feet on the block above and fall back down onto the lift.

Last nasty 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 suicide if you get off. Walk left and shoot the ball. Edge forward until you can shoot the

fasting block round the tower, then walk forward over the disappearing block and take the lift.

After the two spins, jump to the left, fall onto the first lift, shoot the two fasting blocks. Take the lift up — you will get knocked off but it is essential to get the height to remove the ceiling eye. Switch back and take the second lift.

Jump left, over the first eye, shoot block to the left, jump back over eye, walk right and down onto the lift. Take the lift up and jump left.

Try to cope with the next puzzle. Higher up you'll want the last door in the first spiral of stairs and the first door in the second spiral. Watch out for two eyes 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 so on for the double spin spiral at the top — better to go fast as possible with the robots not appearing.

Tower 7 - Nasty One

xxxxxxxxxxxxx Help me please!

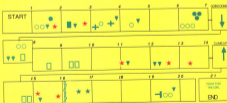
IN THE ARCADES

No contest this month for the arcade tip prize; PATRICK CADOGNA'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 right.
2. Use the horizontal bar, all the horizontal bars and sliding the horizontal bar if you get hit. Use all the weapons and take the enemy.
3. Use horizontal bar to get past just as you're in the house of near destroying the robot.
4. Remember appearing enemies. Use screen to know all of them, you'll remember that.
5. Use horizontal bar near side flying thing that.
6. Keep going until you can't hit them the last.

1. Don't waste the laser to enemies to come and then in then with the bar. Always to take because it is usually fast, especially that — in your — (SLOWLY)
2. Kill the enemy near using the a ball near the walling to yourself. Watch out for flying drop balls.
3. Jump down to the edge when all the enemies are.
4. Kill enemy near.
5. Jump the hole or you'll a puzzle!
6. Kill gate and another near around.
7. Watch out for the jumping ball machines.
8. Don't waste the flying gun.

9. Don't let ball down the edge. Pick up enemies in time and all levels near.
10. Put up items to them in goals, and then get generally near them to finish.
11. Watch out for the guns coming out of the wall. Kill them.
12. Watch out for the guns coming out of the wall. Use your gun only.
13. Watch out for the slow destroying a wall you.
14. Turn on the get, with the bar — especially the enemy the machine gun.
15. Use you and your partner have to fight in the get. Because all.



- NORMAL MAN
- NORMAL WEEP
- ▽ MAN - BARBERGILL GUY
- ⊥ MAN - MACHINE GUN
- BASKETE MAN
- ⊕ MAN - DYNAMITE
- MAN - BOMB
- ★ BIG GUY BOSS
- ☆ GREEN GUY

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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 buyers' 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. Displays, sound, software availability, prices, bargains...it's all here.

Before buying

Even if a new computer is only a dream at the moment, this Buyer's guide will make it clear just what's out there, and help you decide what 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's in cash, for purchase, or paid in money. Remember to leave yourself a bit of discretionary over for software, and if possible, for peripherals. It may only be a couple of months before

you decide you can't cope any longer without a disk drive, or a monitor.

Secondly - and just as important - what do you want to use the computer for? Are you really going to learn to program? Do you sincerely want to put your home accounts on computer, or produce the company newsletter? Do you want a 'serious' main, a games console, or something that combines a bit of both? Think carefully about these points before you buy; there's nothing worse than being lumbered with a machine that doesn't really suit your purposes.

The ACE Buyers Guide can't make 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 - Dixons, Compus, 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 for 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 goods through the post, make sure you know exactly what components you are getting before you send off your money, send a proving 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 most second hand deal advantages offer the best 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 add-ons being sold with the machine will bump up the selling price, so check the price of the individual components first - they may not be the bargains they are said to be! Second hand machines 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

test 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 pay for what. Remember that you run the same risk of buying second-hand computers at second-hand car: you may end up with a duffer.

Setting up

Apart from the computer itself, there will be plenty of other items you need to buy in order to get your system up and running. These can all be so easily forgotten in the excitement of buying the computer, so go through this checklist now — you don't want to spend all Christmas waiting for the shops to open before you can start up your favourite game.

- **Plugs:** most micros don't come complete with them. Are your disk drives, tape decks, monitors...
- **Plugs:** check that the plug fits the right hole in it (normally 3 and before you get it home).
- **Serials:** yes, the more may well work with the television, but it is the serial lead in the packaging or do you need to buy it separately?
- **Adapt controlling socket:** if the number of plugs needed comes to

more than one, are you sure that your power points can cope? An adaptor will almost certainly be essential, and a trailing socket (one 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 micro will always use more power sockets than you expect.

- **1 splitter:** why bother 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 set up

Custom-made managing task computer desks are for the uncharitably affluent only. Basically, don't set the machine up so that the screen faces a window (you won't get to see much if you do). Remember that cables between keyboard/monitor/tape-deck/disk drives are usually too short to let more than six inches away from each other, and that if the keyboard ends up sitting on the floor the car will decide it's an ideal sleeping spot. Don't spill coffee (or, indeed, anything stronger)

over any of the units, particularly not the keyboard. Don't wave magnets near your disks or the drive, and if you smoke, don't drop ash over any of it.

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 micro that appears expensive may come ready packaged with a monitor, tape deck or disk drive.
- **Disks:** does the machine use disks? If so, how much do they hold and how much do they cost? Is the disk drive built in or external? Are additional drives available? Is much software available on disk?
- **EEP:** all recommended retail prices which quoted include VAT.
- **Display:** many home-games micro are easily hooked up to a television, and this can be the most convenient and least expensive option. However, all computers (except the games computers) can be connected to a dedicated monitor, which will give you a clearer picture, and save household arguments if

- you plan to use the family TV.
- **Display:** 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; Colour 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:** tells 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 MIDI 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 in to which expansion devices can be plugged.
- **Software:** gives you the breakdown 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 found up. Plus information on your rights under guarantee, and what to do if the machine breaks down (God forbid).

Hardware

Acom Archimedes

Models: Archimedes 305, 310 and 310M	Price
	305 no monitor £309.00
	305 colour monitor £359.00
	305 colour monitor £1009.00
	310 no monitor £369.00
	310 mono monitor £388.00
	310 colour monitor £1119.00
	310M no monitor £399.00
	310M mono £1015.00
	310M colour £1169.00
Package: Keyboard, mouse and drive, keyboard, mouse, drive plus monitor (colour or mono), 310M — M denotes inclusion of PC emulator	
Memory: 305 1MB, 310 1MB	
Processor: Acom 4868	
Recommended Retail	

Disks	Price
Format	Capacity
1.25 inch	5.25 inch
	5.25 inch
	5.25 inch
	5.25 inch

Performance	Price
Class and tier	
Graphics	
Resolution	either 320x200 or 640x200 or 640x350
Palette	65536
Colours	16 million (up to 256) (up to 256) or 16 (up to 16)
Display	No
TV	No
Monitor output	mono — composite video
Monitor supplied	colour — RGB + sync depends on package (single pen tablet)
Options	Acom-developed 14 inch medium-resolution colour 13 inch high res. mono
Performance	Price
Speed	1
Scrolling	No
Speed	Fast

Sound

Sound chip: Customised
Speaker quality: Good
MIDI: Yes
Stereo output: Yes
Channels: 16 (4 stereo pairs)

Performance: 8 colours, one internal multiplexer

Hardware

RAM/Cache: 1024/64, programmable sub-systems, fast-write cache, cache, 1024/64, programmable cache

In brief...

The Archimedes is at the cutting edge of micro technology. As such it is not cheap, nor 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 two packages:

(1) Complete system including keyboard (with integral disk drive), monitor and printer.

