Atari ST Amiga CBM 64/128 Spectrum Amstrad + more

## ADVANCED.COMPUTER•ENTERTAINIENT

## CAPTAIN

 BLOODInfogrames' Clone Ranger


- REVIEWED

AFTERBURNER Sega scorcher?

ATF High speed, high class

## 25 PRIZES

This card may already have won you an

## AMIGA!

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## THE ACE CARD

If yours is missing, check with your
newsagent

- or see page 14

WIN!
A Z88 portable computer and Epyx's Impossible Mission 2

## $D=4$




ARCHON - ROM - £14.99 (bystick) . You can't
A battle between the forces of light and fight for it.


RESCUE ON FRACTALUS - ROM - $£ 14.99^{\text {(Joystick/ keybios }}$ optional)俍 You have to rescue your friends to make it easy.

Jaggi aren't going to make it easy.

Atari have always had the greatest arcade games in the galaxy, now they're adding even more winners to the collection. From the high speed skills of handling a W.W. 1 biplane, to the brain-aching Archon battle of wits. Whether

you're landing the punches with Fight Night or using the awesome power of Thunderfox to blast the enemy, Atari give you the best combination of graphics speed and skill this side of Alpha Centauri.


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Want to be a millionaire? We check out gambling theory - plus the software that claims to help you beat the bookies and win the pools.


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... and $70^{\prime}$ clock and $80^{\prime}$ clock and $90^{\prime}$ clock and...In a blistering hail of laser fire, ACE presents the definitive buyers' guide to shoot-em-ups.


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Are you an alien assassin who cares for nothing but the whimper of expiring life-forms and your position on the hi-score table - or are you a planetary pioneer who aims for the final screen, no matter how many bonuses you relinquish on the way? Andy Wilton discusses game-play styles..



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We put you one step ahead with news of next month's games in this month's issue.


Clean out that oak tree with Rainbird's Verminator.

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This month's issue goes out with a bang, and no kidding

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Caplain Blood: Talk with the alien, grunt and squeak and squawk with the alien...

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It's a knock-out! Heavyweight Champ floors the opposition....and probably the player as well.

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## Unlimited time on Ouedex



## BUY LINES

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## 100 Subscription

Save up to $£ 4$ off a single game - and every one's a winner!

## 99 Special Offers

You reader, we crazy. Subscribe to ACE, get the mag delivered direct to your door every month - and then giggle insanely as we fall over ourselves to give you a superb Spectravideo joystick worth £14.95-completely free.

Hey, you!
Yes, you. What have you been doing with your computer this month? Were you busy programming it to win the pools? Or dreaming up a new strategy game? Or trying to find some way of linking it up to your guitar? Or conquering a new galaxy?
...and if not, why not?
The point is that only a few years ago, when computers were regarded as 'hobbyist', we all relied on the man in the street to provide us with software. The back pages of magazines were crammed full of ads for programs to do practically anything, from horoscopes to stock market options. Some of the stuff was pretty ghastly, but the enormous variety made up for the few rotten apples.

Nowadays, however, we rely more and more on a few big companies to answer all our computing needs. Sure, we're not all programmers and those of us who prefer to play than poke have good reason to be grateful to those who produce the games so efficiently. But isn't there just the teeniest hankering for a bit more variety? Certainly there's more to computer entertainment than just gameplay - check out our article in this issue on gambling, for example. And what about some more graphics software - a DIY electronic comic generator, perhaps, or a state-of-the-art animator to link to the video.
Ideas like these don't come from a vacuum. They come from people like you. You're probably bursting with good ideas, so let's hear them, or - even better - let's see them. And if there are any attic programmers left out there - get coding! Don't forget that most of the big companies around today are manned by people who started where you are now. We need you, we need your originality, and (if your product's worthwhile) we'll reward you handsomely.

## - The ACE Team

## ADVANCED COMPUTER ENTERTAINMENT

A completely new look for the best hardware and software listings in the home computer press - kept right up to date so you can check it out before you buy.

121 Random Access
A whole new section for you to peruse, ponder and puzzle over. Just make sure you have a pencil ready.

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Psst! Wanna buy? Wanna sell? Looking for a penpat? Do it all over the counter and in the pink.

Co-editors Peter Connor Steve Cooke Reviews Editor Andy Wilton Production Editor Rod Lawton Staff Writer Andy Smith Art Editor Trevor Gilham Art Team Angela Neal Sally Meddings Publisher Chris Anderson

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# INTRODUCING A WORLD CHAMPION 



## FEATURING EXCLUSIVE DIGITIZED VIDEO ACTION.

Computer game players ... bored with "pretend" animation and "pretend" wrestlers? Your head and wrist limp fromjoystick coordination? Then take the challenge of the only strategy simulation good enough to be sanctioned by the World
Wrestling Federation? MicroLeague Wrestling.

Defend Hulk Hogan's claim to the championship! Or you can be Randy "Macho Man" Savage or "Mr Wonderful" Paul Omdorff and try to capture the bell. See the real WF Superstars perform the moves you want. MicroLeague Wrestling has all the action and drama of live WF matches including interviews by Mean Gene Okerlund and ringside commentary by Vince McMahon, Jesse "The Body"


Ventura, not to mention the legendary BrunoSammartino. And who knows what lurks in the mind of Bobby "The Brain" Heenan or in the heart of the lovely Miss Elizabeth?

So check it out, dude! Orndorff's devastating pile driver, Savage's awesome elbow dropand everything else that's in the book or whatever you can get away with! It's MicroLeague Wrestling. The ultimate in computer sports simulation!
If your computer/software store is out of stock, no need to retaliate with the Hulkster's Atomic Drop. Just write to MicroLeague Sports, MicroProse Software Ltd., 2 Market Place, Tetbury,
Glos. GL88DA


Who's winning the 16 -bit battle for your hearts, minds and cash? Listening to Commodore and Atari spokespeople you'd almost believe that both companies were. In an attempt to get some more meaningful idea of the ST versus Amiga battle, we've canvassed opinion where it counts - in the UK's computer shops.

At street level, Atari's ST seems to be winning the 16 -bit sales battle, but certain pockets of strong Amiga resistance are holding out. At the Sound ' $n$ ' Vision shop in Leigh, Lancashire, Graham Mills has reason to be happy with his Amiga sales - he's just won a holiday in Singapore from his distributors. 'The Amiga's doing fantastic', he says. 'It's outselling the

ST two to one.'
Down in Southend-on-Sea, however, the story's rather different. Estuary Computers' Nick told us that over Christmas the ST was outselling the Amiga by three to one, although the Amiga was picking up again now. The higher price of the Commodore machine, added Nick, was putting a lot of people off buying it in preference to the ST.

At Loughborough's Charnwood Computers the ST was reported to be outselling the Amiga by a factor of 10 to 1 and the shop's Alan Chrichton felt there would be no change in the situation unless Commodore cut the Amiga's price substantially. Alan also thought that if the Amiga were

## VIRGIN TAKE 16-BIT RISK

Virgin are following the success of Diplomacy with the computer version of Risk, to be released under the Leisure Genius label. The program is a taithful conversion of the official board game and is the latest in a long list of projected titles for the label, which Virgin see as being one of its greatest assets.

Leisure Genius is where we really shine', said Patricia Mitchell for the company, the games are timeless and very well suited to computer conversion. ' Watch out then for ST Scrabble Deluxe, Monopoly deluxe, and Cluedo Deluxe during the coming year.
'Waddingtons are revamping Cluedo, giving it more rooms and more characters. These changes will all be incorporated in the new

Leisure Genius version,' confirmed Patricia, who went on to say that Virgin are looking to release more ...advanced computer entertainment. We're looking at games in a more strategic vein.'

But Virgin aren't playing by the board alone - they've also got their eyes on other game genres, and mention historical simulations as a possibility. Not only that, but their interactive video division is pioneering a CD ROM exploration game about the North Pole, while other Virgin companies are involved in video distribution and program production. 'The 8 -bit market is flooded', declares Patricia, 'and we're going the way of 16 -bit, for people who are still looking for real 'games games'.


The Virgin Gang of Five...Hmmm..Just how many fingers does Richard Branson have?
the same price as the ST then 'Atari wouldn't stand a chance'.

## HOW MANY ARE <br> THERE?

Estimates of the number of 16 -bit users vary; Commodore claim there is an installed user-base of 25 30,000 while Atari claim 110,000 for the ST. Other voices, though, suggest that these figures may be just a little on the optimistic side - reliable sources suggested more realistic numbers would be around 80-90,000 for the ST and $20-22,000$ for the Amiga. Even if they're as low as that, the UK's still doing pretty well in the 16 -bit stakes; in the USA there are only 140,000 STs in homes.

An Atari spokesman expressed satisfaction with ST sales last year, describing the machine as the fastest-seling home computer in the UK'. 1988, he suggested, would be a year of consolidation for the machine, with Atari seeking to 'increase the power of the machine rather than lower the price.'

## SOFTWARE SUPER SAVERS

ACE has received a stack of letters froom readers complaining about the service of mail-order software suppliers Software Supersavers, who advertised in the first few issues of the magazine. Naturally, we've tried to contact the company about the allegations of orders sent, cheques cashed but games NOT received - in some cases as long ago as October and November of last year.

First problem; Software Supersavers are no longer at the address in Brentwood from which they used to advertise. They are now to be found at 72 North Street, Romford. Second problem; try phoning them on 0708-765271 and all you get is a recorded message suggesting you write in with your order - which is what the problem was all about in the first place...

Attempts to contact the shop's

owner, Mr. Clive Pullman, by telemessage have met with a blank.

Readers with a complaint are best advised to contact the Trading Standards Officer of the local council where Software Supersavers operate; he is aware of the compa$n y$ 's existence and will endeavour to investigate your problem. You should write or telephone giving all of the following information: name, address, telephone number, title of goods ordered, computer the goods were ordered for, date of the cheque, date when cheque was passed through your account for payment. Write or telephone; London Borough of Havering, Trading Standards Department, Mercury House, Mercury Gardens, Romford, RM1 3DS. Tel. 0708-766999

# TWO INTO ONE DOESGO... 

Most Amiga games are little more than direct conversions of their ST counterparts, Amiga owners often complain, but here's something new: a game whose ST and Amiga versions are literally identical. Take the disk out of the box, put it in an ST and it's an ST game. Put it in an Amiga instead, and it's an Amiga game. It's that simple.

Sounds like a practical joke? In a magazine with an April cover date you could be forgiven for thinking so, but prestige BT software house Rainbird are deadly serious. The revolutionary new disk loading system involved is ADLS, its creators Argonaut Software.

Just to show how serious they are, Argonaut are not using this
straightforward: they offer economies of scale. From the software house's end of things, one duplication run caters for both sets of users. At the retail end of things meanwhile, it's easier to decide how many copies of a game to stock. For Rainbird's Paul Hibbard, the latter point is particularly important in the American market: 'Out in the States

technique on any old game, but the sequel to their highly successful 3 D shoot-em-up Starglider - and that means there's an awful lot of money at stake. So how have Argonaut managed to make the same game run on both machines? More to the point, why did they bother?

The hows of the project are pretty complex things - see below but the reasons why dual-version disks look attractive are quite
their own programs for other software houses. They're currently more than half way through a project for American giants Electronic Arts, so what does EA's Mark Lewis think of ADLS? 'It's pretty cool - a nice bit of marrying technology with software artistry, Jez (Argonaut boss Jez San) has shown it to us, though we haven't discussed using it ourselves at length. We already produce 'flippies' -5.25 in disks with a C64 version on one side and an Atari 800 version on the other, as well as packaging 5.25 in and 3.5 in disks in the same box.

Whatever the commercial advantages of ADLS, public reaction could still be a problem. The Amiga owners' instinctive 'Don't try palming off poor ST conversions on us!' isn't entirely reasonable there's no reason why ADLS games should be any poorer at using the ST's facilities than any other - but there have already been cries of indignation along these lines.

Starglider II will make extensive use of the Amiga's custom chips, with both the Amiga and the 1040ST offering access to a whacking 500 K of sampled music from the B-side of the disk. This represents at least as good a deal as 128 K Spectrum owners normally get for their extra hardware, but the hefty price difference between STs and Amigas could still cause psychological problems. If ADLS can kill off the £24.95/£19.95 price gap between (essentially identical) Amiga and ST versions of a game, that ought to make it the Amiga owner's friend: let's hope it does.

## ADLS: THE TECHNI-

## CALITIES

The ST and Amiga certainly have a great deal in common. They use the same central processor - the Motorola MC68000 - and have broadly similar technical specifications, so converting programs from one to the other is a relatively simple matter. Of the information contained on a typical ST game disk the game code itself, data, title screens etc - around $90 \%$ will be identical on its Amiga counterpart. That's not just a consequence of poor conversion work from the one to the other: that's a measure of how similar the two machines are.

Of course, there's a snag here: the ST and Amiga disks might be $90 \%$ identical as far as the information stored on them goes, but that doesn't mean the information's stored in the same way. Both machines use standard 3.5 in disks,


Paul Hilbbard of Rainbird:
'Simplifies things for shop-owners.'
but stick a normal Amiga disk in your ST - or vice versa - and you won't get very far. Not, that is, unless you know what you're doing.

The first hurdle to a dual-version program is 'rejection'. Both the ST and the Amiga will interpret foreign formats as disk errors, and refuse to do anything with the disks concerned. The machines can be fooled into accepting strangely formatted disks, but producing something both machines will accept is no easy matter.

## HIGH CAPACITY

In designing their disk loading system, Argonaut set out to cram as much data as possible onto the disk. Their aim in so doing was to overcome the greatest single handicap of the 520ST: its single-sided drive.

Though the Amiga and 1040ST both have high capacity doublesided drives cramming in 880 K and 720 K respectively, the 520 ST has to make do with a standard capacity of only 360 K . This falls far enough short of its 512 K RAM size to give games programmers some real headaches, or force software hous-
es to release ST games on two disks to the Amiga version's one. By casting aside the normal format (as would have been necessary in any case to get an Amiga-bootable disk) Argonaut have managed to cram 500 K of program and data onto a disk - the maximum that the ST can read.

Once you abandon standard formats, you start to run up overheads. In particular you must write your own hardware driver routines to load your program in from disk. These drivers themselves take up disk space without adeling anything to the program directly, and this point has put a lot of programmers off the whole idea of dual-format disks.

According to Argonaut's Jez San however, the hardware drivers for ADLS take up very little disk space. The total loss involved in using the dual-format technique compared to a normal high-capacity disk format is 'very small', he says 'less than 20K'. A little finger arithmetic gives 480 K as the space left for game code and data, and that's enough to fill a 520ST or Amiga A500 right up - assuming that screen memory takes up at least 32 K , as it almost always will do.

This is a crucial point: if you can fill the machine's memory with code or data from a disk, that's as much as you need to do for most purposes. Any disk space left over is only useful for overlays - sections of code or data that load in as required - and nowadays these are increasingly often confined to between-game and title sequences.

Of course, not all that 480 K is actually useful to both machines. Graphics and sound handling aren't identical on the two machines especially if you're aiming to make the most of the Amiga's extra power - so a conscientious programmer will want two entirely different sets of routines here. You'll also need a piece of code that works out which machine the game's running on and selects between the two sets of routines accordingly - but none of these need take up that much room if the program's written carefully.

Aside from two-disk ST adventures which access the disk continually - these may be too big for one ADLS disk, in which case the system loses its appeal - the only other area where ADLS could run into problems is reliability. Mass duplication of Starglider II is still some way off, so it's hard to estimate just what sort of a failure rate it's likely to produce. High-capacity disk formats have given other houses trouble on this front in the past, and ADLS pushes the ST drive harder than most systems do, but it's still too early to tell how it will fare.


Kwasimodo - action all the way.

## ROBTEK'S BAD HUNCH

While some quarters of the software industry still argue whether the increasing trend of porting games from 16-bit machines down
to 8 -bit micros is a good or bad thing, some software houses seem to be adopting that practice in reverse.

Take Robtek for example, who have recently released an Amiga game called Kwasimodo which retails at $£ 9.95$. The game looks very much like an ancient Spectrum game with few enhancements. Kwasimodo is slow, dull, and suffers from serious collision detection problems. Spectrum games of even four years ago were generally faster and had more playability than this, despite the fact that the machine was still relatively new and programming standards were not as high as they are today. When Robtek's sales director Mike Segrue was asked what he though of Kwasimodo he replied that Robtek were 'not overly impressed with the game.' He went on to tell us that the game was released 'for a variety of reasons, many contractual.' Which, to do Robtek justice, makes it sound as if they were obliged to release the game. Mr Segrue was swift to point out, however, that there were 'a lot better games to come from Robtek.'

If you listened to all the hype before the latest Super Bowl you could be forgiven for believing that Jon Elway - the Denver Broncos' quarterback - could walk on water, or at least pat his head and rub his tummy at the same time. And if you'd signed him up to endorse an American Football arcade game, you'd probably have been dreaming of all those 10p pieces filling your coffers.

After the match....well, after the match you'd probably have been wishing you'd signed up a certain Doug Williams instead. But Arcadia - the Mastertronic offshoot wholl be bringing Quarterback to these shores - are putting a brave face on it. Mastertronic's Rachel Davies 'explained' the Broncos' defeat by claiming that Elway 'was too busy getting excited about the Mastertronic tie-up'. Nice try. And will the great one be coming over for a personal appearance? 'Not unless he cares to swim...' suggests


# METAL MOGGIES take over 

Robotic pussy cats, silicon butlers, and kiddy computers were all in evidence at the latest International Toy Fair at Earls Court.

Oddest, but most intriguing, had to be Tomy's range of Petsters from Nolan Bushnell, the man who founded Atari but now sees his future in micro-processor controlled miaows. Petster Deluxe is a furry feline bundle with a stubby tail and flashing eyes who can be controlled by different hand-clap sequences.

For $£ 99.00$ you can watch Petster scurry about the floor, waggling its tail and finding its way round the furniture. Clap a different rhythm, and your little friend will spin on the spot - wait to be stroked - and rush off for the sheiter of the sofa. And the only things it leaves on the carpet are dead batteries...

Those of us who aren't fond of cats can share our lonely hours with Petster Spider - your '...furry electronic spider friend who does everything he's asked. ' Not EVERY. THING, surely? The mind boggles. As it is he can put on a good display of falling asleep, then waking up again with his eyes flashing, and scampering across the room. Houseproud owners will be relieved to hear that it does not actually spin webs.

On a more practical note, however, $£ 399.00$ will get you an Omni 2000. This remote-controlled toy-bot features manipulating limbs and a learning/programming function that can have him trotting off down the hallway to fetch you a drink from the


Petster Spider - Only a matter of time before we see the Petster Fly?
kitchen. By the time he gets back, you'll probably need one. If Omni 2000 is a spot too intimidating, you can have almost as much fun with his younger brother, Omnibot. Both


If all this has you weeping with nostalgia for the good old days of soft cuddly bears and rocking-horses, take heart - traditional toys still occupied 95\% of the exhibition. Asked if they didn't think new technology threatened their business, one soft toy rep grabbed a bear with the immortal phrase, 'Look at this then - it talks'. He then turned it upside down - 'Blehhrere' went the bear - '...But of course it does have a limited vocabulary', he admitted.

Petster and Petster Deluxe - push-buttion miaow and no mess on the carpet.


YOU CANTT CALL IT A SIMULATION, THERE'S TOO MUCH ACTION. YOU CANT CALL IT AN ARCADE, THERE ARE TOO MANY REAL DECISIONS. YOU’D BETTER JUST CALL FOR BATTLESTATIONS!

## Snippets..

Up and coming titles for your micro.

## TIME FIGHTER

CRL
C64 £9.95cs
The first version of this seven-stage shoot-em-up will be for the C64 with possible 16 -bit versions later. It sees the player travelling through several time periods always in the thick of trouble. The game's developers have spent a lot of time studying animation techniques to make the central character's movements as lifelike as possible.

## TRASH HEAP

Robtek
Atari ST £19.95dk
You'll need a memory of at least 1 Mb before you attempt to play this game, which comes complete with a pair of cardboard framed, tinted lensed glasses that enable you to view the action in stunning 3D. Your mission is to race across the milky way and deliver some potent drink to your emperor. Take care not to spill any though. Trash Heap should be available now.

## SLAYGON

## Microdeal

## Atari ST £19.95dk

With the most sophisticated military robot ever created under your control, you must try to infiltrate and destroy the Cybordynamics Laboratory. With 500 rooms to explore (not all immediately accessible), be prepared for long sessions in front of your screens. Slaygon should be in the shops as you read this.

CARD SHARK
Accolade
C64 £9.95cs, £14.95dk


The status screen in Strike fleet.

The dealing should start real soon now in this card playing sim featuring Poker (three varieties: Five Card Draw, Seven Card Stud and Texas Hold 'Em), Blackjack and Hearts. You play for money against computer controlled opponents who will speak their minds should the game turn sour.

## ALIEN SYNDROME

The Edge
Spectrum £8.99cs
C64 £8.99cs, £14.99dk
The Sega coin-op that features such memorable end-of-level guardians as the The Hugger is due for release. 16 -bit versions are under development too and should also be with us quite soon now. It's a Gauntlet-style game in which your buddies are looking to you for rescue.

## CYBERNOID

## Hewson

Spectrum $£ 7.95$ cs
Amstrad $£ 9.95 \mathrm{cs}, £ 14.95 \mathrm{dk}$
C64 £9.95 cs, £14.95 dk
Raffaele Cecco's latest program is a shoot-em-up crammed with wacky weaponry including drop bombs,
horizontal beamers, climber blasters and laser bouncers. Plenty of juicy extra weapons to collect then. Look out for it any day now.

## DESTROYER

## Epyx

## Amiga $£ 24.99 \mathrm{dk}$

Anchors are due to get weighed in the near future in this game where you play the captain of a fully armed, Fletcher class U.S.Naval destroyer in this action/strategy game from Epyx. Use your Bofor 40 mm twin guns to reduce the enemy planes to so much rubbish.

## ROCKET RANGER

Mirrorsoft
Amiga \& ST about $£ 29.99 \mathrm{dk}$
Others undecided
You'll find almost everything in here! From zapping guns to zombie women, from vile Nazis to mindcontrolling machines. There's plenty of strategy, arcade sequences and a non-linear plot to keep you busy. Commodore versions should be here first with ST and PC versions following shortly.

## STRIKE FLEET

Electronic Arts

C64 £14.95dk
This latest Lucasfilm game offers strategy and arcade action in a modern naval combat simulation. You've got an entire fleet to command and ten dangerous missions to complete (each of which takes place in a different location). You can opt either to play the game one scenario at a time or - if you think you can handle it - you can play the the whole campaign at once. Strike Fleet should be dropping anchor at your local software emporium very soon.

## TASK III

Databyte
C64 £9.95cs, £14.95dk


Databyte's first European programme should be in the shops right now. This one or two player action-packed arcade game features smooth graphics, stunning music and 16 levels. It's a rectiontesting game that has you trying to save the galaxy from impending doom.

## INTERCEPTOR

Electronic Arts
Amiga £24.95dk
An action-packed flight sim where the player is given six missions to complete in and around the San Francisco Bay area. You have a choice of two planes, the F18 Hornet and the F16 Falcon. Both feature digitised jet and weapons sounds. Look out for it sometime in

## YUPPIE

FAX
At long last PCW-owning yuppies - and isn't anyone who owns a PCW by definition a yuppy? - have a computerised personal organiser that will print out Filofax-compatible pages - DATAfax by Kempston Data.

The PCW's printer will produce copy in condensed print on both sides of the page, which can then be separated along the perforations and inserted into your very own Filofax, or other compatible organiser. Options in the software include Diary, Notepad, Telephone/Address book and Calendar.

DATAfax costs $£ 39.95$ for the software, and 10 quid more if bought with 'a stylish grey binder with supply of continuous paper.'


## ARIZONA DIGITISED

$\mathbf{7 0 , 0 0 0}$ square miles of terrain from Arizona and southern California have been stored in memory for Hughes' modified Weapons Tactics Trainers (WTT). 360degree 'dome' screens surround the cockpit, providing full-colour, high-resolution, real-time images of the surrounding terrain. The idea is to allow pilots to practise ever more complicated manoevres without cost in terms of fuel or weapons - or aircraft, presumably. We await the Spectrum version with interest.

HELP THE FRENCH RESISTANCE, YES. GET CAPTURED, NO THANKS.


## PLAY

Type in the five-line program to discover if YOUR number is one of the 25 winners

Why not make your computer do something really useful? Like finding out whether you've just won a fabulous prize. All you

IF YOUR CARD IS MISSING
You may obtain an ACE card free of charge by sending us a stamped sell-addressed envelope together with a signed statement saying that neither you nor anyone else in your household already owns an ACE card. Apply to:

ACE CARD REQUEST, 4 Queen St, Bath BA1 1EJ (This offer valid while stocks last).
need is the ACE card given away FREE on the cover of this magazine.
The program opposite will turn the 25 winning 4-letter codes into 25 winning numbers. Yours could be among them!

## PUBLISHERS STATEMENT

Each one of the 25 winning four-letter codes printed on the opposite page corresponds to one of the cards distributed tree with this issue of Advanced Computer Entertainment.
If any of the 25 prizes remains unclaimed after the dosing dale, then the same prizes) or others of equivalent value will be carried forward and offered in the next-but-one issue of ACE


## RULES

1. This promotion is open to everyone whit the exception of empiopets of Future P.disting Lid and anyone involved in the distribution or retiring of Advanced Com puser Estertaiment magazine.
2. Ownership of the ACE card is infixed to ore per household.
3. Each for -ether code printed in the magazine corresponds to a withing 5 -dit number on one of the $A C E$ cards.
4. The codes must be correctly decoded using the program pinned each moth in this magazine.
5. Claims for prizes must be received by first post on the closing date al the lates. The value of any urdaimed prizes wi l be cared format d 10 flue issues. 6. II, due to a production error, more than one person claims a single prize, the publishers reserve the sight 10 divide the prize between the claimants. 7. In te event od any dispute, the decision of tee publishers is final.

## HOW TO CLAIM A PRIZE

If you are one of the winners, you may claim your prize simply by posting us your ACE card together with a note saying which prize you are claiming (and from which issue of ACE).
If your prize is for software, list carefully the software you would like from the selection printed in the ACE Reader Offer pages (100-101).
Assuming your claim is valid, we will forward your prize and return your card within 28 days (probably much sooner).

Post to: ACE CARD PRIZE CLAIM, 4 Queen Street,
Bath BA1 1EJ Closing date for claims April 10th, 1988

# THE DECODER PROGRAM 

This short program listing will DECODE the 4 －letter codes print－ ed below next to the prizes．It turns each code into a five－digit number such as the one printed on your ACE card．All you have to do is type－in the program using the instructions for your com－ puter printed below

Then RUN the program．It will ask you to input each of the prize codes in turn and will then reveal on screen the winning numbers．H your number comes up，YOU CAN IMMEDIATELY CLAIM YOUR PRIZE！
If you are unable to get the program to work，a list of the win－
ning numbers，correctly decoded，may be obtained by sending a stamped addressed ervelope to：
ACE April winners list，
4 Queen Street，
Bath BA1 1EJ

## C64，CPC，ST，AMIGA version

10 FOR A＝1 TO 25：INPUT＂Code＂：B\＄
$20 \mathrm{~B}=0$ ：FOR C＝1 TO $4: \mathrm{B}=\mathrm{B}+26$ ：
$30 \mathrm{D}=\mathrm{ASC}(\mathrm{MID} \$(\mathrm{BS}, \mathrm{C}, 1))$
40 IF D $>90$ THEN $D=D-32$
$50 \mathrm{~B}=\mathrm{B}+\mathrm{D}-65$ ：NEXT C：PRINT＂Winning Number is＂；B：NEXT A

## SPECTRUM version

10 FOR A＝1 TO 25：INPUT＂Code＂；B\＄
20 LET B＝0：FOR C＝1 TO 4：LET B＝B 26 ：
30 LET D＝CODE B $\$(\mathrm{C}$ TO）
40 IF $D>90$ THEN LET $D=D-32$
50 LET B＝B＋D－65：NEXT C：PRINT＂Winning Number is＂；B：NEXT A

## TYPING IN THE PROGRAM

## SPECTRUM

48K：Power on，and type the Spectrum listing in as shown， pressing ENTER at the end of each line．To get the word CODE in line 30，hold down caps shitt and symbol shitt keys logether and press the letter I key．When you＇ve typed all five lines in correclly，press R（for RUN）tollowed by ENTER．Now type in the codes one at a time，pressing ENTER atter each one：the program will stop atter you＇ve typed in all 25 codes． 128K：Select 128K BASIC mode from the start－up menu and type in the Spectrum listing as shown，hitting ENTER at the end of each line．Type RUN，hit the ENTER key again and type the codes in as for the 48 K Spectrum above．

## C64／128

Type the listing in as shown，hitting the RETURN key at the end of each line．Type RUN（Donl use the RUNSTOP key），hit RETURN and then type the codes in one atter the other．

## AMSTRAD CPC

Type the Isting in as shown，hitting the RETURN key（6128）or the larger of the two ENTER keys（ 464 or 664 ）at the end of each line．Type RUN and hit RETURN or the large ENTER key again－dont use CONTROL and the small ENTER key here－ and type the codes in one atter the other．

## ATARI ST

Put the LANGUAGE disk in the drive and switch the ST on． Double－click first on the drive Aicon and then on the BASIC．PRG icon to boot Basic．Type EDIT and press the RETURN key．Now type the listing in，hitting RETURN atter each ine，and press the F10 key when you＇ve typed all five lines in．Now type RUN，press RETURN again，and type the codes in one at a time．

## AMIGA

Switch on，put your＇Workbench＇disk into the drive and wait for the desktop to appear．Now put your＇Amiga Extras＇disk in the dive，double－cick on the EXTRAS icon and then double－ click on the AMIGA BASIC icon．Type the listing in as shown，hitting RETURN atter each line，and then click on the BASIC（rather than the LISTING） window．Type RUN，hit RETURN and then type the codes in one at a time．

## OTHER

## MACHINES

The＇C64，CPC etc＇listing is standard McroSott Basic，so tought to work on most micros．If you cant getit to work on yours，wite to us for a list of winners－ detals of this are primted above．

## ONE 1st PRIZE：AMIGA 500 ＋COLOUR MONITOR <br> The winning code：ARUQ

## FOUR 2nd PRIZES：£50 of software－chosen from the ACE Special Offer pages The winning codes：BYVQ DNZM AVSC CQAL

TEN 3rd PRIZES： $\mathbf{\Sigma 2 5}$ of software－chosen from the ACE Special Offer pages
The winning codes：CMNM $\ominus$ AWCD BRKX CSAH －AQIW CKDY DDCD BSXO CAPS AQVY

TEN 4th PRIZES：A year＇s free subscription to ACE magazine．
The winning codes：CFYF CLHU AOJS BWHW CJOI
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After the very respectable ACE rating of 813 for Firebird's Black Lamp last month, here's another good-looking ST arcade adventure from Telecomsoft. People expecting Amie Schwarzenegger to pop up as a homicidal time-travelling robot have seriously misread the title, beccuse the name of this game is pest control. As the three-legged hero of the tale you must work your way up an ancient 250 -screen oak tree, exterminating a wide variety of creepy crawlies and collecting handy items of equipment en route.

Written by Chris Hinsley (of Everyone's a Wally fame) Verminator cims to offer gameplay with a bit of depth to it by bringing in some financial problems. Do you gamble for money, try for a bank loan, or go to the neighbourhood loan-sharks and put your kneecaps on the line?

Verminator (ST): You're the green guy with three legs - handsome devil, aren't you!


It's pedal to the metal this month as we start up another set of highperformance games! Will they burn rubber on the competition, or just stall at the traffic lights? Have they got the turbo-power to really eat that tarmac up, or can't they even make it into second gear? Watch out for a full road-test in an ACE near you, soon!

Kikstart II (Amiga)


## KIKSTART II

Mastertronic
We've already reviewed the Spectrum version of this bike-balancing budget number see last month's ACE - but itll be putting in an appearance on the Amiga any day now and we just had to share these pictures with you. Aren't they pretty? The sound's not to be sniffed at either, but we couldn't figure out how to print that. OK?


## CHAMPIONSHIP

 SPRINTActivision
If you loved Super Sprint but thought it didn't have enough courses to really hold your interest, this one could be the answer to your prayers. It's not just the set of new courses you might have expected: it's a race course construction set. You want a simple loop or a figure of eight? Simple You want slow drones, lots of spanners and plenty of oil on the track? No problem! All this can be yours if you own a C64, Amstrad or Spectrum. Watch out for the definitive ACE review next month, sports fans!

Championstip Spinit (C54): And tere's one I made earlier.


D

## STORMTROOPER

Creation
They may not be terribly well-known just now, but newish 16 -bit house Creation could make quite a name for themselves with this one if the screen shots are anything to go by. The main game background scrolls horizontally - not an easy thing to achieve on the ST - as you blast your way into an enemy-held mining complex of the future. Wete hoping to review this one next month, with Amiga and PC versions to follow.

Stormtrooper (ST)


Stormtrooper (ST)





MORE THAN 1,000 ...

${ }^{6}$ Afirstrate conversion ofa first rate arcade game. ${ }^{\prime \prime}$
ZZAP G4-ZZAP STZZIER
${ }^{6}$ Great graphics, good sound, perfect playability, what more could you ask for? CEvGHIT

${ }^{66}$ Gauntet is definitely the most exciting coin-op conversion ever for the 64. For sheer fun and hours of entertainment value this is game the best yet. 9 COMMODORE USER - SCREEN STAR

${ }^{66}$ A super sequel to the much loved dungeon based shoot ' em up. As much of a blast as the first. and about twice as addictive." Your Sinclar

${ }^{6}$ A corker, fast action and superb gameplay."
SIICLIAR USER - SINCLAR USER CLASSIC ${ }^{6}$ The game's brilliant!" AMSTRADACTON-MASTERGAME


## Just about the fastest way to produce a picture with a repeated element in 3D is by using gridlock.

 Brian Larkman shows you how.0ne of the most dramatic changes in the design of 8 -bit computer games was the arrival of pseu-do-3D in games like Knight Lore, Batman and Alien 8. Before Knight Lore most games - certainly most curcade style games - had a twodimensional, side-on approach. The unique viewpoint of this Ultimate game was the threequarter view, directly above one upper comer of the 'room' and looking into the centre. Objects and characters moving about on the floor below gave the impression that they were travelling 'in' and 'out' of the screen.

That 3D movement was, of course, an Illusion compared to the true 3D views created by games like Elite. Nevertheless, it's a very persistent illusion and is very easy to create with the simplest drawing tools available in almost every drawing package. This month we'll experiment with yet another

## RAPID

ESCHER FLOW
4 colour low-resolution Deluxe Paint 2 with apologies to MC Escher. Drawn using a simple, cubic, three-quarter view block, pasted with gridlock in operation.

trick to avoid the hard work of having to do any 'proper' drawing. There are two main advantages of the three-quarter view. It allows perspective to be ignored and it encourages the use of gridlock.

If perspective is to be ignored the next question is - to what degree are the laws of nature to be flouted? The worst case cam be illustrated with a die or cube of sugar. If a die is held with one face toward you and the opposite comers facing up and down, what you see is a square twisted 'diamond fashion'. If the top comer is now tilted away from you the square appears to be squashed into a true diamond shape and two other faces of the cube come into view. There is no time when the face is a square, and when the other faces can be seen. Nevertheless, if a drawing is made with the upper faces square (having comers of 90 degrees), the other sides can be drawn in without the


ESCHER FLOW PARTS
Basic components used for main drawing.

## A. Outline block. Angles chosen to minimise aliasing effects.

 B. Filled block. Colours chosen to show direction of light.Using this basic block and colour scheme ensures that the final picture will have consistent lighting.C. Waterway path. Blocks can be aligned easily with gridlock in operation. Starting at the back ensures 'hidden line removal'. D. Easy Pillar. Starting at the bottom on a 'key block' (nearest the front).
E. Difficult pillar. To retain 'hidden line removal', the top of the wall must be re-drawn back to a key block.
drawing looking awful. This style is frequently used on the Apple Macintosh to design icons and other graphic symbols. The great advantage of this method is that the effects of 'aliasing' or jaggies are kept to a minimum. Most lines other than vertical or horizontal (when aliasing is not a problem), are at 45 degrees giving the minimum jaggedness.

If this degree of distortion is a problem then a more acute angle can be chosen. Using gridlock it is possible to produce an angle that gives an even degree of stepping. Once this angle has been determined a three-quarter view cube con be constructed like that shown at (A) in both the parts diagrams. Experimenting should produce the ideal cube for your purposes.

With gridlock still selected pick up the outline cube as a window/brush with transparent background. The rubber-box used to


NEW CONQUISTADOR
32 colour - Amiga Interlace resolution - Deluxe Paint 2 . Simple block pasted into a section of the temple, then section scaled down and repeatedly pasted using gridlock.
pick up should be positioned so as to just cover the upper and lower points and the left and right sides of the cube. If the box was positioned correctly it should be possible to paste a row of cubes, next to each other, above each other and touching comers, in perfect alignment, as shown in Temple Parts at (B). Again, a little experimentation should perfect this trick

Temple Parts (B) shows that the outline 'wireframe' construction soon becomes a bit of a mess. A far better result can be obtained by filling the three sides of the cube with slightly different tones. Usually, pale on top

## Gridlock

One of the least used facilities in most painting packages is gridlock. In most circumstances the tools available for drawing can be used to place lines, dots and areas of colour absolutely anywhere on the screen. Gridlock is designed to limit the placing of some brushes, lines and blocks to the corners of an invisible grid. With gridlock turned on for example, and win the grid set to $8 \times 8$ pixels, the smallest box that can be created is $8 \times 8$. Similarly the end points of any rubber banded line that might be drawn are limited to the comers of the grid. This does not prevent the drawing of diagonals however, rather, it limits them to specific angles.
and the two darker tones on the sides gives a lifelike 'block'. If more than four colours are available the faces can be textured or 'dithered'. By repeating the process of picking up the filled cube with gridlock selected it should be possible to build up a credible wall or building similar to Temple Parts (D) and (E). To achieve a sort of hidden line removal it is better to start at the back of the constuction and work forward. The last block (or key-block) to be positioned should always be that at the front.

The Temple in New Conquistador (apologies to M.C. Escher) was drawn using the basic block shown at (A) and (B) in Escherflowparts. The basic waterway (C) was arrived at by trial and error, starting at the top and working down. Close to the letter $(C)$ the final meeting point of the two sides can be seen. Obviously there is a slight offset (mistake in any other language) but I positioned it at a point where the waterfall would cover it up. It is a part of the 'art' to learn how to cover up - or even better usemistakes in this way.

The pillars were drawn using one block. starting at the bottom. Those at the front (bottom) edge (D) are easy to build up as the final block in the pile is the key-stone. Other pillars such as that at ( E ) are more difficult. They require either that the basic pathway of

-
blocks is repeated back to a key-block to remove inconsistencies, or that the point where the top of the pillar joins on is picked up and stored in advance and then pasted down again when the pillar is complete. Gridlock makes these operations very easy.

The solid walls were constructed in outline, again with gridlock selected. It is importons to maintain continuity with the angles used for the basic block, both to make the illusion of three-dimensions work, and
devastation of the world's rainforests) was constructed last month using a transparent 'cel' placed over the screen. The waterfall and flow lines in the 4 colour drawing were all drawn free-hand using a one or three pixel brush.

All these drawings were made using gridlock and a very simple 'cubic' block. It should be possible to get more interesting results using more complex blocks and cylinders, and by varying the size of the grid. As long as the blocks are constructed and cut and pasted using one size of grid, consistency should be maintained. Good luck with your gridlock.

## The three-quarter trick

The basic technique or 'trick' of a three-quarter view game is that it ignores perspective. By looking down onto the scene at quite a steep angle, the objects furthest away are (in real life) hardly any smaller than the nearest ones, despite the laws of perspective. If perspective is completely ignored therefore, the impression of depth can be created without the nuisance of reducing the size of objects as they move toward the back of the scene. In the illustration 'Escher Flow' above this effect is exaggerated to create quite a peculiar illusion. 'New conquistador' on the other hand, shows that a lifelike scene can also be created using such a view.


TEMPLE PARTS Components used for New Conquistador.

## A. Outline block.

B. Outline temple section. Without 'hidden line removal' this construction soon becomes very confusing.
C. Filled block.
D. Filled temple section showing construction method slarting at the back.
E. Complete temple section with all hidden lines removed by front blocks.
F. Temple section scaled down for further construction.
G. Composite temple and reduced block used to extend the pillars. H. Broken Pillars.
J. Vegetation Brush.

## ESCAPE

Christian Simpson,
Rtichmond, Surrey.
Christian writes: 'If you click the right mouse button on the $R$ of GRAB
 BER, when selected in Neochrome, a new function appears - the animate function. Animate a figure, speed up the animation and then press escape, the workbench is then copied onto the screen. From here I moved the icons from the boxes and edited them to give the escaped effect.

## FROG

Dovid Dickson, Forres Moroy
David's fine example of C64 wildlife art was produced entirely using the graphic editor in Basic Lightning.


## LEVEL 42

Shoun Dovies, Barnsey, S Yorkshire.
This prolific artist creates all his masterpieces on the ST using Mirrorsoft's Art Director.



FROM BEHIND THE WIRE
Roy's ST works of art were created using Integral Solutions Degas Elite package.



## PATHWAY

Shoun Davies, Barnsley. S Yorkshire.
Another example of Shaun's handiwork. Created on the ST using Mirrorsoft's Art Director.

## BRING ME THE HEAD...

## Fronk Tout, Torquay.

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

## RED ARROWS

Mr B.S. Oldfield. Folkestone
Mr Oldfield uses Animator 1 to express his artistic flair on the Spectrum. A sound tip from Mr Oldfield is "patience, patience and more patience."


## Dovid for. Sheffiela

Created in lo-res on an Amiga using Deluxe Paint. Drawn freehand.



Rock and Ace up against a Tank in the early stages. Blips on the map indicate more monsters to come.


Rock waits for Ace to join him on the way to level 3. Poor fellow he's so bored he's nodded oft.

## XYBOTS

Atari -20p per player
Two-player arcade action hits the coin-ops in this strange and - initially, at least - confusing game. The 'once peaceful planet' has been invaded by a load of nasty robots, who now infest the multi-level underground centre.

The players - and it's much more fun as a team - take the roles of Captain Ace Gunn and Major Rock Hardy, two real hotshot dudes who have, of course, got to clean the place up.

Xybots features an interesting split-screen display; at the top centre is the map of the layout. You need to use this because the actu-


It takes two to tango this month. Atari's Xybots gives you 3D joint exploration, while Sega's Heavyweight Champ pits you against a series of mean opponents in the modern arena of the boxing ring. It's a game that really takes brawn - and takes it out of you too.
al playing area is a maze of walls and corridors - a lot of the time you must use the map to find your way around and to spot the blips indicating approaching Xybots.

On each level you must whip around blasting the numerous robots, collecting energy pods and the spinning coins that allow you to buy extra powers between levels.

The game has some neat touches; when


Down on level 7 Rock takes cover behind a column. Those blips
are pretty numerous - lower levels of the game are robot-infested.
one of the hunks makes it through to the next level he stands, hand on hip, impatient ly waiting. If your pordner is a little tardy in completing the level, you'll see and hear yourself dozing off.

Combat against the Xybots is pretty straightforward - you just zap em and try not to get zapped in return. Here and there are columns you can hide behind, and if you keep your eye on the map you can spot them coming and ambush them.

The game is a loudable attempt to do something a bit different to the combat genre. The arcade adventure format might look a bit old-hat to home computer gamers but it's well worth a go - especially in twoplayer mode.

## MIDNIGHT LANDING

Taito seem to have gone overboard with this cabinet; once you get inside you shut the doors and lock out the world. What that means is no over-theshoulder stuff - but there is a rearmounted monitor that lets spectators see what's happening. The game itself is a rather tricky flight sim, and not really what we've come to expect in the coin-ops. We hope to land you a detailed look at the gameplay real
soon now.


## HEAVYWEIGHT CHAMP <br> Sega - Price 20p

You can run, but you can't hide in this exhoustingly realistic box-em-up from Sega. Heavyweight Champ is the first coin-op we've seen on general release that actually requires you to put in almost as much effort as the activity it's simulating

You play the game by grabbing hold of those handles you can see protruding from the cabinet. To punch you shove them in

In this way you can not only deliver those neck-snapping jabs, but a nice swinging hook and a few meaty uppercuts. The swivelling monitor also helps as you try to block or simply get out of the way of punches.

The game structure is pretty straightforward. You have to knock out four successive opponents before getting in the ring against


And here comes Tom 'Cyclone' Kearns - your second opponent.


A blur of action as Kearns closes in...

...oh dear! Il's bye-bye Michael Bison and dig deep for some more 10 p pieces.

Heavyweight champion: the hardware. Weighing in at 352 lbs , this is one of the more heavyweight heavyweights.

the world champ. If you're still on your legs after that you go on to title defences. the pugilists have suitably silly names - Michael Bison, for instance - and all resemble wellknown fighters; Tommy Hearns and Marvin Hagler both seem to have been in the minds of the designers.

Make no mistake - if you're not prepared to put your back in to Heavyweight Champ it's just not worth spending your cash. It's not the most subtle or thoughtful game you'll play, but it's certainly the sweatiest and one of the most exciting.

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Could your micro tell the future? More importantly, could it tell you the winner of the 3.30 at Aintree? Believe it or not, the experts maintain
 that it could. Steve Cooke and Pete Connor order their Roller and get down to the track...
et's not beat about the bush, we're talking pounds, shillings, and pence here. You've got a micro, you've scraped together enough to punt on Little Nell, or the pools, or the blackjack table, and you want to get rich. Impossible dream? Or plausible possibility?

Chances are your computer just might be able to turn the tables in your favour. It's not easy - you've got to accept quite $\alpha$ bit of preparation and hard work - but the end result could be a system running on your micro that will. in some creas, substantially increase your prospects of winning. Provided you never allow yourself to become a slave to the habit, and provided you always exercise common sense in not laying out more than you con happily afford to lose, the combination of computing and gambling can provide a lot of fun - and the possibility of a profit at the end of the day.

Computers can help the gambler in two ways - by brute force, or through 'artificial intelligence.' The first approach invokes the micro's power to manipulate and sort large amounts of data at high speed. spotting relationships that could take a human being months to work out. Doing this obviously involves the user in a fair bit of work as well - after all, the data has got to come from somewhere and you're the one with the fingers.

The AI approach is perhaps more interesting, but also difficult for most home micro owners to implement beccruse of the lack of available software. This will almost certainly change during the next couple of years and the results could be very exciting. An AI program called BEAGLE (Biological Evolutionary Algorithm Generating Logical Expressions, if you please) assessed the form of 153 horses during the summer of 1982 and predicted four definite winners and thirteen hot favourites'. All four winners actually won
their races, and of the thirteen other horses ten were first past the post. Pretty impressive stuff.

The brute force approach com have some startling results as well, however. The key factors here are the amount of data you can access and enter into your program (see the Data Sources box) and the skill with which the programmer can combine the factors, add weighting to various aspects of form, and select winners. David Stuant, who used to do computer tips for the Sun, once achieved an astonishing $60 \%$ hit rate over a flat season using this approach. In fact David Stuart himself is quite a phenomenon, as you can read in the Hot Tipster box elsewhere in this feature.

What we've done, then, is to take a look at some of the software currently available for punters. A successful program will demand a lot from its users, but you can be reasonably sure that the greater effort you put into it, the greater the potential reward.
${ }^{\text {SPECIAL }}$

You should remember, however, that even breaking even is quite an achievement in the gambling world - as in any other pastime, you usually have to pay for your entertainment.

## COURSEWINNER <br> Selec Sotware

| Spectrum |  | $£ 15.00 \mathrm{cs}$ |
| :--- | ---: | ---: |
| C64 | $£ 15.00 \mathrm{cs}$ | $£ 18.00 \mathrm{dk}$ |
| BBC | $£ 15.00 \mathrm{cs}$ | $£ 18.00 \mathrm{dk}$ |
| CPC | $£ 15.00 \mathrm{cs}$ | $£ 18.00 \mathrm{dk}$ |
| PCW |  | $£ 18.00 \mathrm{dk}$ |
| IBM PC |  | $£ 18.00 \mathrm{dk}$ |
| ATARI |  | ST |
| due March/April, | AMIGA | versions |
| di8.00dk. |  |  |

Selec's Pete Chadwick describes Coursewinner as 'a tool' for weighing the factors involved in predicting the outcome of horse races - whether on the flat or over the sticks. He emphasises that it's not a magic system'; it uses exactly the same factors as a human with pen and paper would - it just deals with them much more efficiently.

To use the program you'll need a copy of The Sporting Life or The Racing Post - or at least a daily paper with detailed info on runners and riders etc. Factors such as weight carried, distance, going, speed factor, jockey's record can be taken in to account. In fact, there are 15 or 16 different pieces of data that can be entered for each horse in the race. The more you enter, the more effectively the pro-

COURSEWINNIER

selec gram will do its job - but Pete Chadwick emphasises that you can use as many or as few of these factors as you wish.

Furthermore, before you run the computer analyis of the data, you can alter the 'bias' - that

is, the weight given by the program to the individual factors. So, if you think that the trainer of the horse is insignificant, you merely turn that one down to zero. In this way you can use whatever expertise you yourself have to add to the computer's analysis.

Used over the course of a season, Pete Chadwick reckons Coursewinner will turn in at least a small profit, but bear in mind that entering ALL the data for races can be a long and tiresome task; you need to be pretty dedicated to stick at it.