(2) Keyboard drive only

(3) Keyboard drive plus mono monitor.

(4) Keyboard drive plus colour monitor.

Memory: 64K main RAM
64K secondary ROM

Processor: BBC 1C
(6502 compatible)

Recommended Retail

Price	
128	£497.00
Compact	
Entry system	£309.85
Mono system	£487.35
Colour system	£629.85
with printer	£1084.45

Disks

Format	
128	3.14 inch
Compact	3.12 inch

Notes:

JOYSTICK/BOUNCE: 3 button mouse supported joystick not supported

PORTS: RS 422 serial in Commodore compatible parallel in 14pin module socket in 3.5mm connector in 4 pin edge

Capacity:	
128	640K formatted
Compact	640K formatted
Features:	most features of disk
Price of Blank Disk	£1.00 to £2.00
	(sold in bulk)
Add-on drives:	yes
in Performance	good
Built-in	
128	no
Compact	yes

Graphics

Resolution:	640x200 mode 0
	320x200 modes 1 and 4
	640x200 modes 2 and 3

Palette: 16

Colours:	monochrome 0, 4 and 8
	16 colour modes 1 and 4
	16 colour modes 2 and 3

Mode 1 is a "block" text and block graphics mode. Modes 2 and 3 are text only.

in Performance	none
Graphics	no
Printing	no
Display	no

TV: yes

Monitor output: Composite video

Monitor supplied: 128, no

Compact, yes (see Package above)

Monitor options: Acorn, selected models

Speakers: built-in	average
Compact, no	low

Sound

Speaker quality:	good
Sound output:	no
MSX: built-in interface available	
Options:	4
in Performance:	good

Can it drive 2 expansion ports in 6502 mode? (yes in 422 serial BBC compatible)

Software

EXISTING BASE: One game (Lords).



Hardware

KEYBOARD: 62 keys plus 10 function keys and 10 key numeric keypad. Standard screen keys with multi-function backboard.

JOYSTICK/BOUNCE: Two-Acorn standard joystick for digital points can be used for joystick. Takes most first party joysticks.

In brief...

Master series intended as educational/scientific tools, with these two machines at the "homey" end of the range. Games/entertainment not recommended as main use, as future software is not always converted to BBC format.

PORTS:

128 — 2 enhanced floppy cartridge slots in disk interface in External interface in Commodore compatible parallel printer in RS422 serial in phone connector

range of software from British Systems, or packages when downloading

CURRENT RELEASES: See above

BASES: One usable site (ACE based 975) and at least one more on the way in range of advanced microprocessors

SOFTWARE: Potential is enormous, currently a couple of packages in the pipeline

MSX: Again enormous potential. Very little activity at present however

SOFTWARE FORMAT: One only

PROMISES: Very good but not necessarily for games market

Buylines

BEST BUY PRICE: 128/129

SECOND HAND AVAILABILITY: no

Maintenance: One year 3 year

two 5 year 10 year — return to dealer

128/129 1287 channel in Composite mode in RGB TTL in 20 way IOC connector user port in 40 IOC connector for external processor in 64 way serial interface in 16 way 8-line RS422-Digital

Compact — disk interface in Commodore compatible parallel printer in 50 way edge connector expansion board (used in Commodore video in RGB TTL in postcardmode)

Software

EXISTING BASE: good, but only because of BBC compatibility

CURRENT RELEASES: steady flow, but not too numerous

PROMISES: good for education and similar good for games

Main profile: is in educational/scientific areas; games tend to be either (a) in games (and thus outperformed into 128, 129) or (b) can't (and necessarily better) versions of BBC's 8084

BASES: The Master inside seems a good, with much doing back to old 8084 (but, the same goes for advanced, but memory limitations of BBC even more apparent here)

SOFTWARE: a few, one or two of them outstanding

MSX: not selected

Options: testing supported only of 128

Buylines

Maintenance: within one year's guarantee, return faulty machines to dealer

BEST BUY PRICE: 128/129

SECOND HAND AVAILABILITY: Limited. Try education magazines as well as computer press.

Both machines are apparently BBC's Commodore Compact has built in disk drive (under keyboard). Distinctive BBC format and screen styling



Amstrad CPC

Models: CPC 464, CPC 664, CPC 6128

Package: Keyboard, monitor (mono- or colour) plus built-in speaker(s), plus software (usually 12 games), joystick. CPC 664 is no longer manufactured but may be available on special offer from retailers in different packaging configurations.

Memory: 64K/128K/256K
6128 128K

Processor: Zilog Z80

Recommended Retail Price

464 mono	£199.99
464 colour	£299.99
664 convertible	
6128 mono	£299.99
6128 colour	£399.99

Disks

Format: 5 1/4", 5.25-inch
Capacity: 144K to 1 megabyte (see software), although 360K versions may be harder to find in those sizes.

Price: about £3.00
48K-bit disks: Amstrad DD-1 1.44-bit drive

For CPC 664, Amstrad PD-1 or third party drives for any CPC.

Built in: 48K to 144K 5 1/4-inch

• **Performance:** variable 500-5,000

Graphics

Resolution: Mode 1: 320x200
Mode 2: 640x200
Mode 3: 640x400

Points: 25
Colours: mode 1: 4
mode 2: 7
mode 3: 16

Display: Yes
TV: Yes
Monitor supplied: Yes
Options: Stick with Amstrad's own need external power supply to use any independent models.

• **Performance:** None
Options: Vertical parity (soft), horizontal parity (soft), average to slow

Sound

Sound chip: AY-3-8912
Speaker quality: adequate
Sound output: Yes, mono (only)
MIDI: No
Channels: 3

• **Performance:** 16K 8 channels, but it defaults on to the feedback -12 - but 16000 from stereo output, if a file substitutes.



In brief...

The Amstrad CPC family is a value-for-money and versatile breed. You get everything you need and the whole business needs just one plug. They'll do anything better as games consoles, but they are also able to turn their hands to their serious matters.

Hardware

KEYPADS: To avoid ghosting keys with tactile back feedback. Separate cursor cluster and reasonable numeric keypad, very usable for word processing etc.

JOYSTICK/BOUNCE: Standard First Drive. Third party mouse devices are available.

PORTS/CPC 464: A PCB edge connector - takes 48K disk and PD000C interface to Centronics parallel 88 from the 6128 with extra firmware if 1920 from stereo output if joystick is separate unit if CPC 664/6128 a PCB edge connector - takes PD000C interface to Centronics parallel printer or add-on disk control if joystick if Centronics

port if RGB with sync (Landscape or sync 3.5mm stereo socket if expanded if TV

Software

EXTENDED BASIC: Good even if not as wide as Spectrum or C64

GAMES: RELEASED: Amstrad; most major Spectrum and C64 titles are converted.

GAMES: Good, but some converted titles run slower than the Spectrum or C64 originals themselves. C64, but beware: considering withdrawing supports this format.

GRAPHICS: Good selection of files.

MATHS: Reasonable number of files, but poor in comparison with C64.

SOFTWARE FORMAT: 624 tape, using built-in tape deck; 664/6128 disk, using built-in disk drive

SOFTWARE LOADING: Tape loading is reasonably quick and reliable, disk loading fast and reliable.

PROGRAMS: Good even after some months. Most of C64 software that translated but then about all be reasonable amount of games and other around.

Buylines

BEST BUY PRICE: Cuzny's is offering C64 of both and mono versions of the 664 in just exchange for credit computer. Don's has colour £139 at £249.99. You could also try the CPC 664 for around £160.00, but these are becoming increasingly rare if the extra money at the 6128 is not important, the 6128/64 can represent a bargain if you can find one.