## David Stewart, computer tipster

A shining example off the fact that there's not just profit but a career in your computer is provided by 20 -year-old David Stewart, computer tipster extraordinaire.

As a mere 14 year old David acquired a ZX81, onto which he transferred the manual record he'd previously stored in a shoebox. It seemed a logical step to work out a system for picking winnners from the historical data available.

He wrote to his local paper, the Northern Echo in Darlington, who pitted his computer tips against their own human for a week. David's tips came out the better; he was taken up by Radio Cleveland, then by other local radio stations, then by The Sun. Alll of which led to his current job at The Racing Post in the information services department, working on a Prime minicomputer.

David's selections consistently outperform those of human tipsters; in one season
he had an amazing 60\% success rate; he averages around $40 \%$ winners, as opposed to the $30 \%$ scored by other tipsters.

So how does he do it? The data he uses is exactly the same as anyone else's, but, he says, 'it's the percentages in which you combine the factors that's the important thing. 'What that trick is he's not revealing, and he's not going to put his work on the market as a commercially available program; he thinks that the average punter just finds it too much trouble to enter the relevant data.

Neither has he made a fortune out of betting himself. He does think, though, that I've probably made more than I've lost over the years. But the real pleasure for me is in the ratings.' And does he think gambling is a mug's game? 'No - not if you treat it as a statistical exercise over a long period of time, and if you know something about what you're doing.

| Atari 8-bit | £9.99cs | £14.99dk |
| :--- | :--- | :--- |
| C64/128 | $£ 9.99 \mathrm{cs}$ | $£ 14.99 \mathrm{dk}$ |
| Atari ST |  | $£ 19.99 \mathrm{dk}$ |

Breaking the bank at Monte Carlo is many a gambler's dream. Most of us are unlikely ever to get near Monte, let alone make it to the casino and empty its coffers. But now - courtesy of the micro-

computer revolution - we can all break the bank from the comfort of that well-worn armchair in front of the monitor. CDS's Casino Roulette - due to appear around now - simulates the spin of the wheel and the thrill of the wager on both Atari ST and Amiga.

Furthermore, it gives details on playing six betting systems - and thus lets you try them out at without losing your shirt. Now systems are beloved of Roulette maniacs, and some of them certainly sound pretty lunatic. A very popular and very simple - one in the past was the Martingale; all you have to do is double your bet every time you lose. Easy. But what happens if you have a losing streak of several spins? Lose twen-

## BEATING THE BANK

 - A History of GreedThe idea of trying to come up with a mathematical theory that could make precise predictions about the chance outcome of events is obviously very attractive to a gambler and was first taken seriously in the 17th century. It all started in Paris where the Chevalier de Mere made a small fortune by repeatedly betting that he could throw at least one six with every four rolls of a single die.

Untortunately, he was so successful that very soon no-one would accept the bet. In 1654 he tried to get round the opposition by changing his tactics and betting that in 24 tosses of a pair of dice he would throw a double-six at least once. He had no problem with this bet at all - everyone wanted to take him on, for the simple reason that he kept losing. Although common sense seemed to dictate that the new bet was simply a variation on the old theme, practise proved otherwise and the Chevalier asked the mathematician, Blaise Pascal to find out what was going wrong.

Pascal was able to show that the odds in the first bet were 14 to 13 in favour (i.e. a probability of almost $52 \%$, significantly better than evens), but contrary to expectation the probability in the second bet was only just over $49 \%$ - hardly a winning proposition.

## ALL SYSTEMS ARE GO

Once probability theory had got off the ground, other punters began a slightly different approach, coming up with betting systems that could maximise their profits. Again, the French were first past the post with D'Alembert's Method.

D'Alembert was the ilegitimate son of a French aristocrat and a triend of several famous Parisians including Voitaire and Diderot. He was very keen on roulette, and developed a system of betting that increased his winnings as follows:

1. He would start with a bet of 5 francs, betting on either red or black. This ensured him a $50 / 50$ chance of winning because in those days there was no zero on the roulette wheel. Nowadays roulette is a losing proposition for punters
because the zero gives the casino what is called a house advantage, whereby they pay reduced winnings when the ball lands in that slot (or in some cases no winnings at all).
2. Atter each win, he would decrease his stake by one franc, and atter each loss he would increase it by the same amount.
3. If ever he found his stake reduced to zero by the method above, he would start again at 5 francs.

There is some surprisingly sophisticated theory behind this method. It really does work, and can increase a gambler's returns significantly whenever he is betting on a system that offers either an even chance or better. Naturally this is hard to do nowadays, but if you find that your prediction program is giving you better than even chances, D'Alembert's method should raise your income.

There have been numerous other systems developed, including some to help you win at blackjack (or 21, "vingt-et-un'), the most famous probably being that devised by Edward Thorp in 1962. He started the craze for so-called 'counting systems' that involve the player memorising all the cards already played, and then adjusting his bets accordingly. His system is very effective and can swing the odds, which are normally in favour of the casino, the other way. The problem is that the level of winnings remains very low and - of more practical significance - people who count' and bet in the manner prescribed by the system can be recognised by casino staff and gently deposited on the pavement outside.

One of the most exciting aspects of artficial intelligence programs is that, unlike your average database, they can generate their own rules and 'systems' and test their effectiveness themselves. With computing power becoming cheaper and cheaper, it can't be long now before someone comes up with a home micro Al package that could show a significant performance on track, field, and table. Any bets?

## Data Sources

Almost all home computer prediction programs rely on the user to enter data for them to analyse before they will come up with the goods (assuming they ever do). This is particularly important with horse racing, where a horse's 'torm' can be a strong determining factor in how well it does on the track.

Naturally you can't follow a horse around all the races, seeing how well it pertorms, but luckily there are people who collect all this information logether for you. Best source of all is The Sporting Life newspaper, which publishes regular summaries of the performance of horses in the field. Not only is this presented on a tace-by-race basis, but the
paper also occasionally prints special statistical summaries about particular stables.

This information is an absolute goldmine for the punter. The Sporting Life Form illustrated, for example, gives details on each horse's performance, age, genetic background, winnings history, weight carried and so on. Combine this information with that printed by the tipsters in the popular press
and you have some excellent raw material for your micro to get working on. BEAGLE, the AI program mentioned elsewhere in this feature, used the Daily Mirror Spotform in conjunction with information drawn from racecards and the Sporting Life.

## MINE OF DATA

The Sporting Life Weekender costs 70 p and gives page after page of analysis, presented in several difterent ways. Here you can see part of the racing form for a 4.15 race at Ayr. The information includes the season's placings on each horse, its age, weight. and other characteristics. Passages in bold type are usetul comments on previous performances.

ty times in a row and you'll be betting MILLIONS more than you started with. Not that many casinos would let you bet that much at once anyway.

The program plays several other systems, but programmer Nick Sen points out to us that in auto-mode with one computer player using a system and one betting at random, the random player came out on top.

## POOLSWINNER

Selec Sotware

| Spectrum | $£ 16.50 \mathrm{cs}$ | $£ 19.50 \mathrm{dk}$ |
| :--- | :--- | :--- |
| C64 | $£ 16.50 \mathrm{cs}$ | $£ 19.50 \mathrm{dk}$ |
| BBC | $£ 16.50 \mathrm{cs}$ | $£ 19.50 \mathrm{dk}$ |
| CPC | $£ 16.50 \mathrm{cs}$ | $£ 19.50 \mathrm{dk}$ |
| PCW |  | $£ 19.50 \mathrm{dk}$ |
| IBM PC |  | $£ 19.50 \mathrm{dk}$ |

Winning the pools sounds simple - all you have to do is predict the results of the matches. Then if there are 8 draws and you get them all, you'll win a fortune.
the pools every week, and not that many of them win a fortune. So an interesting alternative to the 'close your eyes and stick in a pin' method is to use a computer analysis of historical data to predict the likeliest homes, aways and score draws. Selec's Poolswinner attempts to do just that.

The program requires you to enter results

TII THR
Brtain's most popular thutter is on the foolballs pools. During the last season (August 86 to Wuly 87 ) a staggering e 568 million was spent on the coupons. Of that massive sum, 8164 mil DICTIO lion was pald out in winnings.
OOLS PREDI People gamble on the pools because of the chance of wining a fortune $-21,000,000$ is Lifwood's maximum first dividend pay out. But the chances of geting that kind of money are pretty slim; the most recent million pound winner was one out of 7.5 million.
However, a Littlewoods spokesman reckoned that betting a level stake of 81.20 through"out the year would give you a $70-1$ chance of winning some kind of dividend - which could be as litile as 50 p, or as much as that magical jackpot payout...
through the season, which you store on cassette or disk. It calculates league tables and predicts the most likely results. Also provided is a database of results for the past 10 seasons.

Naturally, you need a certain amount of tenacity to get the most from the software; you have to make sure you enter as many results as possible, Saturday and mid-week fixtures.

But how effective is it? Pete Chadwick of Selec points out that anyone who folows football could make a pretty good prediction of the result of, for example, Liverpool v. Charlton. But what about Bournemouth v. Wrexham? You probably haven't got a clue, but a program like Poolswinner will analyse past results and current form to come up with a prediction.

Pete Chadwick claims that people who use the program regularly come out with a profit. They might not win that million quid, but they won't be crying all the way to the pawnbroker. -

## Understanding the Odds

People are often confused by the way in which odds are expressed in betting terms. and how they relate to actual probability. Soffware packages often suggest several possible winning opportunities, and the secret of using the programs successtully is to bet selectively, combining your program's recommendations with your own selection of best possible odds. For this reason, it's important to undersland what odds, as quoted by bookies, actually represent. Bookies quote two types of odds: 'odds against' and odds in favour' (or odds on'). What's more, they frequently use number pairings like 6 to 4 : when ' 3 to 2 ' would seem more logical. The best thing to do is to convert all odds into a standard format which will enable you to compare prices on different horses more effectively.
To do this, you use the formula $O=F / A$, where O equals the standard format for odds in favour that we re looking for, $F$ is the book-
les' quoted odds For, and A is the quoted odds Against. So, if the bookmaker is quoting 6 to 4 against, the formula would read $\mathrm{O}=6 / 4$. so $O$ would be 1.5. Standard odds in favour would therefore be 1.5 to 1. Bookmaker's odds of 6 to 4 on would give us a formula of $O=4 / 6$,so $O$ is 0.66 and standard odds in favour are 0.66 to 1.
If you're happier working with percentage probabilities, you can convert your value for 0 with the formula $\mathrm{P}=\mathrm{O}(\mathrm{O}+1)$ and multiply the result by 100 . So the probability percentage of a horse quoted at 6 to 4 against (where $\mathrm{O}=1.5$, as above) would be $\mathrm{P}=1.5(1.5+1)$, a probability ( $P$ ) of 0.6 , or $60 \%$.



You want the world's most exclusive shoot-em-up? You want processing power beyond the wildest dreams of Archimedes owners? You're looking at it! This is the deceptively named INMOS Flight Simulator. It's from INMOS right enough - their mind-bogglingly powerful Transputers are the driving force here - but it's not really a simulator in the Flight Sim II sense. Though the game does feature runways, you don't take off or land - just fly, shoot, and stare in amazement. This is definitely one for the combat freaks!
 ule to provide a working simulator after only two weeks

As it stands the game can be played by up to four people at once, each with their own pilot's eye view of the game world, the winner being the last one still cirborne. It runs on a system built out of standard INMOS development boards, the original using eleven assorted Transputers per person. By upgrading to top-of-the-range T800 Transputers throughout, Phil and Steve have now got



The INMOS wafer fabrication plant in Newport, where the Transputers are made.
the game running at 23 frames per second a rate approaching the speed of professional flight simulators used for pilot training.

You'll probably see more of Phil's work in the near future: some of his rather fancier demo programs are currently being used to show off the Atari/Perihelion ABAQ workstation. Watch out for more details and pictures of $A B A Q$ in next month's $A C E$


## Stuich chnt

## OAETE THITMG ETHIR THAN tif Rest....



# DATA EAST'S 

 -jisejos -1135y
## A SIX GAME ACTION PACKED <br> COMPILATION FEATURING

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## 

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# SCREEN TEST 



This month's Screen Test is just bustin' out all over with 16 -bit software - looks like the Amiga and ST owners are starting to get the choice and quality they've been asking for. But, just to remind us all that there's life in 8 -bits yet, our highest rated game of the month is on ....the Spectrum! Zooming onto a screen near you is Digital Integration's ATF, one of the classiest
 flight and combat simulators we've seen in a long, long time. And those 16-bitters will just have to eat their hearts out; ATF is 8 -bit only. But there's some lovely stuff around for Amiga and ST. Anco's budget Karting Grand Prix is a worthy - and noisy - rival to Super Sprint. Ere Informatique's Captain Blood combines snazzy French graphics with original and playable - game design. And Melbourne House's Xenon probably marks the state-of-the-art end of the line for 16 -bit scrolling shoot-em-ups. But it's not all fun out there. Check out Robtek's Kwasimodo for a creature from the land that time forgot; Spectrum Hunchback four years ago had to be better than this....

## And don't forget to consult our

 Updates pages on the latest versions of the latest games for your machine.

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## - THE ACE REVIEWING SYSTEM

If you're new to ACE, a word of explanation is in order about our innovatory reviewing system.

First off is the PIC. PIC stands for Predicted Interest Curve; it's an easy-to-see representation of how long we think your interest might be held by a game. Briliant coin-op conversions will start high and then steadily tail off; games demanding some thought and planning will stay higher longer. Naff games start low and go nowhere but down.

The ACE Rating is a figure calculated to show the area underneath the curve. It's the games overall score, and is marked out of a 1000 . Any game which scores over 900 is 'ACE

Rated", and is pretty damn good - see ATF for an example this issue.

As well as an ACE Rating each separate version of a game reviewed gets its own version box, giving you details specific to that version and a score for grpahics, sound, fun factor and IQ factor.

These last two categories are there to give you an idea of whether the game demands much in the way of thought, is instantly enjoyable, packs an exciting punch, and so. A high IQ Factor does NOT necessarily mean that the Fun Factor will be low. ATF for example, scores a very reputable 6 on IQ and 9 on Fun Factor; it's
not just great fun, but something that also requires more than a little thought.

Release boxes on each review tell you how much the game costs on the different formats, and when they should be in the shops. Bear in mind that we can only pass on what the software houses tell us as to the date of arrival of a game. "Imminent" means that that version should be in the shops by the time you read the review.

Each game is reviewed by one main reviewer, but is played by at least three of the ACE team; the final ratings and judgement are the considered opinion of us all.

## KARTING GRAND PRIX

## ANCO get on the grid

RACING games have been coming at us fast and furious of late, but this karting caper from Anco is stlll worth slowing down to have a look at. Not only does the gameplay compare very favourably with the likes of Super Sprint, but the price should prove very attractive as well.

As with other games of the genre you view the action from above. There's a choice of 8 tracks, starting with a fairly comfortable circuit and becoming progressively more tortuous. Control is, unfortunately, by means of joystick only. Since you have to press for-

ward to accelerate, sideways movement can be $\alpha$ bit of a problem. In the early phase of your karting career youll inevitably spend more time crashing on the grass than racing round the track. A few laps of practice should see you giving the drones a run for their money.

Assuming, then, that you can actually make it round the various circuits the gome should provide lots of fun - especially in twoplayer mode. It's very well executed and, at the price, should be investigated.

- Pete Connor


You're going flat out, but that computer drone has got you lapped

## Amiga Version

Excellent graphics and even better sound make this very smooth indeed. Revving noises and braking, in particular, are almost - but not quite - as good as the real thing. While the view from above doesn't give the graphics the cance to be outstanding, they are more than adequate for the job. And then you've got a really groovy heavy-metal guitar on the loading sequence..

| GRAPHICS | 7 | IQ FACTOR | 2 |
| :--- | :--- | :--- | :--- |
| AUDIO | 9 | FUN FACTOR | 8 |

ACE RATING 844


Takes a little while to get control, but after that you'll want to do a lot of laps.

# JET BIIE SIMULATOR 

Watersports CODEMASTERS style

NOTcontent with releasing a string of high quality budget games, Codemasters have now introduced their Plus range.

For just a couple of extra pounds, the player gets two versions of the same game. One version is standard, the other is a version for expert players. You can of course forget about the standard version and just play the expert version, if you so desire.

Jet Bike Simulator is one such Plus game and the player has a choice of three settings - lakes, coastiine and dockiand. On the standard version one or two players compete to finish the course (weaving in and out of the buoys in the correct order) within the time limit. For the expert levels you have the same courses but you have to finish the race

|  |  |  |
| :--- | :--- | :--- |
| RELEASE BOX |  |  |
| SPEC | $£ 4.99 \mathrm{cs}$ | OUT NOW |
| AMS | $£ 4.99$ cs | OUT NOW |
| No other versions planned |  |  |
|  |  |  |

in at least third place (there are either two or three computer controlled drones, depending on whether youre playing solo or with a friend) to qualify for the next course.

The game plays extremely well and is very addictive, falling somewhere between BMX and Grand Prix Simulator in style. The standard version of the game is a shade on the easy side, but the addition of extra courses and the expert level means youll be playing this for a long time to come.

- Andy Smith



## Spectrum Version

Colourful screens, but it's sometimes hard to distinguish between the individual jet bikes. Gameplay is great although the collision detection is ever so slightly out. This shouldn't spoil your fun too much though.

```
GRAPHICS
7 IQ FACTOR
AUDIO
3 FUN FACTOR 8
ACE RATING 819
```


## Amstrad Version

Very similar to the Spectrum version, with a touch more colour. Again the collision detection's slightly out but it won't spoil your enjoyment.

## GRAPHICS 7 IQ FACTOR <br> AUDIO <br> 4 FUN FACTOR 8 <br> ACE RATING 825

## PREDICTED INTEREST CURVE



ROGUE computers cre favoured subject matter for scenario writers, and those at Melboume House are no exception. The computer in Roadwars was responsible for maintaining the many roadways that linked the moons of the planet Armageddon. Since the computer went haywire, the roads have have been unsafe to travel, so it's down to you to restore order.

The player takes charge of one of two Battlespheres (your computer or a friend takes charge of the other) and the game involves travelling down a roadway and blasting away the malfunctioning panels that appear at the side of the road. The offending panels are easy to spot because

they are of a different colour and usually come in poirs, one on either side of the road, with a huge electric arc between them. Destroying one of the panels will remove the arc but youll have to clear each roadway of all the disrupted panels before the exit appears and you can progress to a different. horder level.

These arcs are the least of your troubles, however - you also have to contend with various objects found on the roadways. These other obstacles include spikes, small balls that turn into spaceships, and satellites that appear at the roadside. All these hazards are destructive to your Battlesphere if you should happen to run into them with your shields down.

To aid you with your task you have a laser cannon with which to shoot out the panels and some of the hazards. But the

## Spectrum Version

There are no drones in the Speccy version, but your main cannon gets a higher rate of fire every time you run over an arrow icon. Graphics are good but sound effects are nothing special. Generally the game plays a lot better on the Spectrum than it does orl the Amiga, which just goes to prove that pretty graphics alone do not make great games.

GRAPHICS 7 IQ FACTOR 1 AUDIO 4 FUN FACTOR 7 ACE RATING 715

# ROADWARS 

MELBOURNE HOUSE let the sparks fly


SPECTRUM - Good graphics and better gameplay.


AMIGA - Very good looking, very hard to play
laser can only be operated with your shields down. Indiscriminate fire will not only remove the offending panels, it will remove any panel. Once you've only got a few pan-

## Amiga Version

The graphics are very good for the most part, and sound is satisfying. The choice of control method spoils the game to a certain extent, making it very tough to get into. As a direct result of this you could find yourself getting fed up with it sooner than you might have done.

## GRAPHICS

7 IQ FACTOR AUDIO 6 FUN FACTOR

ACE RATING 635
els left on either side of the road it becomes very difficult to dodge the hazards and remain on the roadway, so caution when firing is recommended.

Extra weapons are available to help you with your task - whoever manages to run over an arrow icon in the road is graced with $\alpha$ drone that orbits his Battlesphere. The more arrows you manage to run over, the more drones you get, but if you lose one of your three lives you also lose any benefits you might have collected.

There's certainly plenty to keep the player busy in Roadwars but the game seems to be lacking something in the playability department. Control of your sphere is extremely difficult, and even if you master the controls you could find the fun soon disappears.

- Andy Smith



## MACH 3

## 3D blasting from Loriciels

WHENhis gal is slowly dying because of a spell cast by a nasty sorceror, a man has little choice but to strap himself in to his Mach 3 plane and shoot the nasty creep.

That's the excuse for this shootem-up from France, featuring the usual high stan-


There you go-zooming across those mini-volcanoes and exploding mines.

| RELEASE BOX |  |  |
| :--- | :--- | :--- |
| ATARI ST | $£ 19.99 \mathrm{dk}$ | OUT NOW |
| AMS | $£ 9.99 \mathrm{cs}, £ 14.99 \mathrm{dk}$ | OUT NOW |
| IBM PC | $£ 24.99 \mathrm{dk}$ | IMMINENT |
|  |  |  |

dard of graphics we've come to expect from across the Channel. The sorceror in question is one Stax, the girl the lovely Gwendoline (more of her anon.)

## Amstrad Version

Graphics consist of rather murky purples and yellows, and Gwendoline doesn't, of course, chat you up - but it's still pretty playable and those comets behave themselves better than on the ST version.

| GRAPHICS | 6 | IQ FACTOR | 2 |
| :--- | :--- | :--- | :--- |
| AUDIO | 7 | FUNFACTOR | 6 |

ACE RATING 622

## Atari ST Version

The highlight of the ST Mach 3 is undoubtedly the digitised speech of what Loriciels claim is a lass from the Folie Bergeres. When you get a High Score she congratulates you with an ecstatic 'Oh, boy!', so it's one game in which you might be tempted to try for points rather than progress. Graphics are very neat, but there are some annoyances in the gameplay - in particular the often unavoidable comets.

## GRAPHICS <br> AUDIO <br> 7 IQ FACTOR 2 <br> 8 FUN FACTOR 6 <br> ACE RATING 665

Mach 3 is a multi-stage 3D blast. Your ship - a corrugated projectile - flies into the screen. On the ground ore mini-volcances spurting lava, and mines - fly into these and you die, shoot them and you get extra points.

Enemy ships make an appearance, zooming in from the distance, and sooner or later you'll come up against the flaming comets - very difficult to avoid. Bonus points are earned by flying through 'tunnels' consisting of goalpost-like constructions.

A similar method gains you access from the first, lunar-like landscompe, to the second scenario, where it is night and you can have a shot at the floating green head of Sfox himself. Get through that and you continue to stages that are basically similar, even if the graphics are slightly re-jigged.

Although it impresses with its graphics, Mach 3 fails to really grip as a game. the action is too repetitive, and the challenge not quite tough enough or interesting enough.

- Pete Connor


Pretty enough to get you interested, but it isn'! going to have too much long-term challenge.
...TRAZ

## CASCADE knock their balls around

## TRANSFORMABLE Arcade Zone LE is rather a

 flash title for yet another Breakout clone bashing its way onto the market. Is there anything left in this 14 year-old genre to generate excitement? Or are Cascade mere-| RELEASE BOX |  |  |
| :---: | :---: | :---: |
| C64/128 | £9.95cs, $£ 14.950 \mathrm{k}$ | OUT NOW |
| SPEC | £9.95cs | MMINENT |
| AMS | £9.95cs, ¢14.95dk | IMMINENT |
| IBM PC | £19.95dk | IMMINENT |

ly flogging a dead horse?
Well for a start, Traz offers the player the chance to compete simultaneously with a friend in attempting to clear the 64 screens. Secondly, Traz offers the player a multitude of bats with which to deflect the ball and destroy the bricks. These come in a variety of styles - some screens even provide the player with two bats. One moves vertically against one wall while the other moves hori-
zontally against another. Vertical joystick movements move one bat and horizontal joystick movements move the other. It's terifying stuff, and as if that wasn't enough, in two player mode the control of the players' bats changes randomly - ifs a real reaction test as you line yourself up to deflect a ball only to have the bats suddenly change.

When you've got up to four bats on screen and a multitude of balls whizzing everywhere things can become very confus-


Just one of the 64 reaction-testing screens. You'll need superb handeye coordination if you hope to clear the other 63 as well.
ing. It youre used to breakout games that give you really helpful bonuses to equip your ship with missiles etc, then some of the wacky benefits available in Traz just have to be seen to be believed.

Cascade have managed to produce a game that is not only addictive but is full of wacky fun.

- Andy Smith


## C64 Version

The screen designer teature adds an extra element to an already entertaining product. The graptics are colourtul and well-drawn and the animation is smooth.

GRAPHICS 7 IQ FACTOR 7 AUDIO 7 FUNFACIOR ACE RATING 789


GRUBis the root of all evil in this very pretty and smoothly scrolling shoot and collect game. Overpopulation of our planet has led to the construction of an enormous space station housing thousands and producing food for Earth. Problem is, those nasty aliens have taken over. And guess who's got to clear up the mess?