SECOND HAND SYLLABUS: Not good. Offer plenty in offer is consisted of sections of separate magazines.

MAINTENANCE: One year's guarantee. Fully maintains return to deal in 664 statutory rights only.

Amstrad PCW

Disks

8070, 8071/8074-8
Format: 5 1/4", 5.25-inch
Capacity: 3 megabyte (double)
Capacity: 100K formatted per side (8071 Drive B, 8072), 3 megabyte (double)

Format: 100K formatted
Price of Blank Disks: about £1.00
48K-bit drives: from third party companies only, mainly 5 1/4-inch format. 48K-bit drives have been produced to take 5 1/4-inch disks, so that standard 480K files in CPM format can be transferred to the PCW machines.

• **Performance:** variable - reasonably fast and quiet

In addition the machines receive some of their memory for use as a RAM drive, with obvious benefits if slow.

Graphics

Display: No
TV: supplied
Monitor: monochrome only, giving 80 columns text display

Resolution: 720x384
Points: 6256, 6612
6612 green and black, black and white
Colours: 16.8
• **Performance:** N/A

Models: PCW8256
PCW8812
PCW 9512

Package:
8256 - keyboard, monitor with built-in single disk drive, dot matrix printer, Locomotion 1 word processing software, CRM operating system, DR Logo.
8812 - as 8256 above but with two built-in drives.
9512 - simplified keyboard, monitor with single built-in disk drive, daisy wheel

printer, Locomotion 2 word processing software.

Memory:
8256 256K
8812 512K
9512 512K

Processor: Zilog Z88

Recommended Retail Price:

PCW 8256	£243.85
PCW 8812	£456.65
PCW 9512	£573.65

Sound

Sound chip: none as such
Sound output: no
Channels: 16K
Performance: basic only. Some third-party sound enhancement modules available.

In brief...

The PCAT range was designed as a word processing machine rather than a general purpose computer. Non-word processing software was produced after sales tumbled. Not recommended as a games machine.

Hardware

KEYBOARD: Includes extra keys for word processing functions. Keyboard is 100% a substantially improved version.
JOYSTICK/MOUSE: Not supported. Joysticks and mice can be attached.



100 is a relatively tough interface.

POWER: One expansion port takes 100000 serial and Commodore Parallel interface. 4 1/2-inch soft-disc drives.
SPORTS FACTOR: Low. Only one plug needed. Cable from keyboard to monitor has cables from monitor to bundled printer.

Disk drives are set "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 4 inches to a foot in front of monitor.

Software

EXISTING BASE: Not wide but generally programs of good quality. Applies to open-market type titles.

CURRENT RELEASES: very few

PERSPECTIVE: would be good but for launch of 100's. Support will depend on how machines prosper.

GAMES: PCATs are not very serious and, of course, manufacturers only. Adventures are slightly more common, but again the range is small. A number of software titles available under CP/M4 but outlook for future releases uncertain.

GRAPHICS: very low but some low-end GAO-type software available.

BIOS: none - machines not configured to boot.

SOFTWARE FORMAT: Disk only. Good for small business applications.

Buylines

MAINTENANCE: One year's guarantee. Tasty machines return to dealer.

BEST BUY PRICE: As above. Comments not used before 1991.

SECOND-HAND AVAILABILITY: PROSPECTS for 100s and 100-10 good. 100-10 too new for second-hand market so far.

Apple Macintosh

Models: Macintosh SE
 Macintosh II

Package: Monitor, with built-in coprocessor and disk drive, separate keyboard.

Memory: 1Mb

Processor:
 SE: Motorola 68000
 II: Motorola 68010

Recommended Retail Price:
 SE: £2,399.95 upwards
 II: £4,399.75 upwards

Disks

Format: 1200K
Area: 5 1/4-inch
Capacity: 400K
Software: All on disks
Full size drives: Yes
Soft II: Yes

Performance: fast and reliable, but watch out for 100 software that hasn't been thoroughly test ed.

Graphics

Resolution:
 SE: 711x494
 II: 1024x768

Ports:
 SE: Disk and serial
 II: will accept monitor - 100 only
Others with colour monitor - 100 only

Display:
 SE: no
 Monitor output: Integrated
 Monitor supplied: Built-in
Options:
 SE: yes (Macintosh only)
 Apple IIe as Macintosh or AppleLink from 1988

Performance: None
Scrolling: None
Speed: Reasonably fast

Sound

Sound chip: Apple A001
Speaker quality: Good
Sound output:
 SE: No
 II: Yes
with third-party interfaces available: Yes
Channels: 4
Performance: Good

Hardware

KEYBOARD: Supplied. Of basic including function keys and numeric keypad. Optional extra is the Apple Extended Keyboard, with 100 keys.

JOYSTICK/MOUSE: Joysticks and mouse optional. High quality construction. mouse supplied with machine.

POWER:

SE: Apple Desktop Bus connector 1-2
 1000000 serial. II: External disk drive 10-16-inch floppy. One expansion slot SCSI - CD-ROM connector. External audio amplifier.
 SE: Macintosh IIe case 100s SCSI 1

Software

EXISTING BASE: Wide range of software exists in virtually all basic except games.

CURRENT RELEASES: increasing, largely of 25 origin and in its business or 127 list.

GAMES: very few arcade games, but adventures are more plentiful.

GRAPHICS: lots of interesting software for those interested in 2D publishing.

MUSIC: very well supported for MIDI software - but it's expensive stuff.

SOFTWARE FORMAT: all software supplied on disks.

SOFTWARE LOADING: Quick and reliable.

PERSPECTIVE: Excellent opportunity in business and CP.

Buylines

BEST BUY PRICE: These aren't hard, it's a discounted market in Macs; 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 limited to icon-driven adventures (little outside written software available). Good for MIDI musicians, but be prepared to pay through the nose.

SECOND-HAND AVAILABILITY: Reasonable, but not really cheap. Check small areas specialist magazines.

MAINTENANCE: One year's guarantee. Apple offers AppleCare - insurance you take out to cover cost of repairs after guarantee has expired.



Atari ST

Models: Atari 520STX,
1040ST, Mega Tls

Package: 520STX and
1040STF keyboard with
built-in disk drive

Memory:
520STX 512K
1040STF 1MB
Mega ST 2 or 4MB

Processor:
Motorola 68000

Recommended Retail
Price
520STX £299.99
1040STF £399.99

Disks

Format: 5 1/4 inch
Capacity: 360K (formatted)
1.2 MB (drive)
720K (3MB drive)

Software: only supplied on disk
Price of Blank Disks: about £3.00
Add-on drives: yes
Built-in: yes

Performance: Fast and reliable

Graphics

Resolution: high-res 640x480
medium-res 640x320
low-res 320x200

Palette: 610
Colors: monochrome or high res,
a colour in medium res,
16 or less res

Display:
TV: yes
520STX: yes
Other models: via TV monitor
Monitor output: RGB/monochrome
Options supplied: no
Options available: Atari monitors, in
monochrome or colour, 384x256 high
res mode, 501584 medium res,
colour

Performance:
Graphics: yes
Sound: good vertical
scroll horizontal

High resolution is only available
on some monitors, medium and
low resolutions are only available
on colour monitors or TVs.

Sound

Sound chip: AY 3-8912
Voice output: no
MIDI: yes
Channels: three

Performance:
2 outputs, direction-panning

Hardware

KEYBOARD: 80 keys including 10
function keys. Full travel keyboard
with numeric pad.

JOYSTICK/MOUSE: joystick ports
are standard. Two-button mouse
supplied with machine.

In brief...

Excellent as a general
purpose home machine
for games, small busi-
ness, 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.