Northstar's a smooth-moving sideways scroller. Equipped with your extending robotic arm you have to zip along and zap the

| RELEASE BOX |  |  |
| :---: | :---: | :---: |
| AMS | £9.99cs, £14.99dk | OUT Now |
| SPEC | £7.990s, ¢14.99dk | IMMINENT |
| C64128 | ¢9.99cs, ¢14,990dk | IMMINENT |
| ATARI ST | £19.990k | APRIL |

aliens. Along the way there are bonuses and extra weapons to be collected by smashing cylinders and collecting their contents as they float up the screen

Whenever you foil to smash an alien. and make contact instead, youre thrown off the runway and into the moat which runs alongside. This sometimes adds an unwelcome spot of frustration to the proceedings, as it's not always possible to avoid the aliens. Fortunately, you're not sent all the way back to the beginning of the game.

The extra weapons you can collect include such useful things as smart bombs, a vertically-firing laser and invulnerability. But be warned - these extras are none to easy to find.

# RESCUE MISSION 

## SEGA shoot-to-kill

behind a smatt bomb. Shoot this and all the on-screen baddies bite the dust.

Having your finger on the trigger and the lives of your chums in your hands can be great fun. It's a real shame that the game's too easy to be anything like a lasting challenge. Even on the hardest stage it shouldn't take too long to master. Terrific fun that's short-lived.

- Andy Smith


Pump that cart, rescue that soldier, waste those badies.

## Sega Version

The graphics are very good, but the music is monotonous. The Light Phaser periorms well during the game but the overall design of the gun leaves a bit too be desired.

## $\begin{array}{llll}\text { GRAPHICS } & 8 & I Q F A C T O R & 2 \\ A U D I O & 6 & \text { FUN FACTOR } & 9\end{array}$

ACE RATING 739

## PREDICTED INTEREST CURVE



Terrific fun that doesn' last long enough.

## NORTHSTAR

## GREMLIN scroll sideways

Northstar is by no means an original game; it's got elements of Exolon, Gryzor and


Sliding around and making good use of your extending robotic arm.

Green Beret in there. But it's very well put together and provides a demanding shoot-em-up challenge.

- Pete Connor


## Amstrad Version

Excellent, colourful graphics mean that Northstar is very pleasing to look at. Sound doesn't quite match the visual flair, but there's a jaunty enough theme tune. Your character is very nicely animated and the way he slides around when stopping is particularly cute

| GRAPHICS | 8 | IQ FACTOR | 2 |
| :--- | :--- | :--- | :--- |
| AUDIO | 6 | FUNFACTOR | 7 |

## ACE RATING 680



THINGSseem to be stirring at what was once Argus Press Software and is now, somewhat grandiloquently, named Grand Slam Entertainment.

Basically, Brian, they seem to be bringing out some decent stuff. Following the passably good Red October, we now have the passably better arcade adventure Terramex.

The very words 'arcade adventure' may bring you out in goosepimples as you remember all those wacky pick-up-and-use games of yore, and to be honest, Terramex isn't exactly the most original game you'll see this decade. But it is pretty enough (on 16 -bit versions, at least), funny enough and
just about tough enough to tickle anyone's fancy.

The plot involves you in the search for the brilliant but scomed Professor Eyestrain. Since delivering his warning of the arrival of a. literally, earth-shattering asteroid he's gone AWOL. Not surprising since nobody took him seriously. Now, of course, that asteroid is on its way and only Eyestrain can save the world.

At the beginning of the game you are given the choice of playing one of four characters, each of them the kind of national stereotype we've come to know and love: Fortisque-Smith, the pith-helmeted Englishman: Wu Pong, the diminutive Chinaman,


AMSTRAD - Fortisque-Smilh on his flying hoover, dodging some of the nasty pterodactyls.

## RELEASE BOX

| AMS | $£ 8.95 \mathrm{cs}, £ 13.95 \mathrm{ck}$ | OUT NOW |
| :--- | :--- | :--- |
| SPEC | $£ 8.95 \mathrm{cs}$ | IMMINENT |
| MSX | $£ 8.95 \mathrm{cs}$ | IMMINENT |
| C64/128 | $£ 9.95 \mathrm{cs}, £ 14.95 \mathrm{dk}$ | IMMINENT |
| ATARI ST | $£ 19.95 \mathrm{dk}$ | OUT NOW |
| AMIGA | $£ 19.95 \mathrm{dk}$ | OUT NOW |
|  |  |  |

## Atari ST Version

Very neat and smooth, with extremely pretty graphics. The sound is jolly enough, if not outstanding.

```
GRAPHICS 9 IQFACTOR AUDIO 7 FUNFACTOR ACE RATING 808
```

| Amiga Version |
| :--- |
| Arettiest of those we've seen. The cartoon graphics <br> suit the machine very well indeed, and the jaunty <br> music provides a suitably...er..jaunty accompani- <br> ment. <br> GRAPHICS 9 IQ FACTOR 7 <br> AUDIO 8 FUN FACTOR 7 <br> ACE RATING 808    |

## Amstrad Version

Graphics are colourful enough, but are just a little on the blocky side and, hence, a trifle indistinct. The sound's no great shakes either - but these drawbacks don't prevent it from still being an enjoyable and playable game.

```
GRAPHICS 6 IQ FACTOR AUDIO 6 FUNFACTOR ACE RATING 703
```




AMIGA - Down in the undergound cavern, Wu Pong dances along with his magic flute. Is it going to save him from those nasty snakes?
and so on to include $\alpha$ Frenchman and $\alpha$ German.

The different nationalities have a purpose in making the game more varied, since certain objects can only be used by certain characters. What possible use, for instance. would Wu Pong have for a cricket ball? And which character might just be able to do something with it?

Once your character is selected, off you go into the strange landscape of the game. First of all you will light on a vacuum cleaner, assuming you avoid one of the many man-eating plants that proliferate. The hoover takes you flying up to onother screen composed of clouds and pillars, where there are bags more objects to accumulate. Finding $\alpha$ brolly allows you to come back to earth and even nip underground - but unless you've found a certain object along the way, you won't get past the nasty
snakes.
In order to carry all these objects you have a pretty large contingent of native bearers (more stereotypes). To select an object for use you scroll along the bearers and then pick the thing you want. This is $\alpha$ fairly smooth method, but can cause a few flutters if you need to swap objects when you're under pressure.

The fun of Terramex comes from its combination of exploration and deduction. While you may find certain areas easily enough, you won't be able to get through them without the right object, and working out exactly which one you need is not always a simple task.

While it's a little old-hat in terms of inspiration, the game is accomplished graphically and musically; it's fun to play even if youre not getting very far.

- Pete Connor


OGRE IS AVAILABLE FOR：COMMODORE 64／128．ATARI XE／XL DISK $£ 19.95$ ．IBM，APPLE，ATARI ST，AMIGA


AND MAC DISK £24．95．
AUTODUEL IS AVAILABLE FOR COMMODORE 64／128 ATARI XE／XL DISK $£ 19.95$ ．APPLE，ATARI ST DISK $£ 24.95$ MicroProse Ltd．， 2 Market Place，Tetbury，Gloucestershire GL8 8DA．UK．Tel：（0666）54326．Tix： 43422 MPS／UKG．


# Ali Gonisit 

Rev up your engine and take to the skies to save your pountry. Hunt down the enemy Spitfire
 and build upy your log of kills as you rise through the ranks to the elite of the RAF.


The galary. Set your co-ordinates and hit the hyperspace button, then power through a valley (inset) in search of some extraterrestrial coversation.

# CAPTAIN BLOOD 

## INFOGRAMES graphic stunner

CONFS are what you're after in this space adventure/quest game from across the channel. Five clones to be precise, the only five still left to be collected out of the original 30 that resulted from an explosion in space some 800 years ago.

The player takes the part of Captain Blood and has to search a whole galaxy of planets in his Ark for his elusive replicas. The game revolves around interacting with various alien characters that can be found on certain planets. The interaction is effected by stringing icons that represent words and phrases into questions or answers, and then deciphering the aliens' replies.

While this is the backbone of the game, several other sub-games can be found within it. Once you have the co-ordinates of a planet where you think you may get help. you travel there by hyperspace and transfer down to the planet's surface where you suddenly enter an arcade-style sequence as you try to guide your ship over mountains and through valleys (with the aid of a direction indicator on the cursor) to locate the alien. You then 'interact' and hope that he/she/it com provide you with more information to cid you on your joumey.

There's certainly enough of a quest here to keep a fan of this game genre going for a long time. Thanktully, the game can be saved to disk which means you don't have to worry about completing it all in one go. If you like games that require real involvement and you think you could put up with


And here you've found someone to natter with.
some of the more repetitive aspects of the game, then Captain Blood could be just the sort of thing you're looking for. The game is surprisingly playable and extremely involving.

- Andy Smith


## Parlez-vous Izwal?

We should point out that we played the French version of the game. We are assured, though that no gameplay is to be altered during the translation of icons etc to English Infogrames say that the only differences in the English version would relate to extra features - notably more music, which can do nothing but add to the already high quality of the game.


## Atari ST Version

The graphics are among the best yet seen for the ST. Animation is super-smooth, and the various aliens are all superbly drawn. It's a treat to see a programme that seems to use the 16 -bit processing power of the ST to its full advantage.

| GRAPHICS | 9 | IQ FACTOR |
| :--- | :--- | :--- |
| AUDIO | 8 | 7 |
| FUNFACTOR | 8 |  | ACE RATING 887

PREDICTED INTEREST CURVE

A supertly-presented game that will keep you involved for a long time to come.

# THE ARTOF CHESS 

SPA make their move

UNTLLrecently Amiga chess players had only EA's Chessmaster, good though it was. But now we have another contender at the board, in the shape of The Art of Chess. How does it shape up? Can it dethrone Chessmaster?

Probably not. The problems with program have nothing to do with its ability at chess, but rather with its sprites. The Art of Chess just doesn't look good enough. whether in two or three dimensions. In 3D visibility is very poor: with a back-row piece, pawn and knight in-line it's extremely hard

|  |  |  |
| :--- | :--- | :--- |
| RELEASE BOX |  |  |
| AMIGA | £24.95dk $\quad$ OUT NOW |  |
| No other versions yet |  |  |
|  |  |  |

to pick out the individual pieces.
While 3D displays are nice to have, none of them are perfect, and most players will probably prefer to use the 2D option. Unfortunately. The Art of Chess disappoints here as well. While the pieces are now clear enough, their design is unattractive, with top-heavy rooks and knights and a king
whose design just doesn't give him the importance he deserves.

In other respects, though, the program has everything you could want. It talks - if you want it to: you can rotate the board; force moves: play through a library of classic games; change sides. You can also change the default colours to other settings - thus producing a much more visually pleasing display than the one you start out with.

We haven't been able to play off this program against Chessmaster, so we can't comment definitively on their relative playing


The Art of Chess in $3 D$ mode. Note the 'Time Travel Gadget', allowing you to take back moves, resume the game, or restore moves.
strengths. But The Art of Chess will detinitely give you a very good run for your money. And as well as its three ordinary settings you can also customise the level of play by setting response time and aggression meters.

The Art of Chess has some very attractive features which make it well worth $\alpha$ look, but sadly it is let down by a lack of attention to the details of display.

- Pete Connor



# NIGEL MANSELL'S GRAND PRIX 

## Turbo boost the MARTECH WAY

FOLLOWING poor ol' Nigel's very near miss last year in the World Championship, everybody will be rooting doubly for him agoin this year. Martech especially so, because a successful season for Nigel could filter back to Martech's bank balance.

So does the game get into top gear? And does it have the fuel to keep in the running? Quite simply, yes. With 16 circuits modelled


Blazing a trail around the Japanese circuit of Suzuka. Lets hope that tyre holds.
on the real tracks and with anything between 43 and 82 laps per race, a season's going to take a long while to complete. Thank heavens for save gorme options. If the screen display looks unrealistic to you, then that's beccuse all the information that is nowadays available to the driver (through computer and radio links) is displayed on this panel. So now when messages flash informing you that every corr except yours has pulled into the pits for a tyre change, you can reconsider your strategy.

## Spectrum Version

Graphics are monochrome (though the colours do change for each course) and are well drawn. Sound is surprisingly good considering the limitations. That save game option means you will keep you playing for a long time to come.

## GRAPHICS 7 IQFACTOR AUDIO 8 FUNFACTOR 7

ACE RATING 795


Gameplay is satisfyingly tough, and incorrect use of gears can have you wasting valuable power and fuel, so it's as well to practise with the cor for a while before you start on some serious competing.

Despite some rather dubious collision detection (usually to your advantage for a change) during the races, the game will certainly provide you with a challenge, but not one that is impossible to meet. A game for racing fans who look for a long-term overall challenge.

- Andy Smith



## AFIER BURNER

## The right stuff from SEGA?

SKYhigh, mindless blasting has always been a successful coin-op formula, and its no wonder then that After Burmer has had such a good run in the aroades. The action is manic and constant; the graphics superb. Add to that a huge sit-in cabinet that rocks and rolls all over the shop and youve got one mean (and expensive) arcade console. Take away the cabinet and make a stand-up version and the game loses something. Ifts still got all the action, sound and graphics but it's not so teal any more.

| RELEASE BOX |  |  |
| :--- | :--- | :--- |
| SEGA | £24.95cr | OUT NOW |
| Micro versions from ACTVISION planned |  |  |
|  |  |  |

Convert the game to a home console and does the game lose anything else? Superficially no: in reality, yes. The whole game is still present and the plot hasn't changed. Fly your F-14 Tomcat through stage after stage of enemy teritory and try
to wipe out as many of the enemy fighters that appear from in front and behind as possible. Youre still armed with a front firing machine gun (aimed with the aid of a small on-screen square that moves with your plane) and missiles (fired when your sights lock-on to an enemy plane or missile). Now that all sounds good, so where's the problem?

The lack of playability is the game's biggest problem - the aroade version was diabolically tough until you got used to the controls (or where the sate points on the screen were) but that is not the case with the


In the thick of the action. Don't even consider ejecting.
console version. The action's still manic and constant but the game's nowhere near as tough and it loses most of its addiction very quickly. After Burner on the console is one of those games you may come back to time and time again, but only for short spells.

- Andy Smith


## Sega Version

As seems to be the case with most Sega games, the graphics are very good but the music is dull. Playability problems mar an otherwise competent arcade conversion, and don't expect your grey matter to be too severely taxed.


ACE RATING 702


## THE KRYPTON FACTOR

## Accept the challenge from TV GAMES

DEFINTELY not a game for one player only, this program is a brave but uninspiring attempt to convey the excitement (if any) of the popular TV series.

Up to four players choose a game character from a list of eight, represented onscreen by a digitised portrait and a brief biography. You can enter your own occupation, age, and home town if you want, but these details don't reappear in the game.

There then follow six challenges, each one a separate load (best make sure you have a tape counterl) testing your powers of observation, short-term memory, physical control, and general knowledge. At the end of each round the scores and running total


AMSTRAD - Piloting the Ergobuggy involves lapping different keys at different rates - a test of co-ordination that sounds difficult in theory but disappointingly easy in practise.
are shown and at the end of the game there's a brief victory display (just a static screen with a trophy) for the winner.

The physical control sections involve tapping different keys at different rates simultaneously, either to propel an 'Ergobuggy' across the screen, or to tackle the assault course'. All the sections are dominated by strict time limits, except the 'Observation Round' in which you spot differences in pictures and short stories. The problem here is not too little time, but too much of it - those not playing at the time have nothing to do.

This game offers a modicum of fun to a family of four who want to gather round the monitor. You could play with less participants but it wouldn't be as enjoyable. For the soloist it's a waste of time.

- Steve Cooke


| RELEASE BOX |  |  |
| :--- | :--- | :--- |
| SPEC | $£ 7.95 \mathrm{cs}$ | OUT NOW |
| AMS | $£ 7.95 \mathrm{cs}, £ 12.95 \mathrm{dk}$ | OUT NOW |
| C64/128 | $£ 7.95 \mathrm{cs}, £ 10.95 \mathrm{dk}$ | IMMINENT |
|  |  |  |

## Amstrad Version

Not very exciting graphically and lacks sound during play. Some sections would benefit from a joystick option. The 464's inbuilt tape counter makes the multi-load a little more bearable, but the combination of loading delays and waiting for others to take their turn does nothing to enhance gameplay.


ACE RATING 641




ATARI ST - Coming up to the end-ot-level guardian, and if's a good job you've got some extra firepower. Hii him enough times (insef) and his nose will llash - now go for his mouth.

## XENON

## MELBOURNE HOUSE have the last word?

be a problem until you learn their movement patterns, and the majority of the bonuses appear at the same place each game, so it's not too difficult to plan your route. The Bitmap Bros have managed to strike that fine balance between frustration and addiction, and have produced a wonderful game. It's just a shame all this sort of thing has been seen and done before.

- Andy Smith


## Amiga Version

The sound is superb, the graphics are wonderful, and the gameplay is terrific. Xenon must be one of the best coin-op conversions to appear on the Amiga (not surprising considering the actual coin-op version is based around Amiga boards). A very competent albeit unoriginal game.

## GRAPHICS <br> AUDIO <br> 8 IQ FACTOR 2

ACE RATING 869
Atciri ST Version
The graphics are superb, the installations and explo-
sions are wonderfully-drawn. Sound consists of
some atmospheric tunes and great explosion effects.
Control of your craft is good, though you can find
yourselt changing craft at a crucial moment simply
because you were 'waggling' the joystick.

| GRAPHICS | 8 | $1 Q$ FACTOR | 2 |
| :--- | :--- | :--- | :--- |
| AUDIO | 8 | FUNFACTOR | 8 |

ACE RATING 863

COMPETENT ${ }^{\text {16-bit programmers are }}$ in short supply at the moment (all that's bound to change soon) so it's jolly nice to see a product coded by not merely competent, but good, programmers (the Bitmap Brothers). These chaps at least have some inkling as to how to use all that extra memory etc to its full advantage. Whether they should have demonstrated their talent with yet another vertically scrolling shoot-em-up is another matter.

Considering it's a coin-op conversion, the standard-issue scenario comes as no surprise - fly your craft through four stages of alien

| RELEASE BOX |  |  |
| :--- | :--- | :--- |
| ATARIST | $£ 19.99 \mathrm{dk}$ | OUT NOW |
| AMIGA | $£ 19.99 \mathrm{dk}$ | OUT NOW |
| No otherversions planned |  |  |
|  |  |  |

territory and try to destroy as much as possible. The first sector has the player in charge of a space craft that can alter between a ground vehicle (for destroying ground-based aliens and installations) and an airborne fighter craft (for flying attackers). Changing between craft is simply a matter of giving your joystick a quick waggle (or if that poses problems you can just hit the space bar). The overall idea is to simply survive to the end of the sector and destroy the end-of-level guardian. Lots of extra weapons are there for the taking $x x x x x x$ (multiples, laser cannons, extra shields etc) - simply destroy certain


AMGA - At the start of level two - with no extra weapons as yet, you've certainly got your work cut out.
installations or the odd wave of aliens and collect the resulting symbol.

If the first sector gave you the choice of ground or airbome craft, the second gives you fighter craft...or fighter craft. The idea again is to survive the onslaught from the various installations and aliens occupying what looks like a tunnel you're flying through.

The third section is similar to the first, again with a choice of craft, and the fourth is a real race against the clock as you try to reach the end of the section. Despite the dull scenario, where Xenon really scores is in it's playability. The end-of-level guardians can

PREDICTED INTEREST CURVE


A well-presented game that provides a fair slice of lasting interest.

## uan hepant - Intellimence



The state of the war, on Rookie level; you're purple, allied torces are green and the enemy's red.


Arming up with Maverick homing missiles.


DIGITAL INTEGRATION fly out
Ready for take-off!

LOCKHEED fans must be having a ine old time of it just at the moment: scarcely have MicroProse got their F-19 game Project Stealth Fighter airborne when Digital Integration wheel this one out of the hangar. Based on the Advanced Tactical Fighter, the F-19's stealthy successor, the game's something of a departure for DI. Rather than producing another simulation in the mould of Tomahawk or Fighter Pilot, this time DI have gone for some very arcade-ish blasting action combined with the strategic depth you'd more normally associate with them.

The move away from slavish simulation takes you out of the cockpit so that you view your plane from above and behind. The viewpoint is fixed so that the horizon stays
level no matter how you climb, dive or bank, and is far enough back that you can see enemy interceptors on your tail. Aside from the joystick your only circraft controls are the keys for throttle, undercorriage up or down, and two very handy auto-pilot modes. The first of these, terroin-following, makes landscape hugging a cinch while the second lands your plane automatically for you.

Once you've got the hang of flying steer, dodge opposing fire and don't fly too fast at low level - you're ready for the game's real guts: combat. The wrap-around game 'world' of sea, snow, beaches and scrubland is the setting for a full-scale war, your task being quite simply to swing the odds in your own side's favour. You won't be given mission objectives: youll have to work out priori-

| RELEASE BOX |  |  |
| :--- | :--- | :--- |
| SPEC | $£ 8.95 c \mathrm{cs}, £ 12.95 \mathrm{dk}$ | OUT NOW |
| AMS | $£ 8.95 \mathrm{cs}, £ 13.95 \mathrm{dk}$ | IMMINENT |
| C64/128 | $£ 8.95 \mathrm{cs}, £ 12.95 \mathrm{dk}$ | IMMINENT |
|  |  |  |

ties from intelligence reports and your own sightings, arm up appropriately and get stuck in.

Once you've loaded up with cannon shells for air-to-air combat, ASRAAM and Maverick missiles for surface targets and fuel to get you there, you can home in on a suitable foe taking your bearings from your onboord computer. Enemy interceptors will


There are enemy tanks 139 km away - almost in range - but there's a fighter on your tail!


Out over the sea, flying past an enemy warship. Time to turn and strate it?
harass you along the way, pouncing on you from behind or bearing down on you from dead ahead, guns blazing. Camnon shells will finish them off nicely, but being of little strategic value interceptors are often best simply avoided. Your real targets are the enemy's ground and sea forces, air bases, communications centres and - most important of all - the factories he depends on to replace his losses.

Once you're within 100 km or so of one of these you can let fly with a Maverick: they home in of their own accord, and com usually do the job without your ever actually seeing the target. If you've loaded up with ASRAAMs instead youll have to close in until you can see the target, and then guide the missile in manually. This means a
greater cost in fuel and (to start with) an awful lot of misses, but since they weigh far less ASRAAMS can be an attractive choice for short range heavy-duty missions.

As you gain in experience you'll soon find that, even on the lowest of the game's eight levels of difficulty. you con't defeat the enemy simply by destroying the targets intelligence reports tell you about. The only way to make real progress in the game is to fly into known enemy hotspots - you can pinpoint these on the map before each sortie and find the targets yourself. The onboard computer will inform you of enemy installations or forces as you approach them, and you can then proceed as before.

Interceptor shots will decrease your engine power and damage other systems


A bar graph shows the balance of power

## Spectrum Version

The landscape rushes beneath you very impressively indeed, the ground targets are well-drawn and the 128 K sound is spot on. A great all-rounder then, and a good move for DI.

## GRAPHICS 9 IQFACTOR AUDIO 6 FUN FACTOR 8

 ACE RATING 956

Back at base, it's debriefing time.

until you're forced to land for repcirs or brought down altogether, but they arent the only hazard. SAMs (Surface-to-Air Missiles) will wreck you outright if you don't hit the jammer key in time, and since losing three planes ends the game regardless of the way the ground war's going it's vital that you stay alert.

Though the size of the task is limited - the game world is always the same size whatever level you play on - the initial disadvantage you start at steps up from nothing on Rookie to drastic on the ATF Ace setting. giving plenty of lasting interest. It's got the same instant addiction and strategic depth of Durrell's old Combat Lynx wedded to state of the art graphics: very playable stuff

- Andy Wilton


## PSCREEN test shorts

## CHAIN REACTION

## DURELL clean up the mess

NUCLEAR power's always a good excuse for a game. In this one the Anti-Nuclear party have done all sorts of nasty things in the reactor, and you must sort out the mess, collecting and then disposing of the radioactive rods. It's got a clever almost-3D view and interesting jet-pack

| RELEASE BOX |  |  |
| :---: | :---: | :---: |
| C64 128 | 2699cs, [9 99dk | OUT NOW |
| SPEC | ¢599cs, £1299dk | OUT NOW |
| AMS | e699cs, ¢12 990 k | OUT NOW |


propulsion mode. Graphics are neat but not special. An enjoyable game that looks just a little old-fashioned.

- Pete Connor



## ZYBEX

## Action-packed blast from ZEPPELIN

| RELEASE BOX |  |  |
| :---: | :---: | :---: |
| C64/128 | 2299cs $\quad$ OUT NOWI |  |
| No other versions plamed |  |  |
|  |  |  |

entertcining two-player option, Zybex is a bargain blast to investigate.

- Pete Connor



## CHECKMATE

## Cheap chess from PRISM



16-BIT chess at this price has got to be worth considering. While Checkmate doesn't have the 3D sophistication of some programs, it has a clear enough 2D dis-

## PREDICTED INTEREST CURVE



ACE RATING 665
play - and, if you so desire, you can redesign the pieces. It's by no means as strong as some fullprice ST chess progs (see last month's Brain Games article) but it's certainly cheap and cheerful.

- Pete Connor

RELEASE BOX
ATARIST E9.950k OUT NOW

No other versions plarned

## KWASIMODO

ROBTEK'S humpty dumpty?


THIS arcade action game puts the player in charge of Kwasi as he struggles through 25 levels in the attempt to rescue Esmeralda. The graphics and animation are extremely poor. Sound too is very bad and the game itself is

no fun to play. Definitely one to be missed.

- Andy Smith



## SPACE RANGER

## Environmentally sound Defender-clone from MASTERTRONIC

DFFENDED is still one hell of a gem, so DEFENDER we shouldn't dimiss derivatives out of hand. Space Ranger gives the humanitarian aspect of Defender a twist by turning the critters you must rescue into cutesy-wutesy mutated animals.

The action takes place on the planets of

| RELEASE BOX |  |  |  |
| :---: | :---: | :---: | :---: |
| AMIGA | £9.99dk | OUT NOW |  |
|  | No other versions planned |  |  |
| Amiga Version <br> Very pretty indeed, with tolerable rather than outstanding sound effects. If you have a joystick with two independent buttons you'll do OK; it can be tricky using joystick and space bar. |  |  |  |
|  |  |  |  |
| GRAPHICS 8 IQ FACTOR 2 <br> AUDIO 6 FUNFACTOR 7 <br> ACE RATING 745 |  |  |  |
|  |  |  |  |

the Beta Crucis system, where the evil Morgdanians are trying to abduct, enslave and destroy the indigenous lifeforms - all in aid of the racist religion they follow. You, as one of the Space Environmental Protection Rangers, have to save the critters.

You fly around in your space suit, armed with a laser pistol and carrying an endless supply of nets with which to save the wee beasties. The capturing is easier scid than done: while some Beta Crucians are sluggish


Down on Beta Crucis 3, the Morgdanian transporter has got a poor little critter in its beam - blast it, tree the beastie and then net it to score points and warm the cockles of your heart.
and earthbound, others will insist on flying around in circles or bouncing all over the place. Given your inertia and the fact that you'll have to use the spacebar to drop nets, this capturing can be a frustrating business.

And, of course, you haven't got things all your own way. Your radar display at the bottom of the screen shows not only the creatures you must rescue, but also the slaves who are carrying them to the Morgdanian transporter. Youll have to blast slaves while trying to avoid hitting the critters theyre carrying. As levels progress, the slaves get nastier and become more of a problem.

There's a good variety of creatures and landscapes in Space Ranger, all of them very prettly drawn. While the number of levels is pretty limited - to eight, in fact - the action gets fast and exciting enough to make this very denivative game worth a look.

- Pete Connor

PREDICTED HNTEREST CURVE


Easy to slip into and very ally while the tun lasts.
violin cases. Thompson subs they're all here in Mirrorsoft's latest and long-awaited addition to their Cinemaware range.

Don your pinstripe and spats and swagger down to the nearest speakeasy as this progromme takes you back to the good old, bad old, days of American gangster life in the early thirties. Capone has just lost his crown as king of the windy city and as a young ambitious hoodlum in the employ of the Northside Boss, it's up to you to goin control of first your gang and ultimately the city.

King of Chicago is one of those interactive movie type games that follows a central plot and allows the piayer to make crucial decisions at various points during the adventure. Most earlier attempts at this type of game have proved to be very limited (Slaine, Acoolade's Comics etc) but King of Chicago has been very well done. You can't bank on the character's reactions in any

## PREDICTED INTEREST CURVE



An entertaing game that you"lle enipy it you have at teast a 1 Mbldsk dive

# KING OF CHICAGO 

## MIRRORSOFT make you an offer you can't refuse

given situation and it's doubttul whether any two games you play will ever be exactly the same. You always have to plan your strategies for the game youre actually playing and not in the hope that the game will follow the same course as an eatlier attempt. Choosing your course of action involves selecting one of Pinky Callahan's (that's you, folks) thought bubbles. He then reacts accordingly. Entertaining stuff that does well to capture the flavour of the era as well as providing a foir challenge.

- Andy Smith


## Amiga Version

As Mirrorsoft point out on the cover of the packaging, the game's not recommended for the humble among us who only own a half Mb drive. You really do need either 2 drives or at least a 1 Mb drive to enioy the game's graphics and music without annoying bouts of disk swapping - which can be tedious to the point of ruining the game.

| GRAPHICS | 8 | IQFACIOR | 6 |
| :--- | :--- | :--- | :--- |
| AUDIO | 8 | FUNFACTOR | 7 |

ACE RATING 700

| RELEASE BOX |  |  |
| :--- | :--- | :--- |
| AMIIGA | £29.990k | OUT NOW |
| MAC | £49.95d | IMMINENT |
| ATARIST | £24.990k | SPRING |
| C641128 | £14.990 | SPRING |
|  |  |  |



The delectable Lola. Don't trust her though -dames is renowned fur runnin' out on ya, see.



SPECTRUM - In the jungle on level 1 , and it's not just the situation that looks ugly.

## PLATOON

OCEAN'S rumble in the jungle

V/INAM M'S vice-like grip on modern hardly surprising, but UK software spin-offs are rather tougher to figure out. Ocean's earlier forcy into South East Asion celluloid - the brainlessly violent Rambo - was no better than the original film deserved, but Platoon is a different kettle of fish. How can anyone cram a movie that centres round the struggle of good versus evil within the US Army into an arcade game?

| RELEASE BOX |  |  |
| :--- | :---: | :--- |
| C64/128 | $£ 9.95 c s, £ 14.95 \mathrm{dk}$ | OUT NOW |
| SPEC | $£ 9.95 c s, £ 14.95 \mathrm{dk}$ | OUT NOW |
| AMS | $£ 9.95 c \varsigma, £ 14.95 \mathrm{dk}$ | IMMINENT |
|  |  |  |

As you might have guessed. Ocean haven't really tried to: what they've tumed out instead is a multiload jungles-and-tunnels slugfest not a million miles away from Gryzor, with the Viet Cong obligingly standing in for those nasty aliens. As you work your way through the differing perspectives and control methods of the game's six stages, you're faced with search and destroy tasks based on sections of the film plot.

In the jungle maze of the first stage you have to find a box of explosives and dynamite $\alpha$ bridge, while fending off VCs and dodging their booby-traps. By ducking. jumping and firing you con avoid enemy bullets while hitting home with your own - if you've got sharp reflexes and good timing. that is. Jumping can also get you over tripwires and spider-hole snipers, but a hand


C64-Searching a hut in the level 2 village watch out tor booby traps!
grenade will get the job done here if you can spare one.

Once you've found and used the explosives it's on to a very brief stage two where, still in that flattened perspective, you have to search a VC-sympathetic village for vital equipment, namely a map of the tunnel complex under the village and a torch to explore it by. VC attackers are interspersed with innocent villagers, the former thoughtfully wearing battledress so as to stand out nicely. Shooting villagers carries stiff penalties so there's something of a 'Hogan's Alley' side to the action here, but mostly it's a matter of learning where the equipment is and getting to it. Once you've found the map, torch and the trap door into the tunnel system, stages three and four load in.

As you explore the flooded tunnels searching for VC weapons caches, attackers spring from the water wielding knives. Survival depends on reflexes alone: quick,
accurate shooting is essential if you want to come through alive. The soldier'seye view here heightens the tension but, as in the bunker defence sequence of stage four, the action is little more than target shooting and careful use of ammo.

Stages five and six are the last to load, offering another jungle sequence followed by grenade throwing. The scenario here has you blasting your own (very nasty) sergeant out of a foxhole so you can shelter there, but as elsewhere in the game the moral problems this involves don't get any further than the instructions: it's all just action once you're playing.

Film tie-ins tend to be a pretty miserable breed, but despite some gameplay grumbles Platoon does hang together pretty well even if it misses the point somewhat. The lives structure is interesting - for much of the game you switch between five different men each with his own health level to maintain. This helps add depth to some hectic arcadeish gameplay, while there is a real sense of the plot advancing. But the game does trivialise a serious subject, and you may find some aspects of it stick in the throat: the Viet Cong weren't Martians or robots to be shot out of hand, and it's disturbing that they should be treated as such. Who's next? The Contras? The French resistance?

- Andy Wilton


## Spectrum Version

Sluggish control responses and scrolling ruin the game's playability, while the garishly clashy display makes it unappealling stuff to look at. On 128K machines the game loads in one go, but multi-load was the least of the 48 K game's troubles anyway.

| GRAPHICS | 4 | IQ FACTOR |
| :--- | ---: | :--- | 4

## C64 Version

Though graphically impressive and very playable, this version's marred by a few nasty little bugs and some sloppy gameplay. Firing routine glitches mean your gun doesn't work when you're at the edge of a clearing, and changing personnel on stage two can accidentally kill villagers. Inevitable deaths add to the frustration too, so mind the blood pressure!

| GRAPHICS | 8 | IQ FACTOR | 4 |
| :--- | :--- | :--- | :--- |
| AUDIO | 7 | FUN FACTOR | 7 | ACE RATING 801



## THE TRAN: ESCAPE TO NORMANDY <br> ACCOLADE do the locomotion

V/TV La Francel As French Resistance VIV fighter Pierre Le Feu, your mission is to capture a train laden with priceless art treasures that Jerry intends to shunt to Berlin for the now inevitable surrender negotiations. You must then drive it to the town of Riviere to meet the Allies.

The game breaks down into three main sections - securing stations, securing bridges and driving the train.

| RELEASE BOX |  |  |
| :---: | :---: | :---: |
| C64/128 | £9.95cs, £14.95dk | OUTNOW |
| No other versions planned |  |  |

Taking stations and bridges puts the player into an arcade sequence as he tries to shoot either guards that appear at windows, or boats that scil past the train, depending on where he happens to be. Driving the train involves regulating speed, steam pressure,
furnace temperature and water levels, and during these sequences the player has a choice of four views: the engine cab, a map screen, and front and rear gunner views. The last two are for shooting down attacking enemy fighters. The map screen can be called up at the press of a key and allows the player to plan his route, taking note of which bridges and stations are controlled by which side, and where the sets of points are.


Keep your furnace topped-up to maintain speed.

## C64 Version

Graphics are well-drawn and animated. Gameplay is easy to get used to and the only worry is watching steam pressure etc while studying one of the other views (or shooting down planes). Real-time elements add excitement and make the game great fun - a shame then that it's too easy (even with three difficulty levels) to provide a lasting challenge.

## GRAPHICS 8 IQFACTOR AUDIO 8 FUN FACIOR

## ACE RATING 641

You start the game at midnight and have to reach Riviere before dawn. The Train manages to combine a small amount of strategy and planning with a fair old slice of arcade action. It's fun while it lasts, but it won't take long to complete the mission - all that's left then is to try for a higher score.

- Andy Smith



## TOURNAMENT OF DEATH

## INFOGRAMES go rifling through dungeons

LEEEnfield (a familiar name?) has got his back to the wall once again in this, the second of the Time Troubleshooter series. After his debut in the Prohibition-type game Space Ace, Lee is up against the evil Yellow Shadow yet agcin, but this time in an arcade adventure set in the 13th Century.

That Yellow Peril has nabbed the Holy Shroud and is preparing to destroy it, so it's up to lee to recover it. The forces of the Y.S. are guarding the Shroud in the castle of the Count of Savoy, and it's in this castle that the action takes place. To overcome the guards (which include bears) Lee has to resort to fisticufts, and two vertical meters at the side

| RELEASE BOX |  |  |
| :---: | :---: | :---: |
| Atari ST | £19.95d | OUT Now |
| C64/128 | £9.95cs, ¢14.956k | IMMINENT |
| IBM PC | £19.95dk | IMMINENT |
| AMS | £9,95cs, ¢14.956k | IMMINENT |

of the window through which you view the action represent Lee's health and strength. During a fight with a foe, the player has to waggle the joystick rhythmically to raise

Lee's strength and overcome the foe - of course all fights are detrimental to Lee's health and once the health meter reaches zero it's game over. Helpful shields and suits of armour can be found in various chests and cupboards cround the castle to help protect lee during fights though, so it's worthwhile finding them.

Using just a small window to display the action is a little odd but works well, and the gome can become quite addictive after a short while. On the whole it's an interesting arcade adventure that should keep you puzzling for some while.

- Andy Smith


## Atari ST Version

Though the window's small, the graphics in it are superb - well-drawn and very atmospheric. A tune that plays all the way through soon tends to annoy.. though, while the absence of actual sound-effects does noyhing to enhance the game. Gameplay takes a little getting used to, but poses no real problems. An unusual arcade adventure that's fun to play.

## GRAPHICS 8 IQFACTOR 5 AUDIO 5 FUNFACIOR 7

ACE RATING 776


Lee battles it out with a vicious-looking bear. Defeat the bear and you'll have the chance to search that chest.

presents


# MIRRDR NOW PLAYING AT A DEALER NEAR YOU 



## BALL RAIDER

## ROBTEK go in to bat

BREAKOUT clones still surface now and again, and here's one of the Amiga variety. You've got 25 levels to complete, each with superb backround graphics. There are some tricky screens to clear and your job's not made any easier by having to use a
joystick to control your bat. A good looker that unfortunately has no gameplay.

Andy Smith

PREDICTED INTEREST CURVE



## XR35

## ANCO's good-looking number

OVER-SENSITIVE controls spoil this fabulous-looking horizontally scrolling shoot-m-up. You're flying a space ship through a tunnel and under constont bombardment from various flying aliens. You've got to dodige their shots, and this is where the problems start. Crashing into any of the tunnel walls takes away one of your lives and the controls are

so sensitive youll find yourself hitting the walls almost every time you move the joystick. This makes the game a lot less playable than it might have been.

- Andy Smith


PREDICTED INTEREST CURVE


ACE RATING 450

## STRATON

## CRL look into the future



EXPLORATION shoot-em-up as you guide your droid through several levels of this futuristic cir terminal in an attempt to destroy the circuit breakers scattered throughout the levels. Great

| RELEASE BOX |  |  |
| :---: | :---: | :---: |
| C64428 | E9.95cs, [14.950k | OUT NOW |
| Noothe versors planned |  |  |

graphics and music help make this an enjoyable game.

- Andy Smith

PREDICTED INTEREST CURVE


## GRID START <br> ANCO hit top gear

RACING games aren't exactly ten a penny these days - at just under a tenner this one is pretty cheap for the Amiga - but they're certainly thick on the ground. This one offers you eight of the world's great Grand Prix circuits to tear round, giving you a view from behind your car as you desperately struggle to stay on the track and dodge other drivers. It's competent stuff and quite pretty to look at, but the track really isn't wide enough for safe overtaking and that mars the gameplay. All part of the

| RELEASE BOX |  |  |
| :--- | :--- | :--- |
| AMIGA | 2995dk $\quad$ OUT NOW |  |
| Nooter vesors planned |  |  |
|  |  |  |

fun, you might argue, but there's really too much chance involved in what should be a routine manceuvre.

Andy Wilton


PREDICTED INTEREST CURVE


New versions of old favourites? We've got 'em! ST Test Drive's out on the forecourt, Amstrad Flying Shark's ready for take-off and somehow we've crammed in three helpings of Tetris. Enjoy!

## UPDATE SPECIAL DARK CASTLE <br> Mirrorsolf $£ 24.99$

Oh dear, oh dear. This one could have been a hali-way decent game, or even better, if it weren't for the awful gameplay.

Dark Castle is very similar in some ways to Black Lamp on the ST (though not nearly so pretty). it s essentiaily a search and destroy game with a jumping, rock-hurling hero who makes his way through different screens to contront the Black Knight at the end of the game.

Each screen is an unoriginal lay-out of plattorms, ladders, stairways, ropes, and trapdoors over which you climb, jump, and run. Nasties take the form of rats, bats, guards, and other familiar opponents, all of whom you despatch by throwing rocks at them. There are a tew bonus weapons to collect, but their use is as limited as their numbers.

So far, so familiar. Unfortunately, the controls are terrible - you must send your figure upstairs, downstairs, and round the Black Knight's chamber by pressing awkward combinations of fire button and stick. The program will interpret these commands in different ways according to whether it thinks you're standing by a staircase or not. All toa often, you'll leap to your death when instead you were planning to trip lightly down the stairs.

Once you've lost your lives, more often through lack of proper control than lack of skill, you have to wait over two minutes to get back into the game while the program loads from two disks. You might be able to develop enough skill in the very long term to alleviate some of the control problems, but disk drives never learn.

Even playing with the keyboard and mouse in combination (a much better bet) things are still awkward. You acn forgive the old game concept, but most of the old games were a damn slight more playable than this one.

- Steve Cooke


## Amiga Version

Graphics are passable but nothing to write home about. Some nice sound effects too, though they get a bit repentive atter a while. But in the final analysis what bombs this game is neither the unadventurous display, nor the old game ideas, but the paintully frustrating gameplay.

GRAPHICS 7 IQFACTOR 2 AUDIO 6 FUN FACTOR

ACE RATING 693


Dark Castle: No new game idea to gasp at, and the pics won't exactly take your breath away either.

## PC \& COMPATIBLES

## TETRIS

## Mirrorsoff $£ 19.99 \mathrm{dk}$

If the Spectrum version wasn't all it might have been, this one's just about everything you could wish for. It's got the lot: a cyan-and-magenta CGA version, a full colour EGA version, a completely colourless Hercules version and a totally wonderful set of memo-ry-resident versions. Call it up in the middle
of your dBase bashing and you'll waste the rest of the day cromming little coloured shapes into tight spaces. There's still no pause, alas, but the boss mode (a fake spreadsheet for those ticklish moments at work) will halt the game to give you $\alpha$ breather. Good stuff

- ACE RATING 905


## AMIGA

## GOLDEN PATH

## Firebird Gold $£ 19.95 \mathrm{dk}$

Far too many Amiga games use pre-drawn screens loaded in from disk as a substitute for interesting gameplay, and here's a case in point. An arcade adventure centering around an oriental monk's mystic quest, the game mostly involves picking objects up. dropping them again and hitting people or animals. Not exactly inspiring stuff, especially when your movement's very restricted and your machine's capable of so much more.


- ACE RATING 511


## SPECTRUM

## TETRIS

Mirrorsof $£ 7.99 \mathrm{cs} £ 12.99 \mathrm{dk}$
C64 version reviewed lssue 5-ACE Raling 956
Comparisons are odious, but this version of the Russian abstract geometry classic does fall a little way short of its C64 cousin. You can get rid of the silly patterned backgrounds, switch on the 'next shape' view and put up with the rather less impressive music, but the lack of a pruse mode reduces it from a great game to being merely a good one. When things start going wrong at high speed you really need to pruse and assess the situation: without this, the game's lasting interest takes $\alpha$ bit of $\alpha$ beating.


ACE RATING 874

## AMSTRAD

## FLYING SHARK <br> Firebird §8.95cs $_{1} 12.95 \mathrm{dk}$

Spectrum version reviewed lssue 5 - ACE Roting 893
C64 version reviewed Issue 6-ACE Roting 735
Rather slower than the Spectrum version and not a great deal more colourful, this one's still entertaining stuff as vertically scrolling shoot-em-ups go. The bullets could have been made a little easier to see, but you can't have everything


ACE RATING 784

## TETRIS

Mirorsoff 88.95 cs £ 12.95 dk
Far and away the weakest of this game's oh-so-many versions, the lack of a pause mode here is absolutely crucial. The game speeds up far too early and the controls are dreadfully unresponsive, so games tend to be short and exceedingly frustrating. A great concept badly mauled.

ACE RATING 716

## ATARI ST

## TEST DRIVE

Electronic Arts $£ 24.95 \mathrm{dk}$
Amiga version reviewed Issue 5-ACE Rating 826 C64 version reviewed Issue 6-ACE Rating 815
There isn't quite the same polish to the graphics on this driver's eye-view road racer that the Amiga version manages - the ST sound in particular falls a little short of the mark - but that's only to be expected. The thrill of wild acceleration and comering is still there, the graphics move well and the

presentation impresses.

## - ACE RATING 819

## WARLOCK

## The Edge £14.95dk

Some very poor programming makes this isometric 3D arcade adventure a real disappointment. The graphics aren't too bad but animation is very poor. Room redrawing is pitifully slow and the lack of a joystick or mouse option - it's keyboard or nothing cripples the gomeplay. Even at the lower than average price, it would be very hard to recommend this one.

- ACE RATING 473


## UPDATE SPECIAL

## TIME BANDIT

## Microdeal $\{19.95$

Take enough elements from enough good games, put them together in an intelligent way, and you might just come up with something that's playable in its own right - as Microdeal have with this entertaining highspeed blast ' $n$ ' search job.

The basic idea is to explore the different
PREDICTED INTEREST CURVE


An croellent game to get into right away - and you'll probably come back for more.
time zones and, ultimately, solve the mystery that enshrouds the land. Each of the 16 zones has four levels of difficulty. and each of these tour levels has four further levels. That makes a lot of screens - all of which you must complete to win the game

In play, Time Bandit has similarities to both Robotron and Gauntlet. You control a wee fellow who rushes around blasting the monsters constantly being generated from the Portais. You search for a key - or keys which will allow you to exit the level.

Each zone has a different theme: you might find yourself in a mediaeval castle, a
classical ruin or a high-tec complex. There's even the Shadowland $-\alpha$ very nifty PacMan clone. Wherever you are the monsters you encounter are wittily created.and come at you fast and furious as you progress through a zone's levels.

## Amiga Version

The wee blond feller you control is quite cute and moves pretty smoothly, but overall the graphics are not exactly astounding. However, the game is played for its action and addictiveness, so don't let that put you off.

| GRAPHICS | 6 | IQFACTOR | 4 |
| :--- | :--- | :--- | :--- |
| AUDIO | 5 | FUN FACTOR | 8 |

ACE RATING 764

- Pete Connor



## Gズ.DVI:LLE (AC)

PRESS SPACEBAR.

[^1]

There are times when you need a rest from all that puzzling and brainwork that a lot of games provide; when what you really want is a good strong dose of furious, frenetic, noisy, reactiontesting, nerve-racking ACTION. In short, what you need is a good shoot-em-up. In these pages you'll find listed the games we think are fit to be included in any self-respecting space pilot's collection.

# SHOOT 

## ACADEMY

CRL

Spectrum
C64/128 Amstrad Atari ST Amiga
£9.95cs
£9.95cs $£ 14.95 \mathrm{dk}$ £9.95cs £14.95dk £19.95dk £19.95dk

As much a way of life as a game. Robot craft and installations have run niot on a series of planets, and it's your job as a trainee skimmer pilot to wipe them out. Graphics are basic but effective while sound effects are minimal, but this doesn't really detract from the game. Twenty missions are grouped into five sets of four, with each set being progressively more difficult, and only accessed by successfully completing the stage before. Not an easy game, but horribly addictive once you get into it. The action takes place over $\alpha 2 D$ landscape which you can map if you want to. Success is more a
matter of puzzle-solving: patience and caution rather than lightning reflexes - bite off more than your craft oan chew and you're done for, however good you are. A game you sit down to for an hour at a time. and one thatll keep you going for a long, long time


## BACKLASH

Novagen

| Atari ST | N19.95dk <br> Amiga |
| :--- | ---: |
| After the strategic explorations of |  |
| After <br> the hugely successful Merce- |  |

nary, Novagen returned to the arena with Backlash - a pureblooded melee of laser blasts, instant annihilation, and frantic movement. The scenario is strongly reminiscent of Encounter - bare alien landscape swarming with hostile aliens who hunt you down relentlessly, shooting monstrous fireballs at you as you dodge about the place trying to get
immensly enjoyable game that shouldn't be passed up cespecially when you consider the price.)

DROPZONE<br>US Gold/Americana<br>C64/128<br>£2.99cs

Now a budget bargain, this Defender clone is still one of the


Keep an eye out for BACKLASH
them in your sights. Very fast, spectacular explosions in shimmering, 3-dimensional glory. and very, very tough. Your mission is in the true shoot-em-up tradition - stay alive as long as possible and take as many of the blighters with you as you can. You'll run out of buttonmuscle long before you run out of interest.