POINTS: MIDI out (8 pin DIN) &
MIDI in (5 pin DIN) & Audio out &
Audio in & (68) monitor & mouse
monitor & programmer port &
second disk & hard disk & mouse/joy-
stick & joystick & cartridge & TV

Software

EXISTING BASE: Though not the
best sale by a long way, PC standards
the number of ST titles makes it the
best supported of the new machines.

CURRENT RELEASES: Most major
software houses' content their output
to ST now, and several smaller houses
are appearing in ST titles.

PROMISES: Very bright indeed.
Could soon rival Spectrafun and CMI
for several of new releases.

GAMES: Range of arcade titles to
test and adventures, though none
are generally of very high quality.

GRAPHICS: Impressive, with several
first-rate packages on the market.

MUSIC: Excellent. Many companies
producing sound editors, composers,
synths, etc.

SOFTWARE FORMAT: Disk only.

SOFTWARE LOADINGS: A 300K
disk can't hold a really large ST pro-
gram, so two-disk titles are becoming
increasingly common. The dis-
changing these require can't get
boring, especially where you've got
to swap disks during play.

Buylines

WARRANTY: One year's guarantee.
Return to dealer freely.

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Commodore 64/128

Models: C64, 128, 128K

Package: C64 and 128 keyboard plus C24 tape recorder, plus accessories (according to individual dealer) C128D keyboard plus disk drive.

Memory: C64, 64K; C128, 128K; C128D, 128K

Processor: C64, 6510; C128/C128D, 6502 plus 250 for use in CPM mode

Recommended Retail Price: C64: £159.99-£179.99; C128 £169.99 stand-alone; £209.99 with C24; C24: £99 with C26 + software C128D £299.99 † according to individual dealer's packages.

Disks

Two disk drives are commonly available - the 514K and the more recent 514K2.

Format	128 mb
Price	£1.05 (per set)
Capacity	128 formatted
C128	128K formatted
C128	128K formatted

Software: Most disk available or disk sold on drives. Yes, including that only with approved performance.

Build: 128D only in Performance Commodore 128 disk is individually case and built. 127K 128K substitute improvement.

Graphics

Resolution	320x200
CG	320x200
C128/C128D	as 64 in 64 mode, plus 400x200 in 128 mode (8K colour display)
Palette	16
Colours	8

Two software options please note: depending on number of colour displays in configuration.

Display 16: Yes

Monitor output: Yes

GA: Composite video

C128/C128D 128K for 64 colour display

Monitor supplied: No

Monitor options: No

C128D	£119.99 (stand)
C128D	£299.99 (stand)
C128D	£299.99 (stand)

Includes 128K compatible monitor

Performance: 4

System: 4

Scrolling: vertical horizontal

Speed: Standard emulated system, plus otherwise

Hardware option and scrolling have proven to be a blessing and a curse to Commodore graphics. The more screen real estate granted the programming of graphics-based programs, such as text editors, has made screen in software mode is not steady state at all.

In brief...

The 64 is an excellent games machine. The 128 and 128K can be configured for business use using the CPM 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 sound interface chip

Speaker quality: Output the monitor

Sound output: No

Channels: 2

Music: No, although third party interfaces available

Performance: Very sophisticated for the price. The Commodore 64 used to be most popular budget mass computer for home use and progressing to at least 64K.

Hardware

KEYBOARD: Fixed plastic keys with 24000 tactile feedback, plus function keys. Control key arrangement very awkward.

JOYSTICKS: Provided for two standard joysticks. Mouse not supplied. Commodore 128 mouse available, plus two party manufactured models.

VIDEO: 2 (pixel) 8 expansion 8K available in non-standard video to composite video (240/160 160/160) in TV or User pin

Software

BASIC: BASIC, EASY, EASY2. Only created by the Spectrum, but in many cases, Commodore versions of programs are superior.

CURRENT RELEASES: (Showing out)

GAMES: Acute action, second to none. Adventure - good selection.

SOFTWARE: Good selection - quality of

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graphics means that programs can be reasonably sophisticated.

MUSIC: Good wide range of sound effects, some complex. Many MIDI options available.

SOFTWARE FORMAT: CD-ROM - runs on desktops; internal dedicated tape deck (CD) or disc drive. CD-ROM - runs from CD or disc from original desktop.

All Commodore machines require the Commodore TOS-type disk or technology-based software. Some third-party machines are available to make a limited number available to run with the machine, but the equipment may not be available.

SOFTWARE LOADING: Slow as always on cassette and disk loading not as fast as it should be due to slowness of dedicated drive. Most software produced with fast loader routines.

PROSPECTS: Supply will eventually

deplete, but Commodore games may well see longer than Spectrum due to sheer possibility of games from US.

Buylines

BEST BUY PRICE: CD-ROM C64, selling best is before the midnight run. It's priced up for around £100/£90. Otherwise, with Commodore's policy of selling the dealers direct from your "superstore", it's a case of getting the one you like best.

SECOND HAND AVAILABILITY: Good for all models. Check small ads in various magazines.

WARRANTAGE: Under guarantee - take machine back to dealer. (Should get straight replacement within 30 days, or purchase via dealer's discretion.) In guarantee - an independent repair company.



IBM & compatibles

Disks

Format: Mostly 5.25-inch
 (Only very few models use 3.5-inch)

Price: Under £1.00 for 5.25-inch CD-ROM
 Capacity: Almost always 500K formatted

Software: Many disc
Load routines: Yes
Software: Yes

A Performance
 Reliable and pretty fast hard disks, of course, are even faster

Graphics

Graphics are not provided as standard on PC machines, although increasingly most all machines are sold with the necessary add-on boards already installed. There are three common standards, CGA, VGA, and Hercules.

CGA (Colour Graphics Adapter):
 Resolution: 640x480 pixels

Price: 640x480 resolution
 None as standard (use different colour schemes)

Colour: 4-bit for text, mono for graphics
 CGA is the most common PC display standard for colour systems.

VGA (Enhanced Graphics Adapter):
 Full VGA graphics modes, plus enhancements as follows

Resolution: 640x480

Points: 60
Colour: 16
 Normally fitted as upgrade to basic machine, but comes as standard on some PCs (using standard PC card).

Resolution: 640x480
Colour: Mono only
 Comes built-in on many PCs.

There are the three most common also other standards, connecting between them for almost all cheap PCs except in its production, but other standards do exist. Buying second hand you may well encounter machines with unusual or text-only displays.

Share: No
TV: No
Monitor supplied: Normally, No
Monitor supplied with most packages: Yes
Options: Dedicated monitors are usually available (available to machine, if necessary, any built-in board do).

Sound

Sound chip: None as such - need
 dedicated speaker modulation
Speaker quality: Generally good
Stereo output: No
MSX: Third-party interfaces available.

Performance:
 Generally a machine for the specialist is a case of the more recent competitors that

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And not at the upper end of the market Apple Macintosh.

Hardware

KEYBOARD: All models use raised plastic keys with audible click feedback and include function keys and separate numeric keypad. A wide variety of third-party keyboards is available.

JOYSTICK/MOUSE: Two different joystick standards exist: IBM (analogue) and Amstrad/Apple style (the norm for games playing). Most games support either OS or both, but Amstrad has slowly adopted its own IBM joystick. Mouse support, however, includes mouse in package. Third party mice are available for models with PS/2.

POWER: Power Expert: Centronics-compatible. PC385: expansion slot with most machines - but some of these are optional.

Software

EXPANSION:

CURRENT RELEASES: Following out with price levels dropping as well.