A super budget game for one or two players in which each player controls a plane and tries to shoot down all of Dr Destructo's over one of his ships, buildings or islands. Shoot down enough planes and the installation is destroyed and you can proceed to the next level. With 21 different levels and huge cutesy graphics. Destructo is an
best available. It not only looks good, but it also plays well and manages to keep the pace of the action right at the top of the league without sacrificing smoothness or playability. The mission is pretty well identical to the arcade original - collect the humanoids and deliver them safely to your Dropzone before they get turned into hideous mutants by the aliens. As for the aliens - well, you should know what to do with them by now...One of the best budget shoot-em-up bargains.

|  | ELITE |  |
| :--- | :--- | :--- |
|  |  |  |
| Firebird |  |  |
| Spectrum | £14.95cs |  |
| C64/128 | $£ 14.95 \mathrm{cs}$ | $£ 17.95 \mathrm{dk}$ |
| Amstrad | $£ 9.95 \mathrm{cs}$ | $£ 12.95 \mathrm{dk}$ |
| PC |  | $£ 24.95 \mathrm{dk}$ |

If this 3D space epic is $\alpha$ shoot-em-up then Michelangelo was an interior decorator, but for all that trading and mining you can do there's still a cracking blast in here. You can shuttle between sate systems carrying legal cangoes if you want, but the only way youll get that coveted deadly or elite ranking is by going out there and wrecking other ships. This isn't easy: the combat is 3D tactically as well as graphically, so marauding pirates com attack from any
direction. There's no up, no down, and absolutely no quarter. Kill the enemy, run for home or die in the process. Tough, cynical stuff thatll have the palms of your hands in a sweat. Graphics have come on a bit since the slowish wire fromes of the 8 -bit versions - the PC Elite is in solid 3D - but for deep-space dogfighting the game still gets top marks.


ELITE PC version - solid action.

## ENCOUNTER

| Novagen |  |  |
| :--- | ---: | ---: |
| C64/128 | $£ 9.95 \mathrm{cs}$ | $£ 12.95 \mathrm{dk}$ |
| Atari 8-bit | $£ 9.95 \mathrm{cs}$ | $£ 12.95 \mathrm{dk}$ |

First of Novagen's games that launched them to instant fame. Stunning 3D graphics attracted interest, but what really hit the gamesters was the pace of the action - fast, furious, and unrelenting. By today's stondards the landscape is pretty bare, but what made this game (and still does) is the speed at which you play. Malevolent polygons hurtle across a green landscape letting fly at you - and they're very good shots. Use the pillars to avoid them, to hide behind, to spring ambushes, and stay alive as long as possible. Once you've wiped out a level you have to locate and pass through $a$ gateway - then you find yourself back in the action on the next of eight levels. Night has fallen, and the aliens are meaner than ever.

| LIGHTFORCE |  |  |
| :--- | :---: | :--- |
| Gargoyle |  |  |
| Spectrum | $£ 7.95 \mathrm{cs}$ |  |
| CBM | $£ 8.95 \mathrm{cs}$ | $£ 13.95 \mathrm{dk}$ |
| Amstrad | $£ 8.95 \mathrm{cs}$ | $£ 13.95 \mathrm{dk}$ |



A fast vertical scroller this one. And on the Spectrum - miraculously - not a colour clash to be seen. Destroy the descending aliens and the various installations. The varied alien waveforms make this a demonding game that can easily become a habit. Not to be missed if youre a Spectrum owner.

\section*{MAG MAX <br> Imagine <br> | C64 | $£ 8.95 \mathrm{cs} £ 12.95 \mathrm{dk}$ |
| :--- | :--- |
| Spectrum | $£ 7.95 \mathrm{cs}$ |
| Amstrad | $£ 8.95 \mathrm{cs} £ 14.95 \mathrm{dk}$ |}

Here's a horizontally scrolling shoot-em-up that has the player controlling a robot scouring the surface of a planet looking for parts of himself. This robot was designed to repel the hordes of invaders and every part of the robot that the player collects increases the his fire power. The end-of-level guardians and progressively harder stages make for one highly addictive and extremely playable game that will certainly test your reactions. The Spectrum version is, arguably, the best of the bunch.

## MOONSTRIKE <br> Mirrorsoft <br> £7.95cs

## Spectrum

Humour's a tricky area for programmers, but New Zealand duo Binary Innovations were

spot on with the visual gags in this vertical scroller. As you blast and bomb your way through swarms of light bulbs, coins, pizzas and 6502 central processors youll also be struck by the care and attention they've put into the gameplay. Youll need nerves of steel to pick your way through the hail of slow-moving enemy bullets, and split-second timing to destroy the volcomic end-of-level fortresses. Satistying. ly mindless destruction this is not: youll need your brain in gear right from the word go. As for the distinctive black and white graphics, these might not appeal to Light Force fans but they're effective and witty.


STARGLIDER - Novenia, trom inside your AGAV.

## PARADROID

Hewson Consultants C64/128 $\quad$ £7.95cs $\quad £ 12.95 \mathrm{dk}$
'A very clever game', to quote ACE co-editor Pete Connor, but it also has the distinction of combining the excitement of wonton destruction with a good deal of strategic challenge. The interior of a space ship is the scene for $\alpha$ unique gameplay style in which you use your Influence Device to enter and control ANY of the droids on-board by first zapping them and then taking control of them. All of this is practically $\alpha$ game in itself. Consoles on different decks enable you to view maps and the Droid Data Library, all of which will help you to maximise your points by ramming, blasting, and controlling other droids as you attempt to clear the ship of its mutinous crew.

## PLUTOS

Tynesoft

## Atari ST <br> Amiga

£14.95dk £14.95dk

There's no shortage of vertically scrolling games on the 16 -bit machines, but if you get hold of Plutos you could well save yourself the trouble of buying more than one. Not that this is a game with anything original to offer just manic action and blasting all the way up the pretty screen. A great bonus is the inclusion of a joint two-player option, which for some of us is the only way to make real progress (or score mucho points) in a pretty frenetic game. Naturally, Plutos isn't going to broaden your mind or make you a nicer and better person - but it will give you $\alpha$
very satisfying zap whenever you feel in need of one.

|  | SPORE |
| :---: | :---: |
| C64 $\quad$ Bulldog |  |
| £1.99cs |  |

A tremendous tactical slugrest, with $\alpha$ whopping 70 screens of genetically aitered spores out to drain your ship's energy. Open up the screen sections one at a time, clear out the spores and generators within, and pick up the all-important barrels of pesticide. Youll spend half your time running away from the spores to


SPORE - pull out the pesticide.
get them strung out in pursuit and the other half blasting away at them before they com reach you. Frenzied stuff but by no means mindless. The game has 20 redefinable screens to edit once you've burned out the built-in set. Ternific value!

## STARGLIDER

Rainbird
Spectrum
C64
Amstrad
Atari ST
Amiga
IBM PC
£14.95 cs $£ 19.95 \mathrm{dk}$ £14.95 cs $£ 17.95 \mathrm{dk}$ £14.95 cs $£ 19.95 \mathrm{dk}$ £24.95 dk £24.95 dk £19.95 dk

Starglider is still one of the best examples of vector graphics, and one of the best shoot-emups you can buy. There's a fair ol' slice of strategic planning involved as you fly your AGAV around the barren wastes of Novenia in the attempt to
destroy the Egron flagship (the Starglider), as you have to keep your eye on your craft's energy levels etc. A wonderful 'viewed from the cockpit' game that has as big a task as you could hope to find in a shoot-em-up.

## 3D STARSTRIKE

Firebird Silver

## Spectrum $\quad$ E7.95cs Amstrad $£ 7.95 \mathrm{cs} \quad £ 14.95 \mathrm{dk}$

A shameless rip-off of the Atari coin-op Star Wars, this three-year old wire-framer can still show the recent official (Domark) licence a clean pair of heels. Shoot the fighters in deep space, blast the towers on the battlestation's surface and dodge the flak in the trench as you head for that elusive exhaust duct. Terrific for its time, and great value nowadays if you can track it down.


MAG MAX - manic robotic blasting.


PLUTOS - simultaneous two-player fun.

## TANK BUSTERS

Design Design/Firebird Silver CPC £1.99cs
Spectrum £1.99cs
This was one of a family of very successtul games by Design Design, who were originally (in the good old, bad old days) called Crystal and produced some memorable Spectrum games, including the notorious Halls of the Things. Tank Busters appeared on their disk compilation along with the excellent Dark Star and others - it's now a budget release from Firebird. It remains one of the best implementations of the arcade game Battlezone on an 8-bit micro. Just in case you were born yesterday, that means you pilot $\alpha$ tank around a vector graphics
landscape, blasting other tanks and guided missiles. Use the abstract rocks and pyramids to hide behind and make sure you run like mad when one of the more intelligent metal monsters locks onto you - the highest scorer, however, is the man who knows when to turn and fire.

## URIDIUM

Hewson

## Spectrum

£8.95cs C64/128
£9.95cs £12.95dk
Andrew Braybrook's game took about five minutes to become a classic - punters were dazzled by the super-smooth scrolling and knocked out by the metallic and menacing graphics.

Basically. you have to fly around blasting the mighty Dreadnoughts - massive structures floating in space. Your ship has plenty of inertia, which some people find annoying in play. Or maybe they just find it too tricky.

ance on Mastertronics Arcadia arcade label. The 16 -bit versions of the game are almost direct tronslations from the coin-op, and are consequently very good looking.

There are lots of extra weapons to pick up, including multiples and invincibility pods that render you indestructible for a few seconds. There are only four stages to the game but each one is murderously difficult and it will take you a long time to master each level.

## ZARCH <br> Superior <br> Archimedes £19.95dk <br> ST \& Amiga versions under development

No issue of ACE is complete without a reference to this one, and quite right too: it's a little belter. The feverishly addictive
 fleet of alien nasties before they pollute your planet, with $\alpha$ whole series of tougher fleets to face once you've mastered the first lot. You'll have mutants to dogfight with, bombers to hunt down, scanners to protect. mutated trees to destroy - this game's got everything. It's pure 32 -bit poetry, with 16 -bit versions in the pipeline

\section*{ZYNAPS <br> Hewson <br> | Spectrum | $£ 7.95 \mathrm{cs}$ |  |
| :--- | :--- | :--- |
| Amstrad | $£ 8.95 \mathrm{cs}$ | $£ 14.95 \mathrm{dk}$ |
| C64/128 | $£ 8.95 \mathrm{cs}$ | $£ 12.95 \mathrm{dk}$ |}

Sideways-scrolling blaster, where objects collected give you extra weapons. Capsules discarded by the smitten aliens give you either extra points or the additional weapons youll need to make progress beccuse Zynaps is pretty tough going. It's one of those games where it certainly does pay to learn your wave structures.


[^2]

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reach the asteroid and mine the crystal before the catastrophic cosmic collision - and before your rival corporation's team gets there first. In this pulse-pounding race against time, the opposition is ruthless, the rewards fabulous and stakes appallingly high .

Commodore 64/128 Cassette ( $£ 9.99$ ) and Disk ( $£ 14.99$ ) ZX Spectrum 48k/ $128 \mathrm{k} /+(£ 9.99$ ) Amstrad CPC Cassette ( $£ 9.99$ ) and Disk ( $£ 14.99$ ) -

## The $\mathbf{Z 8 8}$

In case you didn't already know, the Z88 is the latest brainchild of Sir Clive Sinclair. This may explain the rubber keyboard - but don't be too concerned by that; you get used to it very quickly, and it's a real boon if you want to type somewhere that demands quiet, such as a library.

The $\mathbf{Z 8 8}$ is not just an electronic notebook, but a full-featured and totally portable computer. It comes with a built-in spreadsheet, BASIC, clock and a calendar which will give you dates and days as far back as 1753 (useful, eh?) In short, it's the perfect Yuppie computer, the essential accessory for 1988, what everyone's wearing in the trendiest discos...Get competing for one now!

Yes, codebusters, Professor Elvin Atombender is back

- with a vengeance. To celebrate, Epyx and ACE are going to award to three winners of this competition, not just copies of the brilliant Impossible Mission 2, but superb Z88 portable computers from Cambridge Computers. And 25 run-ners-up will each receive a copy of the game.


## HOW TO

 WINIn Impossible Mission you play the role of the secret agent who must stop the nefarious Mindbender's megalomaniacal plans. So we're going to see if you've done your homework on secret agenting. Below are 6 questions about fictional spies from film and TV. All you have to do is select the right answers from the alternatives, write them on the coupon provided and then send it to Impossible Mission 2 Comp, ACE, 4 Queeen Street, Bath B1 1EJ - by the 15th April.

1. Who played agent Napoleon Solo in the TV series The Man From U.N.C.L.E.?
(a) David McCallum
(b) Robert Vaughan
(c) Frankie Vaughan
2. Who played James Bond in the film On Her Majesty's Secret Service?
(a) Sean Connery
(b) George Lazenby
(c) Roger Moore
3. Who was the secret agent Harry Palmer in the films The Ipcress File and Funeral in Berlin?
(a) Trevor Howard
(b) Oliver Tobias
(c) Michael Caine
4. Who played Steed in

The Avengers?
(a) David McNee
(b) Max McNee
(c) Patrick McNee
5. Who was Smiley in the TV series

Tinker, Tailor, Soldier, Spy?
Name:

Address:

(a) Frank Stout
(b) Alec Guinness
(c) Joe Mackeson
6. Who was The Saint in the original

Computer owned:

SURERRACTION


# A bumper bagful of tips and pokes this month, including pokes for Quedex, Jack The Nipper II and Flying Shark. We also bring you the solution to the last two towers in Nebulus and a magnificent players' guide to that Superior mind-bender Bonecruncher. 

# TRICKS 'N' TACTICS 

## BUBBLE BOBBLE

A handy liftle tip for ST owners.

Press F1 to advance one screen.
Press F2 to advance six screens.
Press F3 to advance eleven screens.

## CRAIG DICKSON, Nottingham.



## NEBULUS

Following Bob Wade's wonderful tips up to level six in Issue 5, we can now bring you the solutions to the other levels.

- Tower 7 Go right, onto the lift, go up, go right, fall, jump right, then left (look out for the spinner), go up, shoot glowing block, go left, onto lift then push up. When you stop push up again. Go right and you will fall onto first lift. Push up, shoot one glowing block on your left, then go right staying just behind the spinner and shoot the glowing block. Go up, quickly getting on each lift as soon as you get to them. When you reach the top lift go underneath the spinner that's going up and down and wait on the block to the right of it. Another spinner will be going round (as before) and you must be behind it as you go around. Avoid the low blocks as they all disappear. Go up the lift, do the same as before but this time use the lower blocks
to wait on, as the spinner goes twice as fast as you. Go up the lift, under the spinners, take lift No4, go up, shoot balls, go right, drop, go left, drop, take lift No3, go left, fall, take lift, go up and through the door.
- Tower 8 Go right, go up, shoot balls, go left, shoot glowing block, go right, through door, go left. When you reach the third block jump, you will fall onto a lift. Go up, through door, go right, jump under spinners that are going up and down. Take the lift up, go left, jump over all the spinners, shoot glowing block, go up the first lift, through the door, jump left, through the door, shoot right glowing block, go through the door, jump right, go through door, jump left, go up, go left, go up once, go up again, go left, shoot block, go right, fall, take lift, go up, go right, fall again, shoot block, go up, go left, go through door, shoot right, go left, jump left - block disappears. Repeat process (to get back to this point jump onto lower block), jump left, shoot block, go up and take door number 3, and Bingo! give yourself a pat on the back.

JOHN MACK, Westbury, Wilts.

## GRYZOR

A neat cheat for Spectrum owners.
Load in the 48 k side of the tape. Choose your method of control. Then load Level One and complete it (shouldn't be too hard). Load in Level Two and lose all your lives. Now you will get the chance to Continue or Restart. Select the Restart option and you'll be asked to reload Level One. Rewind to the beginning of Level One, and when this level has loaded you will have a whole heap of lives which should enable you to complete the game in one go.

LEROY BAGWELL, Newton Poppleford.


# bonecruncher pLAYERS GUIDE 

This challenging puzzle game grabbed a massive 943 ACE rating in our March issue. Check out our timely tips, passwords, and tactical hints...

Bonecruncher has 22 levels, completing each of which will give you a password that enables you to access the next level from the main menu. You can check out a list of passwords to the first six levels elsewhere on this page.

The diagrams on these pages go together to provide a complete map of level 4 (Password: Golemkiller) and the accompanying tips provide a good introduction to basic Bonecruncher tactics. Success in the game depends on tackling the different obstacles in the right order - and that usually means knowing which route to follow when, and when to change the aroma direction.

In addition there are a number of basic skills, some of which are similar to Boulderdash. You can see these listed in the Skills Box. Good luck, and may the soap be with you...

## PHASE 1

1 - Collect the key, open the gate, and steal the square to the right: the glook will fall and block the monster. Then follow the route to Point B . Do this without disturbing Point A . En route you will collect two skeletons, since the monster at C will be trapped by the falling glook.

This monster is a red herring - providing you don't release it, it will simyour way to the cauldron.

2-Steal the square to the left and the glook will fall and hold the monster. Follow the route to $D$. The monster will have moved to the left as you reach the square, allowing the glook to tall to the bottom of the screen, though you won't be able to see this. Move right one square and the monster will rise up after you. Lure it along the route shown - when you pass under the glook to point E , the glook will tall, holding the monster. Now go up to the beginning and nudge Fozzy down the left hand edge of the screen. Wait for him at point F - he will go down out of sight, and will soon come up the passage to point G , trapping the monster and furning it to a skeleton.

3 - Pick up the new skeieton, then go down to the bottom left-hand corner and collect the five skeletons there. Proceed to the cauldron at point H and make soap. Now proceed to point I , collecting the two skeletons (one of which is the transtormed monster you blocked with a glook at the beginning of the game.) Don't disturb the volcano on your way. Shove the glook to the right and it will fall down. Make sure you don't move to the right of point I betore this manoeuvre, otherwise the monster at $J$ will rise up the tunnel and you won't be able to shove the glook without backtracking to lure it downwards again. After this, you collect the skeleton at K , then pop back to the stairway and deliver your soap. Once you've done that, waited for the glooks to shith to the left, and collected the key at $L$, you've finished this first phase.

PHASE 2
1 - Open the gate, and follow the route to point $M$, collecting the key, the two skeletons, and making more soap in the progress.

2-Go to point N , steal the earth to the right, then quickly descend one square, allowing the glook to come to rest one square above you. Now shove it up one square, allowing it to slide into the square at point $M$. Then retrace your steps to point 0 , and then from there follow the route through the gate to point P, collecting another skeleton and a key en route. Then deliver soap for the second time, pointing the aroma direction to the right.

3 - Wait by the stairway until the aroma direction changes, then nip down and collect four skeletons trom the monster pens at the bottom right of the map.

## PHASE 3

1 - Retrace your steps to point N , and from there follow the route to $Q$, collecting a skeleton on the way. Steal the earth from the square above you, allowing the glook to slide to the right, trapping the monster. Now move right until the monster is competely trapped and then collect its skeleton.

2 - Follow the route now to point R, open the gate, and then nip round the corner to collect the key at S . The exact route here isn't marked, but is quite simple - just make sure you don't get crushed by glooks. Return to point R, check that the exit from the glook compound is clear and then go upwards and clear all the earth from the area shaded in blue. Then follow the route to $T$ and deliver soap. It you've neglected to make soap, do so at point $U$.

3 - The glooks will now rise out of the compound, allowing you to retrieve the skeleton at the bottom.

## FINISHING OFF

1-You now need only three skeletons to complete the game. Proceed to point W, avoiding the spider. Spiders always move to the LEFT remember. Open the gate and collect the two skeletons. You can escape to the leff by pushing the glook.

2 - Your last skeleton - and two ways to get it. Either you can be sadistic and trap fozzie somewhere - he turns into a skeleton and makes just as good soap as the monsters - or you can proceed to point $X$, trapping the monster at $Y$, and then deliver soap (providing you've remembered to make it on the way, changing the aroma direction downwards. Wait for the glook to fall and trap the monster, collect it, make soap again, and Bono's your uncle!

GATE
SKELETONS
CAULDRON

## BONECRUNCHER SKILLS

1. The Steal

This allows Bono to 'steal' a square of earth on one side without actually moving into a square - you do this by holding down the fire-button and pushing the joystick in the required direction. Its most frequent uses are to release monsters from their pens without being killed and to free glooks without being crushed. It's important to realise that you cannot steal skeletons or keys - pressing the fire bution and moving the joystick towards these items will simply move you onto the relevant square, so don't try it if the square is under threat from a monster.

## 2. Push, Shove and Hold

Shove is similar to steal - provided a glook is unobstructed on the other side, you can stand to one side of it and shove it over by one square without moving yourself, again by holding down the firebution and pushing the joystick. Note that you can also shove moving glooks - an essential tactic on some screens. It the aroma direction has just changed and a procession of glooks is, for example, rising up into a narrow alley, you can stand Bono by the side of the alley and push them over as they rise up. This is sometimes necessary if a large number of moving glooks are threatening to close off a route.

Bono can also push glooks about, provided their path is uncostructed by other obstacles (including other glooks). He can also hold glooks, by standing underneath them. For example, if the aroma direction is downwards and a pile of glooks is supported by an earth square. Bono can move onto that earth square and support the glooks himselt. The best example of Push and Hold occurs on the Scarab screen. See the illus-
rration for details. One word of warning - you cannot escape from a moving glook by running in the same direction. For example, if the aroma direction is downwards and you steal a square of earth above, releasing a glook, you cannot escape downwards but must move from side to side. Monsters, on the other hand, cannot calch you up in a straightline race.

## 3. Trap, Lure, and Drop

Trapping a monster on a single square results in a new skeleton. The most common method of doing this involves manoeuving a glook (if there isn't one there already) into a monster's den. luring the monster to one end of the enclosure, and then changing the aroma direction, whereupon the glook moves along the enclosure and traps the monster, changing it to a skeleton.

Alternatively, you can release a monster, which will follow you, and then pass to one side of a glock Providing the aroma drection is right. the glook will then fall (or rise, or side), blocking the monster's path and allowing you to escape. There is usually no point in this tactic unless the glook holds the monster in a dead-end and you can get Fozzy to trap the monster and furn it into a skeleton. There's a good example of this in Golemkiler - see the map and note 2 of Phase 1.
Alternatively, you can release a monster and lure it up to a trapdoor, whereupon it will fall into it and disappear. This is a simple but effective lactic, the best example of which is on the Scarab screen where you can dispose of Iterally dozens of monsters all in one go by getting them to run in single file straight into a trap-door.

- TRICKS 'N' TACTICS


## QUEDEX

If this quest for ultimate dexterity is proving a little tough for you on the C64, this infinite lives poke should come in handy. Type in the listing, run and load the game from the start.

10 FOR X=528 TO 557
20 READ Y:POKE X,Y:C=C+Y:NEXT
$30 \mathrm{IF} \mathrm{C}=2895$ THEN POKE 157,128:SYS 528 40 PRINT "DATA ERRORI"
50 DATA $169,29,141,40,3,169,2,141,41,3$
60 DATA $32,86,245,169,6,141,206,1,96,72$
70 DATA $77,80,169,181,141,96,46,76,235,2$
DIGGER, Washington Tyne and Wear.


## ANDY CAPP

Here's the solution and some general tips for Mirrorsoff's cartoon skiver.

1 Go to the shop and buy the Daily Mirror and the Racing News.
2 Go to the Jobcentre - ask for a job and your Giro. 3 Go to Fred's Wing Nuts say "I've come for the job."
say "I can operate a computer.'
say "IBM"
say "No, I haven't."
use the Transaction command and he'll give you a $£ 40$ sub.
4 Go to the Betting Shop examine the Racing News - use the Transaction command and bet on Track One (20p). He'll then give you your rent book.
5 Go to the Town Hall and pay the $£ 20$ rent.
6 Go to the Police Station. The Desk Sergeant will
give you Chalkie's keys. With these keys go into Chalkie's back garden. Walk into the middle of the garden and you will automatically pick up a rose.
7 Find Flo. Blow her a kiss. Stand next to her. Use the mirror. She'll give you your benefit card.
8 On Wednesday go to the Jobcentre. Use the Transaction command and sign on the dole.
9 On Thursday find your girlfriend. Ask where the Giro is. She'll say she gave it to Jack the Barman. Go to the local pub and ask Jack where the Giro is. He'll then give you the Giro.
10 Find Flo and give her the Giro. That's it!

## General Tips

1 When you see a Policeman walking towards you, blow

## him a kiss.

2 Always top-up with beer
3 After entering a building with closing hours, you will not be thrown out at closing time. But if you leave after closing time you will not be able to enter again until the next day.
4. The ale's cheaper in your local. Opening hours $=$ 11am-3pm.
5 Stay in your local pub at night if possible - failing
that, in your house.
6 Avoid fights.
7 Skip time at night.

WESLEY SMITH, Tunbridge Wells.


MONDAY
KISSES 12

## DEFLEKTOR

If last month's players' guide didn't help you conquer this game then hopefully this poke will.
It's for the C64 and you should type in the listing and run it before loading the game. You will now be graced with infinite energy and immunity to overloading.