SHARE: Cheaper machines has meant that more and more games are being released on the PC - both arcade and adventure. OS2 graphics standard use is in production, but an increasing number of ISA games will surely migrate as upcoming PC will reportedly perform as a machine with games potential.

GRAPHICS: Many sophisticated packages for business presentation graphics.

but less much for the price.

SHARE: Full selection (386) packages and interfaces, these three tend to be expensive.

PROSPECTS: Work's coming as long as there are PCs on desks.

Buylines

BEST BUY PRICE: Given our packages - such as the Amstrad - represent good value, but if you know what you're doing even better bargains can be had from discount stores. If you don't know what you're doing go for a reputable brand.

SECOND HAND AVAILABILITY: PCs can often be picked up in auctions of computer and office goods, or through magazine adverts.

MAINTENANCE: Return to dealer if faulty, but maintenance contract - often surprisingly cheap - can guarantee your peace of mind.

In brief...

Support value if you want an all-round machine, but the PC still betrays its business origins. Increasing number of games software releases, but few of these are of the coin-op arcade variety. Definitely not to be considered if entertainment is your first priority.



Model 864's PC is the original. The many clones include Amstrad PC 1612 and 1640 series, Tandy's 1000EX, Spectrum Bandwell 32, etc. The specifications given below will generally apply to most IBM compatibles unless particular riders are made. If you are thinking of buying a PC or compatible check all the salient details with dealers first.

Package: Depends on manufacturer. Amstrad supply a machine with monitor, with or without hard disk. You can buy

the bare bones or the whole works.

Memory: usually 640K-1024K

Processor: Intel 5086, 8088 or variants

Recommended Retail Price: From around £400.00 for the cheaper basic clones to £1500 for top-of-the-range clones (with hard disk, colour monitor etc.) IBM machines themselves are considerably more expensive.

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Amstrad PC1640	£599	1000	£550	1000	£599	1000	£550	1000
Apple II Plus	£499	1000	£450	1000	£499	1000	£450	1000
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Amstrad PC1612	£399	1000	£350	1000	£399	1000	£350	1000
Apple II XE	£499	1000	£450	1000	£499	1000	£450	1000
IBM PC AT	£799	1000	£750	1000	£799	1000	£750	1000
Amstrad PC1640	£599	1000	£550	1000	£			

MSX

Disks

Format: mostly 5.25 inch, a few 8.25 inch disks produced
Capacity: 180KB formatted (3.5")
Software: mostly available on disk
Price of Blank Disks: about £3.00
Add-on drives: yes
Built-in: no
 • Performance: reasonable, MSX2000-class units tend however to be very expensive.

Graphics

Resolution: 256x128
Palette: MSX 1 54
 MSX 2 256
Colours: MSX 1 54
 MSX 2 256
Display: TV
TV: yes
Monitor output: composite video
Monitor options: some manufacturers produce dedicated models.
Monitor supplied: no
 • Performance: yes
Splices: yes
Scrolling: yes

Sound

Sound chip: AY-3-8930
Speaker quality: output through TV stereo output (not 50 ohms) is intended to simulate Hi-Fi system.
MSX: most party interfaces available (stereo) 3
 • Performance: good, frequency response well designed, with musical

In brief...

Main strength of MSX is in its implementation of arcade games. There is a very active user group that partially compensates for lack of industry support. Despite the attractive dismounting of some models, the purchase of an MSX machine involves a high degree of risk with regard to future support and software releases.

Hardware

KEYWORD: Generally standard sized units, new

JONETICK-BOSCH: Standard price/perf. Third party now available.

NOTE: Expansion bus is cartridge slot if monitor output is "TV" it is built in tape deck if Cartesian printer is Disk drive

Software

KEYWORD: associated with a number of Japanese companies available. Stocks now very hard to find.

CURRENT RELEASES: very low. Mosty budget imported.

PROMOTES: poor. While there is no shortage of software available, not all UK software houses include MSX in their plans.

GAME: some good arcade titles well implemented, but adventures are few and far between.

GRAPHICS: not much on the market.

MUSIC: Yamaha's now discontinued CX3 was configured for musical applications, thus there are a number of packages available.

SOFTWARE FORMATS: tape, disk or pre-programmed game cartridge with tape protection.

Buylines

RECOMMEND: One-year's warranty. Return to dealer if faulty.

BEST BUY PRICE: MSX 1 can be picked up for as little as £2000 these days. MSX 2 is scarce, but should not be below £1800.

SECOND HAND AVAILABLE: Check small ads in computer press.

MSX is not a computer as such, but a standard design incorporated into a number of computers manufactured by a number of (mostly) Japanese companies.

Models

MSX 1, launched 1985, no longer manufactured, some models still available at knock-down prices. **MSX 2** is current version but machines not widely available in UK.

Package

Generally keyboard only. Some MSX 1 models can be found with tape deck and software.

Memory: MSX 1 - 32K-64K, MSX 2 - 128K.

Processor: 8086/8088

Recommended Retail Price: None for MSX1, MSX2 - £150 plus.

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Sinclair Spectrum

Models: Plus 1 (48K and 128K) - Plus 2, Plus 3

Package: Keyboard and built-in tape/disk, plus joystick, selection of software.

Memory:

Plus 1 48K or 128K
Plus 2 128K
Plus 3 128K

Processor: Zilog Z80

Recommended Retail Price

Plus 1 none, ship around
Plus 2 £139.00
Plus 3 £199.00

Disks

(Plus 3 only)

Format	128K Tape/disk
Capacity	Around 200K
Software	Limited yet
Some drives	Not yet available
Some 5 1/4	Yes

Performance: Amusingly fast and efficient. Some bits and bobs enhance compatibility, but this may play with commercial software - but they haven't surfaced yet.

Graphics

Resolution: 640x200
Colors: 1
Patterns: 1
Only 2 colors can be used within any 8x8 pixel square. Limited graphics capability.
Monitor: No
Monitor output: Yes
Monitor supplied: No
Options: No dedicated monitor/frame monitor, but any VGA suitable.



In brief...

The Spectrum is primarily a games machine and should be bought only as such. It is unsuitable for business use, with low memory capacity and only a 32 column screen display. For productivity (ie, graphics and music type applications) use, it is not nearly sophisticated enough for serious projects. Useful for less serious users will want to upgrade before too long.

Performance: None
Screen: None
Scrolling: None
Speed: Average
Despite clever programming, the Spectrum's display still compares unfavorably with both the Amstrad and Commodore machines.

Sound

Sound chip: AY 3-8912
Speaker quality: Plus 2
Channels: Plus 2 and 3 (better)
MOI: Plus 2/3/4/5
No (non-standard socket built in)

Performance: Fair - would top never been the

Spectrum's strong point, and few Spectrum software titles make much effective use of it.

Hardware

EXPANSION: The Spectrum that requires no more of 128K (plus) of its own memory with a floppy disk. The Plus 2's support has raised the status of the 128K (plus) disk mode. It can be used more easily for word processing.

SOFTWARE: Not standard in all models. Suitable systems only up to date. Compatible systems include a Plus 2 and 3 package. First party may include but most compatible software not.

PRICE: (approx) £149.00 Plus 1, £169.00 Plus 2, £199.00 Plus 3. Includes support in Expansion/2 or 3.

Software

EXISTING BASE: Significant none.

CURRENT RELEASES: Best range will also bring one continuing to bring the majority of their files on the Spectrum.

GAMES: A huge number of games that bring them up to a standard. Wide range of adventures, many better.

GRAPHICS: Fair selection, none of which equates better graphics performance than the machines that it would expect from this specification.

RAM: A couple of MOI interfaces available. Use Clonish Spectrum disk.