100 DATA $32,86,245,169,78,141,204,2$ 110 DATA $169,1,141,205,2,96,169,165$ 120 DATA $141,143,54,141,249,54,76,5$ 130 DATA $8,169,173,238,32,208,206$ 140 DATA $33,208,76,226,252,1,3,5,32$ 150 DATA $9,19,32,3,18,1,16$
160 FOR L=320 TO 344:READ A
170 POKE L,A:NEXT:SYS 320
THE HACKER, London


## FLYING SHARK

For those C64'ers with a reset facility, this poke will give you infinite lives. Load the game, reset the computer and enter:

POKE 7929,173:SYS 2061
THE HACKER, London.

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## ㄴ THE HUNT FOR RED OCTOBER

The lives of ST users have been made a whole lot easier thanks to this litle tip.

Once you have been killed, you will recieve information on how you died. When this is displayed, go up and save the game (use the Red October disk) then load the saved game and go to 'continue game' and press fire. This can be used every time you die and should help you complete the game.
NOTE Saving the game on the original disk will NOT copy over The Hunt for Red October.

DARREN PARDOE, Basingstoke.

## JACK THE NIPPER II

C64 poke for infinite Jacks. Simply type in the listing, RUN it and load the game from the start.

10 FOR I = 256 TO 296 :READ A: POKE I,A:NEXT
20 SYS 256
30 DATA
$32,44,247,32,108,245,169,19,141,134,9$ 40 DATA
$169,1,141,135,9,76,16,8,169,32,141,114$ 50 DATA
$6,169,1,141,115,6,76,0,6,169,238,141,170,199$
60 DATA 76,16,128,0,0
SEAN AND ADRIAN MEADS Basingstoke.

## FREE SOFTWARE!!!

Well, almost. All you have to do is
send in your maps, tips and pokes to
TRICKS 'N' TACTICS ACE
4 QUEEN STREET BATH BA1 1EJ

If your tips are chosen for the 'tip of the month' prize, you can expect to recieve SIX top-rated games for your machine specially selected by the ACE team, completely free. If you need any more encouragement, consider this. Wesley Smith earns himself copies of A.T.F. Platoon, Nigel mansell's Grand Prix, Scruples, Rampage and Gryzor for his Spectrum. Darren Pardoe wins a copy of Xenon for his ST. Sean and Adrian Meads win a copy of Driller for their C64 and 'The Hacker' earns himself a copy of Platoon. Leroy
Bagwell runs off with a copy of A.T.F for his Spectrum John Mack however, wins himself a copy of Captain Blood. Now, aren't you jealous? Well, get those tips sent in and your name could appear in this very spot.


## GARFIELD

This C64 cheat should grace your feline chum with infinite food and he'll loose his need to take naps. simply type in this. listing, run it and load the game from the start.

0 REM GARFIELD CHEAT
1 FOR X=529 TO 562:READY:C=C+Y:POKE X,Y:NEXT
2 IF C=3256 THEN POKE 157,128:SYS 529 3 PRINT "DATA ERROR"
4 DATA
$32,86,245,169,34,141,220,2,169,2,141,221,2,96$, 72,77,80
5 DATA
169,2, 141, 31,9,96, 169, 173, 141, 49, 77, 141, 68,77, 76,40,8

THE MASTERHACKER
Pen-y-Mais, Clwyd

Miss

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Missed some earlier issues of ACE? Don't despair. Copies can be despatched to your letterbox for just £1.50 each (postage free). Look at these highlights.

ISSUE 1 (Order code A120B1) - FREE cassette containing COMPLETE games worth $£ 8$-£10 - US Gold's BLUE MAX for the C64 and Ocean's GIFT FROM THE GODS for the Spectrum.
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e Music. Intro to Midi and a review of Casio's Midi Guitar.

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# THE SOUND OF MUSIC 

## A photo-romance by CHRIS JENKINS.

## Could his love for his micro survive his passion for music? Read on!

Larry Least had always loved his computer, but another desire now filled his little heart...


Yessir, if you already have a micro computer, you have the basis of a music system which will allow you to produce professional-sounding results at home. Using the computer as a MIDI controller, you can create music with inexpensive, powerful MIDI synthesisers - allowing you to: play more than one instrument simultaneously: make digital recordings of your playing in real-time; edit your tunes; sound like Howard Jones; destroy your relationship with your neighbours; play a keyboard when you thought you could only play a guitar; plus a host of other tricks that make most computer pastimes seem even less inspiring than old hats.

Larry went to his local music shop. His heart pounded with excitement as he tip-toed inside...


Sales don't necessarily mean bargains, but if you want to find out more about computer music systems, your local music store should be your first stop. They'll be able to show you a range of instruments starting from around $£ 100$, and can advise you on MIDI software and interfaces. Getting into MIDI is a bit like getting into computing for the first time - you do need to dig around, but the results really justify the effort. Nowadays, even some arcade games have a MIDI output to generate a really stunning sound accompaniment while you blast away.

But in a shop, things were just a little confusing...


MIDI equipment comes in all shapes and sizes, from $£ 99$ keyboardless modules to $£ 1500$ synthesisers. Some of these can make very rude noises indeed. As with most love affairs, however, sweet music is simply a matter of knowing which buttons to press. First, however, you have to decide what you can afford - get some advice from a range of shops, and choose the equipment which offers the best sounds and facilities. It's worth trying specialist shops as well - a good one is Syndromic Music (Tel: 01444 9126) who will give you some serious advice, if you're serious about asking it.

When Larry saw the Yamaha DX100, it was love at first sight!


Lary's a one-machine man, it seems, but if you don't agree with his choic, you could try one of several small, portable, powerful-sounding MIDI synths starting at around £149; the Yamaha SHS-10, Casio CZ-101, Casio CZ230S, Yamaha DX100, or Casio HT-700 are all worthy contenders.

But wait! Something was keeping Larry and his love apart!


He's run out of cocoa, to start with. He's also realised that unless you have an Atari ST, which has built-in MIDI ports, you'll need a MIDI interface to connect your synth to your micro. SEIL, Jellinghaus, Rosetti, Passport XRI, Cheetah, DHCP an EMR all manutacturers interfaces, for a range of micros including the Spectrum, BBC, Commodore 64, Amstrad CPC/PCW/PC and MSX. You'll also need several MIDI leads which your music shop can supply. Further details on MIDI and MIDI interfaces can be found in issues 1 and 2 of ACE , or see the MIDI Info Box on the last page of this section.

The kind assistant had also sold Larry a software package..

he first package you'll want is a MIDI sequencer. This will 'record' notes played on the synth keyboard, and allow you to correct, edit, loop, chain, and arrange them into songs. Some MIDI interfaces come with appropriate sequencer software free; other packages, like C-Lab Creator or Steinberg Pro-24 on the Atari ST, can cost around $£ 250$ ! No need for panic, however, since there are packages to suit all budgets.
.. and another software package..


No kidding - some of the sounds you can set off are really bad. Sound editor librarian packages allow you to transfer sound data from the synth to the computer, edit and rearrange it, then store it for future use. In this wasy you can create and save your own synth sounds, more easily than you can with the cut-down panel controls of most modern inexpensive synths.

## . and another software package..



Scorewriter packages allow you to translate music from MIDI data into conventional manuscript form. They're invaluable for serious music students, but arerr't your top priority if you can't read or write music!

The kind assistant had also sold Larry lots of other little boxes...


There are lots of different products which can be controlled by your micro via MIDI. MIDI drum machines will play in time with a sequencer; MIDI effects units will change function in response to signals from your micro, and MIDI sync boxes allow you to synchronise your sequences to tape for multi-track work. Even MIDI guitars, pianos, wind instruments, and mallet instruments are available - and getting cheaper all the time.

Larry loved his system dearly...


With a simple hi-fi tape recorder, or a 4 -track Portastudio cassette recorder/mixer, you can create impressive music at home without the need to spend a fortune on equipment or studiohire. As you become more familiar with the equipment, you'll be able to add tothe system to produce better and better results. It needn't be an expensive business, but watch out for the temptation to buy just one more little effects unit, or another secondhand keyboard, or an eight-track tape recorder, or a $£ 40,000$ Farilight Series III computer musical instrument, or Abbey Road studios.

## ...And nine months later, look what happened!



Larry Least became a pop mega-star, and now lives in two penthouses in Los Angeles with his llama, his camel, and chimpanzee Kenneth. Despite his passionate affair with his synthesisers, he still loves his computer, and has bought it a mansion in Rio de Janeiro, a yacht, and a Mercedes.

## MIDI - the facts.

Future issues of ACE will be covering a host of MIDI topics, and will also be looking at computers and music in general for the benefit of those who are not involved with the MIDI revolution. We can't stress too much, however, how many benefits there are to be gained from MIDI. Like Comms, it's one of those areas of computing which still appeals to a minority only, but which offers tremendous rewards to anyone willing to investigate a little further.
Current MIDI applications include using the interface as a highspeed data transfer device, as in the mult-player game MIDI Maze. in which 16 players can play simultaneously, shooting each other with gay abandon. There are also pitch-to-MIDI converters, which enable you to convert musical pitch (your voice, your mother's voice, your canary's voice) into MIDI data, enabling you to control a whole musical accompaniment without actually playing a single note.

Here's where to find the information you need about MIDI in ACE:

Issue 1: MIDI Made Simple Part $1+$ review of Casio's MIDI guitars. Issue 2: MIDI Made Simple Part 2 + a look at MIDI interfaces for different machines.
Issue 3: A look at samplers + review of Roland's stunning MT32
Issue 4: Twenty keyboards reviewed + MIDI Made Simple final part.
Issue 5: Drum machines.
Issue 6: Music WITHOUT MIDI - seven packages reviewed for different micros.

## Next month:

Look, we're not kidding. EVERYONE can use MIDI and with very little skill (and no musical ability whatsoever) can produce some stunning sound. In the next issue of ACE we go one further and spell out exactly how you can use MIDI to radically upgrade local noise ratings. And for those of you with (and without) the know-how, the MIDI Panel of Experts answers a whole string of queries from would-be MIDImen.

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# POINTS OR <br> PROGRESS? 

# Way back in the distant video game past the question was with us, and it divided games players even then. In those days it took the form 'Do you shoot saucers?', but deep down it was all about whether to go for points or progress. 

Ihe game was Space Invaders, and the saucers in question were little cigar-shaped blobs of light that periodically whizzed across the top of the screen. Shooting saucers could earn you big points if you knew what you were doing, but didn't get you any nearer to clearing the screen. Indeed, it usually involved exposing yourself to considerable danger from the marauding alien pack. Was it worth it? Were you better off concentrating on the pack and getting further into the game?

The dilemma cropped up again and again in the great rush of coin-ops that followed. Were the power pills in PacMan variants there to help you eam big bonuses munching ghosts, or was it better to use them for protection while carrying on the important task of clearing the screen? Was it worth using slow draw in Qix and vastly increasing your scoring rate, or did sensible play mean dashing across the screen at full speed so that you survived longer?

Opposing camps took things to bizarre lengths in the quest to further their respective goals. Points players would find sate spots on Asteroid screens and hang there blasting incoming craft, deliberately leaving the last fragment of debris intact so that they didn't move on to a fresh set of boulders. Progress players meanwhile would sacrifice half the cities in Missile Command without a qualm, the better to defend the other half, even though this drastically reduced the end-oflevel bonuses they got.

It isn't just classic arcade oldies that divide the opposing lobbies. How about the smart bombs in Flying Shark? If you use them you'll undoubtedly get further, but saving them up boosts your bonuses impressively. Or then there's Super Sprint: do you use the spanners to tune your car up and be sure of winning the next race, or do you take the risk of leaving it as it is and go for extra points instead?

On many games, dilemmas of points versus progress are just a phase the player
goes through. At first you'll always want to play for progress so that you com satisfy your curiosity about the game, e.g. what happens on level two? Equally, youll eventually get as far as youre going to and end up just playing for points: you will finish the race, but how much extra time will you have left over? Games that award extra lives every 10,000 points or so can blur the boundaries further, nudging fervent progress players into collecting those bonus points after all.

At heart the games that really bring out the progress or points player in all of us are flexible games: PacMan, Arkanoid and Qix are pretty much what you make them. They achieve instant playability without stifling individual style. Making decisions and developing tactics are vital ingredients of gameplay, but so many titles these days offer you one - and only one - way to play: tackle the problem like this, they say, or you won't get anywhere. That's dull, and damages the long-term interest a game oan offer. Let's hope things swing back the other way

## BAT AND BALL STYLE

For some reason modern Breakout derivatives really do bring out the divisions in games players. It's the tokens that do it of course: the tempting capsules in Arkanoid, the glowing horseshoes in Impact that give your bat extra powers, divide the ball into three or whatever. Even more so than mice, theyre the key to the sudden boom in bat-and-ball games that otherwise throw away the enormous progress made by Impossaball or Revolution.

The tension's the thing - that dreadful dilemma of playing the ball or grabbing the oapsule first. Con you get the bat back in time to keep the ball bouncing? Do you want the capsule badly enough to risk losing a life? Do you want it at all? Both games raise their own particular problems.

## ARKANOID

There are two basic strategies here: either go for the capsules thatll help you clear the screen most painlessly (progress) or for absolutely any capsule you can reach (points). The two cren't always easily distinguishable: grabbing a type of capsule you don't want forces the game to give you something else.


- ARKANOID (ST) Go for the extra life (grey capsule) or play the ball?
so it can make sense for the progress player, and even the most ardent points merchant
will concede that on some screens a laser or glue is just too important to let go of.

The two capsules that really sort the sheep from the goats are extra lives and level passes. Progress players won't normally grab extra lives unless they can get back to the ball - if they'll only lose it again immediately, why bother? - while points players grab them come what may. So what if they lose it again? They've still got the bonus points.

Level passes are slightly trickier for highscore freaks: they may get you on to another screen and give you a whacking 10,000 point bonus, but they do stop you getting the points for remaining bricks on the screen. If the ball's trapped at the top of the layout and doing useful work it can be worth hanging around a while. Progress players don't waste a second with such trivia of course: they only ever want to get onto the next


- IMPACT (ST) A full load of tokens - save them or use them?
screen, so they dash for that portal without hesitation.


## IMPACT

The 'trading' structure for gaining extra powers here will have the wise progress player saving up tokens for something really hondy and then swapping them at the critical moment. Occasionally this can mean deliberately letting tokens go - if you've got just
enough for a divide, say, but don't want to trigger it yet - but broadly speaking both types of player agree that catching tokens always makes sense. They want the tokens for completely different reasons however. Trading's the last thing on a points player's mind. He's after the cash alternative - cold, hard, high-score making points - and he'll get $\alpha$ whopping 9,000 of them if he can clear the screen with a full load of them. Of course if you're really good you can trade in for an early bonus - a wide bat, for example - and still have a good chance of filling up with tokens later on: not a risk most points players would take though, that one.

Some players think that all Impact powers are cop-outs and should be spurned regardless of points. These people are clearly limit setters

## LIMIT SETTERS

Greed is perfectly reasonable of course, and any healthy points player will have a giantsized helping of it, but darker, stranger motivations for going after points lurk in the depths. Perfectionism is a strong one of course, and the king-of-the-castle syndrome has given many a games player sleepless nights trying to reach the top of the high score table. But limit setting is something else again.

There's a little of the limit setter in all of us. Ever tried playing a collectable weapons shoot-m-up without collecting any of the weapons? Ever used lasers on a tough opponent in Elite even when you could easily spare a missile? That's limit setting for you.

Out and out limit setters are a breed apart. They're the sort of people who reckon it's bad form to use smart bombs in Defender. They aren't actually playing the same game that most of us are at all: they're making up new rules for themselves as they go along, trying to make things harder so that they can squeeze that last drop of entertainment out of a game.

The typical limit setter avoided treading on the cracks in the pavement when very young, and is still trying to break the habit


- DEFEND OR DIE (CPC) Would a smart bomb be unsporting here?
now. Right-handed limit setters play old games left-handed for the challenge of it, and will eventually graduate to playing with the monitor off becouse looking where you're going is for sissies'.


## BODY BUILDERS

Progress is normally a matter of clearing the current screen, fighting your way past the next major obstacle or reaching the checkpoint before your time runs out. There are other kinds of progress that games con offer you however, the fashionable one at the moment being body building - self-improvement by collecting weapons or other bonus abilities.

Ever since the dual ship feature of Galaga players have wanted bigger and better craft to control. Whether it's flamethrowers in Green Beret, caterpillar tracks in Panzadrome or drones and lasers in almost every scrolling shoot-em-up since Nemesis, additional weapons and features fire otherwise normal players with a very special kind of greed.

It's the idea of developing yourself from a single-sprite weakling into a real tough cus-
tomer that appeals - the promise these games make that every dary, in every way, you can get better and better. It's not what you can do with the extra features that matters: it's just getting them. More firepower! More speed!


- XENON (ST) Collect this much weaponry and your lethal!


## SIGHTSEEING

The true progress player's a compulsive explorer, a mountaineer type who absolutely must reach the next level simply because it's there. But the challenge isn't the only thing to go for: there's the view from the summit as well. For many player's that's the real interest in making progress - just seeing what comes next.

Of course, in early arcade games what came next was very much the same as the stuff you'd been playing already, but programmers soon learnt the value of extra features or a change of graphics as a reward for progress. These days the bulk of programming effort seems all too often to go into these features and graphics at the expense of playability. As a result, an awtul lot of games lose their interest once you've seen all the progress changes there are.

Though many games just get too tough for you to reach the 'point of stagnation', there are always cheat modes, maps or pokes to show you the bits you couldn't reach. That needn't spoil the game for you, but in practice the gameplay often isn't good enough to stand on its own once the element of curiosity is gone.



THE GAME OF THE GODS


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This month the Pilgrim continues his exploration of role-playing games with the excellent Bard's Tale II - just released and undoubtedly a major achievement for adventurers to revel in. Plus a host of other goodies covering every aspect of adventuring with your micro.

## BARD'STALE II

Excellent role-playing epic from ELECTRONIC ARTS

THEBard's Tale was one of the best RPG's (role-playing-games) released in recent years. It offers the opportunity to create a party of up to six adventurers with complex attributes and then take them off on a lengthy adventure through a well-1llustrated gameworld


Bard's Tale II is everything you would want from a sequel. It takes all the best bits about the original and improves on them, so you get the same character system (and even the same characters if you want to transfer them from the earlier game) but a much larger map and a more complex objective.

Your party's objective is to locate the seven broken fragments of the Destiny

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## Transferring Characters

One of the best things about RPG's is the strong bond a player can build up with some of his or her more long-lived characters. An excellent feature of BT2 is the ability to transfer characters from a character disk created under BT1 - and, very interestingly, from Ultima III and Wizardry, two other popular RPGs.

Wand. which has been stolen and destroyed by the mercenaries of the evil Lagoth Zonta. Each fragment is concealed within a Snare of Death' - a location full of tricky puzzles that must be tackled by the party in realtime. Once you've secured each fragment, you can reforge the Wand and defeat the opposition.

What makes this game so playable is the sheer weight of gameplay involved in reaching your objective. It should take you weeks to complete, with several mini-adventures en route. There are six cities to visit, wilderness and forest in between, as well as a number of Castles. And that's not to mention the dungeons beneath the cities - dark, perilous mazes which harbour sudden death as well as fame and fortune.


The graphics window shows your location - kick the door in and then kick ass!

On screen, your progress is accompanied by a small graphics window that shows the view in any of four directions from your current location. Narrow streets, strange buildings, and (outside the towns) forest and wilderness scroll rapidly by as you move about. Every so often you will encounter hostile creatures, from ogres to orcs, whose hideous form fills the window, with animated effects in most cases.

Gameplay is enhanced by the complexity of the scenario. First, there's the lange map. Then there are numerous different character classifications and levels, based on seven different races (from half-orc to elf), six character classes including Paladins, Wamiors, and Rogues, four Magic User categories, and six personal attributes for each player that determine his or her performance in battle. You com of course create your own named char


## Keep your distance

Bard's Tale I is very similar to its sequel in gameplay features, but lacks two important improvements: a larger map and the idea of 'distance' in combat. In BT1, when you're in conflict with an opponent you're in the thick of the fray, but in BT2 there's the added complication of distance between combatants. Over a longer distance ( 60 foot, for example) spells are less effective and hand-to-hand weapons are ineffective. At a range of 10 foot, however the 'melee' really begins with swift hand-tohand fighting taking the lion's share of the action.
acters, with their original attributes fixed by the roll of dice (which the computer does for you).

In addition there are an astonishing 79 spells and seven magical songs (which only Bards, of course, can sing). Combine all these factors with the variety of locations and puzzles and you have a very satisfying scenario indeed. Highly recommended for

## SYSTEM CHALLENGE 94 LANDSCAPE 89 ACE RATING 920

all those who fancy $\alpha$ spot of battle and bravado in foreign lands - the emphasis, it
must be admitted, is more on action than 1 Q but who could resist it?

## Role on Issue Eight!

This month's RPG, Bard's Tale II, tries to give the adventurer the best of every possible world. You get complex character creation, a large map, AND reasonable graphics for the different locations. And even if a lot of the buildings do look identical from the outside, they can still spring some nasty surprises on you once you've kicked down the door!

Next month in Issue Eight of ACE we'll be looking at the famous Ultima games from Origen Systems. These games take a different approach on graphics from The Bards Tale, with a map built up from small character-sized tiles - so you see more of the map on-screen at once. In other respects, however, they are closely related to BT2 and also to another older game, Ring of Darkness from Wintersoft, which we'll be mentioning for the sake of nostalgia.

# LOADS OF MIDNGHT 

Epic satire from CRL?

EXCELLENT idea this - to do a take-off of Mike Singleton's epic release. CRL's Quillustrated program features the adventures of Ludo, Morbid. Cordless, and Rorthom as they attempt to destroy the Crown at the Tower of Doom and win the War of the Franchise against the hideous Gloompork

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So, great idea. But not much of a game, unfortunately. Loading up the game raises the interest to begin with, especially when you see some subtly familiar graphics and realise that - in the early stages at least - the program manages to be quite clever at imitating its famous predecessor. The map lay-
out is also disturbingly reminiscent of the lands of Midnight and anyone familiar with the various citadels and plains of that domain should have a few laughs.

Naturally one of the best features of the original Lords of Midnight was the strategy element. It would have been nice to see some attempt to introduce a take-off of this in Loads of Midnight, but it doesn't appear

And that's about all, really. The humour seems to weaken as you move further into the game and any serious take-off of Mike Singleton's game becomes a more and more remote possibility as you discover a spacestation and find that a disturbing number of simple commands are not accepted by the program. Spelling mistakes that are initially amusing (horrorifically', for example) soon become nothing but a symptom of poor game-testing and faulty execution.

Software companies that publish Quilled and GACed games need to remember that


Looks like Lords of Midnight, but don't be deceived.
many of these games are written by people with little experience. A good company will give the programmer help, advice, and back-up that ensures the absence of simple grammatical errors and sharpens gamedesign. Then you can end up with some good products. Without it, you get something like this, which very few people will want to add to their collection

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## NO PROBLEM!

The Pilgrim's clue column returns this month. Don't forget that if you've got some handy tips for ANY adventure, then pop them on a postcard and send them in to:
No Problem! The Pilgrim, 4 Queen Street,
Bath. BA1 1EJ
By doing this you get: your name on the page; other adventurers out of trouble; and the closest to immortality your ever likely to reach this side of Wizardhood! This month's tips are sent courtesy of Bigby, the Danish Wizard, which should put all you English half-orcs to shame. Come on, let's hear from you!

## Mindshadow

To get past the angry crew aboard the pirate ship you need to be violent! Use the cleaver to cut the anchor chain, then walk the plank! Examine your drink in Rick's Cafe and 'follow man' to get a vital lead in the search for your lost identity.

## Seabase Delta

Short switch with the fork to make the belt move in the right direction before climbing it. Blow a bubble with your gum to get an egg from the chicken. Throw pancake at the camera. Eventually make a seesaw, and 'play clowns'.

## Robin of Sherwood

Capture the sheriff to escape from Nottingham alive. Kill Belleme with the arrow, and take Marion to the location just south of the Grange. There's a man hiding in them bushes! If you only need one more touchstone and don't know where to find it, why don't you drop the silver arrow in the stone circle.

## Dracula

Sign register, and ring bell before eating, and take care when choosing from the menu. Examine the eyes of the old woman in the coach, and wake up
when you've had enough! Lift seat in Dracula's coach, and use the cross as a key to get into the stowage. Wave cross when attacked by the female vampires.

## Valkyrie 17

Try 'get poles' when outside the hut. Move the dustbins in the dark alley, but be sure to have aqualung and leg of lamb with you before you enter the sewers.

## Temple of Terror

Kick sand at serpent to enter the city. You could also walk right past him (go doorway), but clearly this is a bug (one of manyl)

## Kayleth

Spin bar to get past the Mokki Ray. To escape from Yagmok's quarters you need to ride the hoop.

## Frankenstein

Ask the girl why she is weeping. Pray in the church and say hello to the young priest. Hit anvil thrice then ask for a job.