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Apple

SOFTWARE FORMAT: Plus II - tape using internal tape deck; Plus IIx - tape using both a tape deck; Plus II - tape using internal recorder, not included and that costs \$200 to add (see page 84). Third-party releases also show an increase for Plus and PlusII, but no software would have been re-released. That said, we do have more to mention very soon.

PROSPECTS: New releases will undoubtedly get fewer in number as the strength of the 16-bit machines increases. The new line will, however, feature a good number of games yet.

Buylines

BEST BUY PRICE: Plus (see how featured) as cheaply as the larger (more featured). Try to find a sale selling at or below at around \$80. Carry is offering

Plus II or IIx (\$80)

SECOND-HAND AVAILABILITY: Good. Check small ads in various magazines. All the original Apple IIe models are still in stock everywhere. If you're only interested in playing games and want what the editors say, you'll find a great selection. Prices that we get to \$60 (MSRP - \$40) is a decent way of determining if that is your model/16 model, what you plan on doing is using secondary offers.

MAINTENANCE: All Apple-branded systems have a year's guarantee. If they go wrong within the guarantee period, take the machine back to the dealer where you got it to you. For non-branded machines (Plus and Plus IIx) bought at low and often expensive prices, contact "Apple" directly.

Atari consoles

Models: Atari 2600

Atari XE Video
Game Console
Atari XE
Games System

Package: console plus software
XE GG: console, software
XE GG: console, joystick,
 additional keyboard, light
 gun, software (3 games)

Recommended Retail Price:
 2600 \$49.99
 XE GG \$79.99
 XE GG \$79.99

Disks

Of only one kind: 5.25, 8-inch disk

Graphics

Resolution: only one (200 lines) or 2048 lines produced (on disk). Most software produced at a level of 1024 lines

Palette: 16
Colors: 16
TV: no
Monitor supported: no
Software: 16K Games System only

Hardware

Software: Only one (one) or the 16 Games System. Of pretty good quality.

ARCHITECTURE: An machine line

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 XE2 can both be upgraded to be used as computers.

standard test package.

PORTS: 2600 game controller, TV cartridge slot 1 VDC, 2600 with control for extra keyboard 1 VDC as above

Software

EXISTING BASE: Most Systems are compatible with other Atari console games.

CURRENT RELEASES: Software still in production, but not in the same volume as it was a year ago.

GENRES: Excellent arcade games abound; many adventures.

GRAPHICS: very low

MUSIC: hardly any

SOFTWARE FORMAT: VDC - cartridge only; VDC and VDC can also accept tape, in disk (if converted)

PROSPECTS: Not much better than Nintendo. Much depends on what the US market.

Buylines

BEST BUY PRICE: 2600 - check out Sears for special offers. Console and Systems check for warehouse or package liquidation, otherwise at \$99.

SECOND-HAND AVAILABILITY: Good. Lots in computer magazines.

MAINTENANCE: Manufacturer's guarantee. Any problems - return to dealer.

Nintendo

Disks

A disk system is available in Japan, using proprietary non-standard Nintendo disks. The format provides greater memory capacity and faster-transfer rates than other systems (e.g., Super Nintendo). In the system is still available in the US, it is absent.

Graphics

Display: TV
Monitor options: not yet supported
Resolution: 256x224
Palette: 16

Sound

Channels: 2
Performance: includes speech synthesis

Hardware

Ports: 4 RF, TV, video 1 (auto) 1 game controller slot 1 cartridge slot

MAINTENANCE: Manufacturer's guarantee.

Additional: light gun and 2600 make this a suitable machine for younger children. Not 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. Manufacturers have given strong support to machines, so prospects are reasonable.

Software

EXISTING BASE: Huge (in export)

CURRENT RELEASES: Some

PROSPECTS: Good, but rate of import will depend on machine's popularity in UK. Because of the fact to launch conversion rate, Japanese software is likely to remain expensive.

GENRES: good range of arcade-type software; some arcade adventures.

GRAPHICS: no (as yet)

MUSIC: none

SOFTWARE FORMAT:
 cassette no
 cartridge yes
 converted no
 disk not (available in UK)

Buylines

BEST BUY PRICE: As (MSRP)

SECOND-HAND: 100 is not

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, 8GB robot, two games

Recommended Retail Price:
 Standard model £99
 Deluxe model £150

Sega Master System

Package: console, plus light gun, game controller and 1 game (Hogan's On)

Software format:
 cassette no
 cartridge yes
 smart card yes

Recommended Retail Price: £99

Disks

Not available.

Graphics

Resolution: 256x192
Palette: 64
Colors: 16
TV: Monitor options yes

Sound

Channels: 2
Performance: Good sound effects on most games.

Hardware

Ports: 2 game controllers 1 cartridge slot
Additional: light gun, but designed for future expansion. Not a true computer, recommended as games console only.

Software

EXISTING BASE: large

CURRENT RELEASES: and supported by UK distributor Masterforce.

PROSPECTS: good if supported by Third and parent company Sega continue.

GENRES: wide selection of arcade titles, generally considered to be of high quality. No adventures. Lots of titles currently imported in conversions of Sega coin-op games.

GRAPHICS: none

MUSIC: none

Buylines

BEST BUY PRICE: As (MSRP)

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 Japanese from Japan that give it extra 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 £110 for the very basic (Formica) CP-80 up to large and/or expensive models costing £1,000 to two-colour high business use.

The home user really has two choices - dot-matrix (jet) matrix printers and those with daisywheels. A dot matrix model prints well, especially at a series of dots to make up each letter. Most cheap dot-matrix printers use a matrix of 6 or 7 tall pins to produce the dots - known as 6-pin.

The print quality is acceptable, but on some of the very cheap models you may not get full descenders, the tails of the letters (i, j, and), for example, may not properly extend 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 £250-£300.

Daisywheels have each available character etched on to a print head - so the descender that comes to print each character. Print quality is good but daisywheels are 1000% more noisy and slow 100% more

than have also been expensive.

One office printing technique is thermal transfer. Here the printing ribbon is heated, and the pins heated, so that the material used is impressed on to special thermal paper. Print quality tends to be poor, and you usually get much better off looking at dot matrix or daisywheel models.

Printers also vary in the style, or font, used in the finished print. Some have got dot matrix printers will print in a single style which uses as few dots as possible to make up the character, known as Pica. Extra features, such as bold, emphasis, or underlines, will often be available, depending on the sophistication of the model, in most letter quality models, most machines will print in a style called Elite. Again, other typewriter may be offered.

Panasonic KXP-1081 Converter

Print head 6-pin dot matrix
Characters per second 100 cps max
near letter quality 23 cps max

Print styles Pica, Elite
Price £245

Comment Considerably improved value for money and makes the printer.

Commodore MPS 1200

Comment Designed to fit Commodore 64's non-standard socket.

Print head 9-pin dot matrix
Characters per second 17 cps max
near letter quality 34 cps max

Print styles Pica, Elite, compressed, emphasis, double strike, expanded, double strike, bold, underline, normal, super- and subscript.

Price £200

Comment Considerably improved over the older MPS100, which did not have full descenders, represents a better buy than the similarly priced MPS100.

Star ML10 Converter

Comment Centronics, PS/2, Commodore

Print head 9-pin dot matrix

Characters per second 100 cps max
near letter quality 30 cps max

Print styles Pica, Elite, bold (only available using parallel or serial cartridge), condensed, proportional spacing.

Price £275

Comment Interface for C64.

Centronics 81P

Comment Centronics and PS/2

Print head 9-pin dot matrix

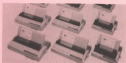
Characters per second 60 cps max
near letter quality 24 cps max

Print styles Pica, Elite

Price £200
Comment Offer comparison price giving good value for money.

Citizen 1200 Converter

Comment Centronics, PS/2 and Commodore
Price £200 (one refers buying



Print head 1-pin dot matrix

Characters per second 120ips max
near letter quality 33-ips max

Print styles 10-pin Pica, 10-pin Elite, expanded 10-compressed, emphasized, double dot strike

Price \$297

Comment Nice compact printer giving good value for money.

Amstrad DMP2000

Connector Centronics

Print head 9-pin dot matrix

Characters per second 100 ips max
near letter quality 30 ips

Print styles Pica, Elite, condensed, double with Pica, Elite, condensed, double with Pica

Price £150

Comment Nice and promoted by Amstrad for its UK range, actually 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 machine. Available exceptions being the IBM PC range and both Zenith and Amstrad Spectrum. For the latter, you can either use the joystick supplied with the machine, or connect your own joystick via an interface. It's virtually impossible to recommend a particular type or brand of joystick. So-called depends on your personal preferences. Almost certainly though you will be looking for something sturdy and durable, with easily accessible buttons, and a position for the directional movements. If you're left-handed, check before you buy that the fire buttons aren't designed for right-handers.

Samsam TAD 5

Connector Atari standard

Fire buttons 3, 2 on base, one on top
Autofire no

Appearance stainless-steel/lightweight, very positive feel, non-slip rubber pads on base

Mechanism microswitches

Price £13.99

Competition Pro 5000

Connector Atari standard

Fire buttons 2 on base only

Autofire no

Appearance metal version, one with clear plastic base so that you can see all the innards and workings

Mechanism microswitches

Price £18.49

Quickshot II Turbo

Connector Atari standard

Fire buttons both on shaft

Autofire yes

Appearance traditional design with grip-mounted shaft. Rubber buttons on shaft.

Mechanism microswitches

Price £14.95



Konix Speed King

Connector Atari standard

Fire buttons arrangement of 6 fire buttons. Mounted to either right or left handside of base, depending on whether you buy a right or left hand 40 version.

Autofire no

Appearance unusual in design, base is designed to fit hand-held one.

Mechanism microswitches

Price £12.99

Cheetah 125 Plus

Connector Atari standard

Fire buttons 4-top on base, bottom on shaft

Autofire yes

Appearance traditional stick with grip-mounted shaft

Mechanism feel switches on alternative movement. Rubber buttons on shaft

Price £9.95

MIDI interfaces

The computer (PC/54) used to control and receive your musical instrument with the aid of a MIDI (Musical Instrument Digital Interface) connector. One model, the Akai-MI, already has MIDI interface built-in. Others need a proprietary device. MIDI is a standard form of transmitting musical data, usually between different instruments, one of which can be your computer.



Cheetah

Machine Spectrum

Socket IN, OUT, THRU

Software Eight hard-recording (real time or sequential) software included

Price £49.95

Comment Good value for money. Compatible with Cheetah Spectrum drum kit.

XRI Micon

Machine Spectrum

Socket IN, OUT, THRU

Extra 1-pin IN and OUT expands 2x-34 software per quarter note.

Software not provided, but good range available separately.

Price £49.95

Comment slightly better specification than Cheetah above.



Debel

Machine Commodore 64

Socket IN, OUT, and THRU

Extra Roland style

Software Not provided but wide variety existing software is compatible, including Banders Advanced Music System.

Price £19.99

Comment Cheaper for Commodore and supports most software.

C-Loth

Machine Commodore 64

Socket IN, OUT and THRU

Extra Software

Software Supermusic package built-in

Price £100 with built-in software. £80 for stand alone.

Comment Arguably the best interface for Commodore, comes closest to providing professional sequencing facilities.

ElectroMusic Spectrum

Machine Spectrum, Amstrad, C64, MSX, BBC

Socket IN, OUT, THRU

Extra Software

Software Good range of software available, including sequencers and patch editors.

Price £99 with software

Comment Not technically brilliant, but EAR is one of the few British companies supporting the 8-bit market.

Stylus Electric Works

Machine Commodore Amiga

Socket IN, OUT, two THRU

Extra none

Software none built-in

Price £25-£30

Comment software is still under on the ground for the Amiga, check out also Debel'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-equipped computer, or from a number of Bulletin Boards or QUERYS databases, such as Personal VFF-64 from user center Monitor 888, or CompuLink.

Along with the modem itself, you'll also need software to interpret the data transmission or protocol. Some modems are now produced with appropriate software built-in, which is convenient, but makes their use less flexible, for those who need to buy software separately.

Pace Nightingale

Machine any with RS232C interface

Availability 021 (260-280), 023 (1000-79-79-000)

Auto feature external 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 A12081)

- FREE cassette containing COMPLETE games worth £2.45 (5-10) Sells the ACE for the IBM and Ocas's GPT FROM THE GCDG for the Spectrum
- Buyer's Guide describing the ACE, where to buy it
- Large colour review of BOB, Bubble Bobble, Gopher, Impact, Batman, Maze and more
- Which Console? A detailed comparison of the Nintendo, Sega and Atari machines and the software available for them
- 40 pages, from £1.50 and a review of Ocas's Mail Order
- Great playings on Gold of Thrones, Batman, Scorpion, Boulder, Defender of the Crown and more
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- 4 Bonus! Saving guides to KISS and WITCHAMERS, plus columns on Rowland J. Papenfuss, Lead-in-board and others
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- 4 Music special on sound sampling and the Roland MT32
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- 4 Bonus Christmas issue with free 1986 computer user's diary
- 4 Game of the Future: An ACE investigation
- 4 Game compilations compared
- 4 Review of large range of electronic keyboards
- 4 The definitive ratings on Defender, Bobdog, Snake in the Sucky Boy, Ocas, Dark Riders and 20 more games
- 4 Detailed tips on F-11 Strike Eagle, Indiana Jones and Jet Hunter
- 4 Prices for Super Spots, Quantum, Jack the Nipper 2, Herringbone, Boulder - more

How to order

Use one of the FREE POST order forms on page 126 (Pink Pages), quoting the relevant order code(s). Or just telephone us on 0458 742111 with your credit card details.

The fabulous ACE binder

Order code A12085



Don't let loose your prized copies lying around to rot! Bind 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 cover? Just £3.50, post free. Order using the form on page 126.

For nearly all mice, there is a manufacturer (you indicated most to the Spectrum) IBM machines and games designed, software designed to be used with a TV are notable exceptions. Overall, you are better off with these models, rather than looking for independent manufacturers' variants. However, you could try Microsoft, Philips or Thomson ranges.

Microvitec 1431M23

Machines Spectrum/Spectrum

Screen width 14"

Connector RGB, TTL compatible

Colours/resolution colour

Price £240

Microvitec 1439M/DM2

Machines Atari ST, Amiga

Screen width 14"

Colours/resolution colour

Price £260.00

Comment: Fisher has high resolution graphics capabilities. Interface just included for ST range.

Samsung MD-12520

Machines IBM PC plus
TTL, monochrome card

Screen width 12"

Colours/resolution mono, green, amber or paper white available

Price £80

Comment: Particularly impressive mono monitor for PCs.

Samsung CD-1467W

Machines IBM PC with VGA,
any with RGB or VGA (Compatible
UltraVista, TTL compatible)

Screen width 14"

Colours/resolution colour

Price £260

Mice

AMS AMX MK III Mouse

Machines Spectrum

Software (games include mouse)
Spectrum, MSX An (£30.00)
Commodore £41.25. Map Press
(£17) £30.00
Amstrad CPCs, MSX An (£30.00)
Map Press (£75.00) Extra £100
Extra mouse £90.00) MSX (compat-
ible) £40.00 - extra mouse
(£75.00)
PC and compatibles (mouse £75)
(£75.00)
MSXs, Map Press (£75.00) Extra!
Extra! (extra mouse) £20.00)
Support (£75.00) Extra! (extra
mouse) (£75.00)

Price generally sold only in conjunction with software (above). MSX mouse can be port-switched to MSX II mode for £20.00.

Comment: Of course, probably has the widest range of compatible software, covering all, CPT and Map Press ends.

Kompton

Machines Spectrum,
Amstrad CPCs, PCs,
IBM PC and compatibles

Buttons

Software Spectrum: Toolkit
(£4.95), Graphics Art (£24.95),
Jigsaw (£60.00) £40.00 for
Plus 2 (£30.00)
CPCs: Art Studio (£30.00)
PCs: Free Wheel Editor Plus
(£29.95), The Desktop Publisher
(£24.95), Jigsaw (£24.95)

Price: stand alone mouse, Amstrad
CPC, £44.00 PCW, £60.00 IBM
£30.00

Comment: excellent all-purpose in
Art Studio-compatible CPC
mouse

Widgits

Graphic tablets

Draw 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 graphics tablet can give very detailed screen images - depending on the tablet's resolution - because of its familiarity of operating on a horizontal surface. You can also place drawings on the tablet and trace over them with the stylus to produce further images. Edimond (£700.00) £500.00 is launching a new electronic graphics tablet at £200 for the ST and Amiga in Feb. 86.

Memory expansion

Plan expansion for sites that machines used to fit a popular with, particularly for Amiga users. Now with the Spectrum, Commodore and Amstrad machines all being available in 1024 configurations, the attention has turned to upgrading to 512 machines to use negative capacities. Commodore (£200) £100.00 offers a 1024 expansion to the Amiga, while Amn (£750) £300.00 offers a similar pack for the MS027. All 3 L and Lanbase Computing (£773) £474.00 offer other memory upgrades.

Digitizers

A classic digitizer is a device which will enable you to draw images, even through the screen 'barriers' on to the computer screen. The image is scanned and each element is reproduced digitally on the mice. Depending on the package, the price of a digitizer can be non-negotiable, or colour £600.00, 70-1-growth or mouse digitizer. Video Systems £184 (£200) produces a digitizer for the Amn ST and Amiga ST at £25.00 and £30.00 respectively.

Lightpens

Used most heavily for graphics applications, a lightpen is a thin stylus with which you draw directly on to the monitor screen to create images. Most lightpens come complete with compatible graphics software, so

THE BITTER END...

LUCKY BITTERS

Our biggest coup yet, the great ACE SLUCKY SHIP Amiga give-away from issue 3, is finally over. Picking out those few lucky winners took some doing—there were over 13,000 entries!

—but just like them we did. The first winners up are J. BALKER of Remscheid, CAROLINE HILL 148 of Southampton, S. BENTON of Gwynedd and S. PARKER of Salford in Salford, Wots. Each of these oh-so-fortunate people wins an Amiga 500, a TV monitor and five pieces of software. But the really notable fortunate guy is GARRY BRACK (BROOKS) of Bolton, who wins an AMIG, five pieces of software and a 1981 colour monitor.

☛ Contact...

The ACE crew's thanks go to the Bristol & Wiltshire Amateurs Club for their invaluable help in this month's flight simulator Super! guide. Ryan and Kevin, take a bow! If you fancy learning to fly and you're within striking distance of Bristol Airport, why not give the club a ring on Liphgate 0370671204?

☛ Oops...

No Bitter End would be quite complete without a decent long-size ODFL, and the minor-league feature in the trouble diary's phone list hands count. Have no fear: issue 4's Token/Tarzo steps into the breach with a doozy data stream in Mac Demmy's wonderful Penelope joke. The problem was with that number 228 in the 100 — it should have been 228 instead — and was very definitely our ODFL rather than Mac's.

☛ Eat your words...

What kind of month has it been this month? We eating out of month, that's what. After Ford and Bink's wonderful helping of case — with humble pie to follow — the ACE office were flooded with pics of people chomping down. Photos of those wacky Phantas folk eating a rather fancy cake at their birthday party, photos of those wacky wackier Cascade people in hospital preparing to eat least a death, and wackier at all, we think, is this one of Eastern Micro boss Richard Austin taking into his laager. Now we at the ACE office are rather partial to the odd bit, now and then — who says? — but having an AMIG for offers does seem a little strange.



☛ Reflect your words!

So, if you really want to know what sort of a month it's been, it's been a legal sort of one. What with the rather surprising contents of the Video/Headings list, the loathly subject of inter-library inquiries, asked by 'Televiewer' in Pearson and the fascinating prospect of Mac

anomic using Commodore for the rather exotic sort of inquisitive falsehood, we've hardly been able to get through the door for the closed at entrance levels in the ACE office.

Wow! All the wiggled wenders have turned their attention on ACE staff now. Those highly articulate Quanta people have written up a pitiful letter over our use of the word PARITBOX. It means a bit-mapped art package. PARITBOX, it appears, is a registered trademark of Quanta (no 1 233 987 to be precise) and they'll be us to stop using it in a general sense, but points.

Now with respect we think the horse has probably already landed here. After all, 'quanted' may not quite be in the same league as 'hooper' or 'fowl' but a lot of people do use it as a general term. Still, Quanta feel pretty strongly about this and we don't, so we're happy to oblige. Unfortunately, the letter arrived too late to change the referenced bit-parboxes in this issue's art pages. There's another problem, though, what are we going to call the things now, for goodness sake? Answers of a just-so please...

PHONE NUMBERS

The catch-ups in the ACE 1988 Diary — we got the phone numbers of Palace Software and Protext wrong. The correct number for PALACE is 0424 4794. Don't ring the Protext number in the Diary — that will get you the European Sales Office. For PALACE ring 0424 4794.

Next month...

Yet another sparkling issue of ACE will be hitting the shelves, on February 10. As well as all the juicy regulars we'll have:

- **NEW GAMES** of the FUTURE being held back by the 0094-0937
- **BRAND GAMES** — the complete low-down on the games that make you think, and what the experts think of them.
- **GRAPHICS** — part 2 of our 64K series
- **DIFFICULT ISSUES** — who's making the 950 BUCKS?

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The Ultimate Maze Challenge

There are no random events in **XOH**'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 **XOH** experience. And **XOH** is not simply about finding solutions. If you can solve the entire puzzle (15 levels plus an encrypted message), you qualify to be a member of the **ORDER** of **XOH**, with a certificate and a badge to prove it.

"...this is one of the most compulsive, cunning and attractive programs I've seen for some time! ... the game is superb - a very classy original twist on the basic maze theme" A-B Computing as reviewed in 1988 issue

XOH's Features

- 15 graded mind-bending mazes
- Each maze approximately 16 screens
- Super-smooth high speed scrolling
- High resolution quality graphics
- High speed or step-by-step replay
- Intriguing logical problems
- Interactive dynamic puzzles



XOH - Now available on:

Commodore 64	Disk	£12.95
	Cassette	10.95
Spectrum	Cassette	£7.95
Amstrad	Disk	£10.95
	Cassette	8.95
BBC	Disk	£12.95
	Cassette	10.95

Coming Soon for IBM PC and compatibles

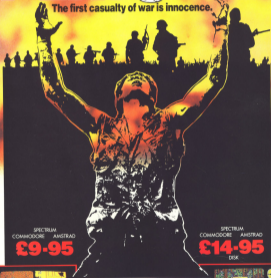
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