# - The Travellers' Times <br> Edited by: The Pilgrim Honorary Editor: The White Wizard $\bullet$ Published by Far-Future Publishing Price: Free with every issue of ACE Magazine. 

## INFOCOM GO HOLMES

Infocom's latest release takes us back to Victorian London and sets Dr Watson and Sherlock Holmes in pursuit of the stolen Crown Jewels. The player takes the part of Watson, who has sole responsibility for solving the crime, although you can also confer with your distinguished colleague during the game.

This release is part of Infocom's expansion into other gameplay areas. To start with, there are the now-familiar on-screen hints as well as the usual Infocom paraphernalia (which in this case includes a tourist map, newspaper, and key fob). In addition, ST and Amiga versions feature sound effects - a first for an Infocom product.

But is it an Infocom product? The company are now accepting programs from other sources rather than developing them exclusively in-house. Infocomics (see last month's Travellers Times) were the first example of this, and now we have this game, produced for Infocom by Challenge Inc. Recent titles have not been as strong as some of the older, in-house programs, so keep your fingers crossed and read the review in next month's Pilgrim column.

## Gulf Crisis for Activision

Activision are about to release their first game from new programming house Abstract Concepts, run by Anna Poppkess and (in the background) Fergus McNeill. Mindfighter has some excellent graphics, a strong story-line, and a number of very attractive programming features.


Southamplon after the bomb - not much different from before, eh?


Fergus Mckeill and his fiancee Anna Popkess - creative partnership.

Psychic young Robin finds himself in a postnuclear Southampton where a fascist regime is making life rather nasty for the locals, who - with radiation sickness and nuclear devastation - have
got enough on their plates already. Robin (who is visiting the time zone while in a trance) returns to pre-holocaust Southampton to prevent the Third World War from taking place.

The game is produced using Level 9's new programming system, specially produced for them by (among others) Tim Gilberts of Gilsoft. The professional background to the programming really shows, with system features like SCRIPT and SAVE being controlled from an icon-driven menu screen. There are twelve interactive characters to..er.. interact with (using the traditional SAY TO name "MESSAGE" format) together with RAMSAVE and RAMRESTORE. There's also an unusual feature whereby the main character will start to autoplay if you don't enter a command for three minutes - so you have to keep on your toes, although of course you can pause the action if need be.

Meanwhile Fergus is hard at work on projects for his Delta 4 label, and we should have some news of Smirking Horror in the very near future.

# A THOUSAND KISSES 

Soren Bang Hansen, Danish adventure supremo, points out just how difficult it is for adventurers abroad. If you thought The Pawn was tricky, wait till you tackle a game where a typical location description might read: De er i en moerk og uhyggelig gang uden vinduer. Makes the Goblin's Dungeon seem like an open door...

Most Scandinavian adventurers probably know me from the Danish IC RUN magazine, where I run a regular adventure-column (the biggest in any non-English computer magazine) featuring a clues helpline, news, reviews, and even complete solutions now and again. I understand that the latter is a matter of much debate in England, but there is a great demand for this service throughout Scandinavia, and I certainly don't have any 'moral problems' because of this. As you will see, there is a particular reason for this. Read on, and find out why playing abroad is often considerably more difficult than most English-speaking people realize.

## LINGUISTIC DIFFICULTIES

It is a well-known fact that the vast majority
of professional adventures are written in English, and if this happens to be your native language then of course everything is just fine! But those of us who live in c minor language area are a lot less privileged. How do you go about playing adventures in foreign tongues?

Outside Britain, USA, Australia etc. succeeding in an adventure game is not only a matter of solving logical puzzles. Often the most difficult task is hitting upon the particular word or phrase required by the progiam in order to perform certain tasks in the game (the dreaded Siption fuel command in Channel 8's Circus' is one such exam. ple). Also most of us know to our cost that it is essential to be closely aware of what the text descriptions actually say, as often there are

vital hints embedded in the text. This means that you have to understand every single bit of it. which goes to make an English dictionary an absolute necessity.

Still, if you have some fundamental knowledge of the English language, then with perseverance it is usually possible to win through. The only exception that I have come across, during my long life as an adventure reviewer, is Infocom's Nord and Bert. I recently reviewed this game in TC RUN and it was the first ever Infocom game that I could not recommend to my Scandinavian readers. Even I (who have some experience in translation work) just couldn't make head or tail of this game! (You'te not the only one. White Wizard.)

## the games we play

Needless to say, the linguistic barrier also has great influence on what games we play. It sure makes a great difference whether you're playing a rudimentary 'pre-Pawn' graphics adventure, or exploring the atmospheric environment in the latest text-thriller from Infocom Thus, the most popular adventures on this side of the Channel tend to be those with nice graphics and a minimum of text. To give you an impression of the games we Vikings puzzle over, I have compiled a chart based on the number of mentions a game gets in my helpline mail. The list shown here is for mail received during 1987.

1. Kentilla (Mastertronic)
2. Borrowed Time (Activision)
3. Valkyrie 17 (RamJam corp)
4. Arrow of Death (Channel 8)

## Danish Dynamite

Ever played a Danish adventure? Thought not, but just imagine what you would do if you were confronted with a text descriptin like this:
De er i en moerk og uhyggelig gang uden vinduer. Kun faa af jer kan forstaa dette!

This location description is from the latest and best Danish adventure l've seen for a long time. It's called 'Tusindkys' (Danish for 'A Thousand Kisses') and is a graphic adventure for the Amiga written in compiled BASIC by one Soren Lutzen.
The game is a funny little story in which your quest is to prepare yourself and your home for a nightly visit by your girlfriend. Before you all go greeen with envy for not being able to actually play this adventure, there's a point I'll have to make. The overall standard of Danish adventures is generally far below that of English and American games. But despite that, it is always a refreshing experience to play a game, rudimentary as it may be, in your native language!

## 5 Robin of Sherwood (Adventure Int)

As you see, there isn't a single Infocom game among these five all-time classics. However. Infocom do have their own band of loyal and dedicated followers - in Denmark like everywhere else. And Im one of them! It's just that there's an awful lot of text to digest.

Another common problem facing a Scandinavian wizard is that of getting hold of
copies. The adventure market is a relatively small niche (especially in small countries) and many soffware retailers simply don't stock anything which doesn't contain some element of joystick-waggling. Consequently, I know of many adventurers who order their adventure software directly from England.

Possibly the most important point to make in this connection however, is that if an adventure (or any other piece of entertainment software for that matterl) is to really succeed in Scandinavia, then it MUST be for a Commodore computer. For the last 3 -4 years the Commodore 64 has been THE home computer over here, and there can be little doubt that the Amiga is the next step forward. Atari ST is a word which just doesn't appear in our dictionary!

## THE GOOD POINTS

Okay, so playing in English can be frustrating sometimes. But there is at least one important point which I haven't mentioned; that of education. I speak from experience when saying that next to actually staying in England, I can think of no better way of learning the language. The only thing the computer con't teach you is how to pronounce the words correctly. (Warning' If you play Pawn on the Amiga, do leave the speech option off. It could seriously damage your English pronounciation!) Anyway. I earnestly believe in the use of adventures for educational purposes, and I think the education authorities should consider the potential of this new media in language instruction. both here in Scandinavia and elsewhere

## PAT'S PATCH

Quill and PAW have a built-in wear/remove routine but GAC does not. Pat plays wardrobe mistress in this month's column especially for those who like to create their own adventures....

GAC's lack of a built-in wear/remove routine was pointed out to me by Robert Lane of Mansfield in a recent letter. Robert sent a routine for wearing things in GAC which dealt with specific objects. Using this I've extended the idea to allow automatically wearable objects to be handled.

First define all wearable items as having object numbers above 100 and ensure that their nouns have identical numbers. Also define the verbs 'wear' and 'remove' and allocate a free room ('lll use 200) as the player's 'worn store'. Then enter messages as in the conditions in Figure 1.

Condition 1 checks that the object is wearable and carried, drops it (you must do this or the weight carried will become distorted) then sends it to the worn room.

Conditions 2 and 3 print appropriate messages if the object is already worn or not available (in that order otherwise 'not avai' would trap objects worn since they're not available).

Condition 4 covers objects which are not wearable.

Condition 5 brings the object from the 'worn' room but doesn't try to get it in case the player is already carrying the maximum amnount.

Condition 6 deals with objects not currently worn since it is checked only if condition 5 fails.

Condition 7 (which replaces the standard inventory condition) tells the player about both carried and worn items.
[NB. The " $x$ IN y" condition is incorrect in the GAC manual and should be used as "(room) IN (object)" .... NOT "(object) IN (room) " )!

If your adventure had only one wearable object it would be simpler to define two objects for the wearable item and simply swap them around using the conditions in Figure 2. There's no need for a special inventory condition.

Listing 1 - MULIIPLE OBJECT ROUTINE (Low Pri-
ority)

1) IF ( NO1 > 100 AND VERB "wear" AND CARR NO1 ) DROP NO1 NO1 TO 200 OKAY END
2) IF ( NO1 > 100 AND VERB "wear" AND 200 IN NO1 ) MESS "already worn" WAIT END
3) IF (NO1 > 100 AND VERB "wear" AND NOT

## AVAI NO1) MESS "it's not here" WAIT END

4) IF (VERB "wear" AND AVAI NO1) MESS "you can't wear that" WAIT END
5) IF ( VERB "remove" AND 200 IN NO1) BRING NO1 MESS "you remove" OBJ NO1 MESS "and drop it" WAIT END
6) IF (VERB 'remove") MESS "you're not wearing that" WAIT END
7) IF (VERB "inven") MESS "You are carrying" LIST WITH MESS "you are wearing" LIST 200 WAIT END

## Listing 2 - SINGLE OBJECT ROUTINE (Low Priority)

1) IF ( VERB "wear" AND NOUN "gloves" AND CARR "gloves") "gloves" SWAP "gloves (worn)" OKAY END
2) IF (VERB "wear"AND NOUN "gloves" AND CARR "gloves (worn)") MESS "already wearing them" WAIT END
3) IF ( VERB "remove" AND NOUN "gloves" AND CARR "gloves (worn)") "gloves" SWAP "gloves (worn)" OKAY END
4) IF ( VERB "remove" AND NOUN "gloves" AND CARR "gloves") MESS "not wearing them" WAIT END

Yes，folks！That ol＇Leaderboard controversy just keeps rollin＇ along．Is it or is it not possible to get a hole in one？There are those who say they＇ve done it－and there are those who say it cannot be done．And，at long last，the women are having their say on the sexism debate．

ACE Prizes go this month to Grant Punchard－that man is so plucky in defence of his Speccy；to Anonymous of Great Bud－ worth for his tale of Yuletide woe；and the Letter of the Month is from Michael Ormond of Glasgow for his trenchant criticism of the GEM operating system．

Make sure your views are heard－and give yourself the chance of picking up a software prize－by writing to ACE Letters， 4 Queen Street，Bath，BA1 1EJ．Don＇t forget to say what software you would like if you get lucky．
－Fairy godmothers
Once upon a time there lived two humble artists who were proud own－ ers of an ST．Oh！the joy of the 512 colours on the palette and 16 colours on their pixelled canvas－a
mightly leap from their Electron．
But one fateful day，a wicked witch cast a spell on them，making them greedy for more colours on their canvas．They heard of such things as Quantum Paintbox and

Spectrum 512 offering them hun－ dreds of colours on the screen． They found with Quantum Paintbox that their canvas had to be split up into different sections；was this so with Spectrum？Alas they did not

## Tarnished GEM

They certainly don＇t make comput－ ers like they used to．That was my first thought on switching on my new Atari 520ST．And how right I was．What＇s this bloody GEM user interface．？Okay，it＇s fair enough on the IBM PCs alongside Microsoft Windows，and in fact I found it very useful，but that was probably because I could switch it off．

I remember when I first got my ZX81 and I could quite happily sit for hours on end conversing with its user interface but with GEM it＇s rather a one way conversation．I have owned a lot of computers since my faithful Sinclair and have used a great deal more but the ST is the first l＇ve come across that won＇t let you do anything unless you＇ve got some software to hand．

Picture the situation．I＇m sitting studying for my analogue Electron－ ics degree exam．I need to calcu－ late a relatively simple equation． To get my calculator would require excessive muscular effort so I turn to my ST to do the sum for me． Speed is of the essence．What do I have to do？I have to load the Basic language first，that＇s what！ The only version of GEM I＇ve seen that doesn＇t have a calculator faci－ ity，and it needs it the most．

Is that an ST owner＇s manual I see before me？Come let me clutch thee．I have thee not and yet I see thee still．Art thou not a teeny bit small for an owner＇s man－ ual？I mean，l＇ve heard of economising but not including a thorough guide to ST BASIC is a
bit ridiculous．
The machine itself though has a number of redeeming features． The keyboard，though not quite IBM standard，is perfectly ade－ quate and the audio feedback is very useful．The mouse is better quality than I had expected and must make life a lot easier for the less computer literate among us．It has a parallel printer port，which is not mentioned in your pink pages． The disk drive is fast and quiet． And the screen display on my TV is excellent，far better than any I have seen before．I still can＇t quite believe that I got all this for $£ 269$ ．

No doubt I shall be even more impressed when I get some games software and I can＇t wait to lay my hands on an assembler and a ver－ sion of PASCAL（can you recom－ mend any particular software for either purpose）．

This First Word Plus word pro－ cessor is really excellent．It＇s so much easier to control the type styles and formatting than with other WPs l＇ve used．

As I said at the start，they don＇t make computers like they used to．Most of the advances that have been made are almost unbe－ lievable．（I was playing on an Archimedes the other day－why won＇t it let you loop the loop in Zarch？）I think though，that Atari， in trying to make the ST more user friendly have only succeeded in adding an extra degree of abstrac－ tion between the user and the machine．It is like where once you could program in assembler you

## LETTER OF THE MONTH

are now being forced to program in PASCAL with all the inherent limi－ tations and information hiding this step involves．

## Michael E Ormond Glasgow

Should an operating system come between you and your computer？ The idea behind GEM－and its predecessor on the Apple Macin－ tosh and Lisa－is that users are able intuitively to operate the machine．Somehow or other you＇re supposed to grasp the meaning of all those wee icons and symbols．As you can gather，I don＇t believe it＇s as simple as this； a WIMP system needs to be learned，just as a＇command－line＇ system such as MS－DOS．After working on the Mac for quite some time，I believe that a decent WIMP system does make things easier－file management in paru－ lar．But I still can＇t help being annoyed by the silly little pictures and smarmy＇humour＇of it all．

know. They knew of a HAM mode on another computer which did not cut up the canvas; they hoped Spectrum 512 worked like this and that their fairy godmother ACE would tell them..What a sad story. Let's hope their wishes come true and they will be answered!

## Alex Komiosy <br> Ware

## Forbes of Arabia

I am a British subject working in Saudi-Arabia and am writing to ask your advice on a matter of compatability of the CBM 1081 monitor. At the present I own an A500 and the 1081 monitor and I wish to buy an Atari 520 ST FM. Can the Atari be used with the 1801 monitor? (with a suitable lead of course!) Also I wish to congratulate you on producing a magazine that is bereft of the petty arguments over Machine vs Machine that one encounters in many 'dedicated' publications! Every month I receive ACE sent from the UK, after a very thorough read and re-read, I pass it on to my colleagues (most of whom are Americans), whereby they argue over who gets to read it first. For their information, can you offer subscriptions to overseas readers? Apparently, they have nothing like ACE in the USA. If I am lucky enough to be 'Letter of the Month' can you give the reward to some deserving charity. All I ask is that you can carry on the good work in producing such as excellent .magazine. For me, it really is something to look forward to every month.

## Harry Forbes <br> Damman, Saudi Arabia

You can certainly subscribe to ACE
from the States or even from Saudi - but it's going to cost a bit more than in the UK. Airmail outside Europe costs $£ 27.95$, payable in Sterling. As for the CBM monitorST link up, we've tried it here but can't see any simple way of doing it. Which isn't to say that it can't be done: more news on that as soon as we've got some.

## Stocks \& shares \& videos

I am retired and am interested in buying a computer for personal use rather than business purposes.

My main requirements are that it is able to print:-

1) A portfolio for stocks and shares
2) To put captions on Video films

I understand that any of the Amstrads can do (1) but not (2) and that the Amiga can do (2) but not. (1).

Can you advise me what computer I should be looking for?

## Arthur Kettles <br> Rayleigh

You're more or less right; you can get portfolio management soffware for the Amstrads, but nothing that will produce video titles. The Amiga will do the vids, but there doesn't yet seem to be anything to manage your stocks and shares. The thing to bear in mind is that it's unlikely that there will ever be video titling software for the Amstrad, but it's very likely indeed that someone will bring out a portfolio management program for the Amiga.

## Programming courses

I was wondering if you could help me. I am a 13 year old Amstrad 464 owner and I'm really into my com-

## Leaderboard

Firstly, in reply to S P Law's letter last month, I have achieved a hole in one of World Class Leader. board - but only once!

Secondly, why don't you introduce a PBM (Play-By-Mail) section. I'm sure it would be very popular. Thirdly, goodbye

## Carl Kuttelwascher Camberley

Concerning a letter from SP Law of Warwick in ACE issue 5. It is imposssible to get a hole-in-one at LeaderBoard because the flag fills the hole and doesn't move until the ball has stopped on the green.

## Mark Preston Brantham

I reply to S P Law of Warwick question about getting a hole in one on Leaderboard. I have not got a hole in one on Leaderboard, but l've got
a hole in one on World Class Leaderboard for the Amstrad CPC. The graphics are disappointing compared to the Commodore 64 version. What is even more annoying is the graphics are in the lowest resolution screen mode that the Amstrad can produce.

## M Gendon Norwich

Yes, my dad and I have had hole-in-one on Leaderboard on the ST. In fact, everyone on our table at school (2 Specs, 2 64's 1 ST) has Leaderboard.

## Matthew Pedensen <br> Buckingham

These letters don't seem to bring us any closer to discovering whether or not you can get that elsive hole-in-one. Can anyone come up with a definitive answer?
puter. I've always wanted to learn how to make (program) my own games, but I haven't had much luck. I've read all the books I could get hold of, about Sprites, War Gaming etc. but as they are explained in such a complicated way, it is impossible to understand them.

I was wondering if you knew of any programmer's courses that would teach me how to make games on my Amstrad 464 for money. I would appreciate it very much if you could find this out for me.

## Name \& address witheld to spare embarrassment

We know of no course specifically aimed at games programming. Most people who write games professionally are either self-taught or have studied computing/maths at university. There are evening clases run by local authorities, but these won't necessarily be what you're looking for. I suggest you try teaching yourself machine code Amstrad Action's series First Bytes is as good a place as any to start. If you don't take to that, then perhaps you should try a DIY game program such as Shoot Em Up Construction Kit.

## Eazy Cars?

I was wondering how many people find Crazy Cars on the Amiga easy? It's quite a good game, but it seems a bit simple, as just after 4 games I was driving the Ferrari no trouble. In fact I wasn't pleased to say I completed it and it put me straight back to the berk in the merk (Mercedes) and then I completed it again on the same game and I could have gone on at a score of 59320120000000 but it was just getting boring over taking the same old cars with the same old levels I just gave up and stopped. Yours repetitively,

## Roger Prynn <br> Reading

## Irish users

I have been an ST user for over six months now and to be totally honest there is very little support for ST here in Ireland. Instead of sitting around and waiting for someone to start up a user group. I have now decided that I will start one myself. I am at the moment compiling a newsletter (with the help of a few friends). We also have a lot of P.D Software between us and we also have made a few of our own music demos.

As the name suggests we are looking for Irish ST owners interested in joining our group, but we would like to hear from anybody anywhere. It goes without saying we would love any of your readers to send their Demos and P.D software to us. All disks will be returned and we will add a few demos of our own.

If you are interested send a SAE., of for UK or Europe an Inter-
national Reply Coupon. You can tape 50 p to a piece of cardboard in UK or IRL. If you send us demos we cover return postage.In return you get a list of our Demos and first newsletter. I would like to thank you for giving us the chance to publicise our new group.

## ST Ireland

Mark E Kinsella
Johnstown, Sea Road
Arklow, Co Wicklow, Ireland
We're happy to print your letter to help you get going: if you want to advertise your existence once you're established, don't forget the Readers Pages in the Pink Pages.

## - Atari SX?

After reading your letters pages I feel pretty relieved because I bought my ST the day W. H. Smith dropped the price to $£ 300$, as it makes me lucky enough to have an 'old' machine which runs everything. It's pointless to make a blitter-compatible ST because the software houses will always write for the base model ST upwards - they certainly won't produce special blitter versions for the few thousand people who will upgrade and might just buy the program.

Once a machine has been successfully launched it's best just to publicise the bugs so programmers can write around them. This worked very well for years on the Spectrum 48 K , which went through several hardware versions all having exactly the same ROM (and the same bugs). Consequently every 48 K Spectrum ran every 48 K program with no problems.

Unfortunately Sinclair then stuck their feet firmly in it when they produced the 128 K machine, which in theory should have been firmware-identical to a 48 K machine when in 48 K mode. When they added the comparatively useless calculator to the 128 K machine, they put the code for it in an unused area of the 16 k ROM used in 48 K mode. Many programmers working in interrupt mode two had been using that area (full of hex FF's) as a jump vector table, and their programs would not work on the 128. Also lots of copy protection schemes unscrambled the code as it came off the tape partly by XORing it against the ROM, and would not work with the altered ROM.

It Atari really want to produce a blitter machine, (and they should, to compete with the currently superior Amiga) they should also throw in a GOOD sound Chip, perhaps 512 colours on the "Atari SX" or something. Meanwhile they should leave the ST completely unchanged, instead of unsettling the software base for it. If Tramiel produces an SX I'll buy one to keep my ST company...

## Graham Galbraith <br> Wallsend

While you're at it, why not suggest to Jack that you take over the ccompany and set it on the right road?

## - Girls talk

I am writing to add my say to the debate of sexism in computer games.

Everyone seems to be leaping to the defence of us 'poor, exploited girls'. Well, I don't feel at all exploited just because Maria Whittaker is earning money in her own way. The idea that all women are being disgraced by this is the equivalent of saying that all English people are suckers because one of them is conned.

Finally, I thought I might like to say that Neil Wilson (letters-issue 5) is the most big-headed self opinionated pratt I ever heard of. Less on the 8 -bit machines indeed!

## Ms J Warner Wellington

I did not see D Panayi's letter in issue no 3 , since issue no 5 is the first copy of your very excellent magazine that we have bought. I can very well imagine how it went though, since we have heard it all before, about the exploitation of women about the abuse to all womankind because some well endowed female choose to uncover more than some prude thinks they should.

I, as a woman, am not in the least bit offended at the sight of another woman's scantily clad or naked body. Girls such as Maria Whittaker know exactly what they are doing, and they have the bank balance to prove it.

If the truth were told, it's not they who are being exploited, but the men who constantly clamour for more

## Mrs R Rainford Hollesley

Well, it's real nice to get - at long last - some letters from women on this subject. But I wonder just how representative these opinions are? Would any more ladies care to join the debate?

## - Piracy made 'simple'

I have come up with the following 'simple' statement concerning software piracy:

Piracy causes higher pricing of software. Higher pricing of software causes further piracy. Further piracy causes irreparable damage to small software houses. Irreparable damage to small software house causes the narrowing of software availability. Narrowing of software availability causes less software, which ultimately results in more piracy.

To conclude, it can simply be said that with piracy causing higher prices, higher prices causing more

## Punchard is back!

Thank you for publishing my letter in defence of the Spectrum (Feb 1988) and for your generally fair response. You did, perhaps, slightly miss my point though, that the Spectrum has as much right to be considered as a games and 'serious' machine as any of the 8 -bit machines. Indeed, when one considers such excellent software as The Writer or the Tasword series (which eliminate the 32 column text limitation) I think the Spectrum is probably better supported than any other 8 -bit machine in terms of serious software. As you quite rightly observed, I am 'making-do' with my Spectrum for business applications, but so do owners of C64's and CPC's etc when compared against Amigas, PC-Compatibles and the like. I don't want to labour the point, so will you at least concede that the Spectrum, although a bit long in the tooth, is a versatile machine which offers uparallelled value for money, and we'll call it an honourable draw?

At the risk of becoming boring, I'll move on to my next point, hoping you can provide some answers. Being a dedicated Spectrum fan, the logical upgrade for me would appear to be a +3 . I have, however, heard disturbing rumours about serious compatability problems, with existing 128 K software either not running or running with corrupted sound. Also,
alleged reduced RAM-disk capacity, slower Basic and inability to accept existing peripherals (such as my much prized Echosoft synth etc) are rather worrying. There must be a lot of Spectrum owners who want to know if these rumours are true and so I would be very grateful if you could provide some definitive answers.

Next, if there are any nonSpectrum owners still reading, I would like to express my views on the more general subject of sex and violence in computer games. I feel it would be extremely difficult to draw up guidelines as to what is/is not acceptable, as we all surely have our own inbuilt values of right and wrong. It is obvious to most of us that CRL's 18 cerificate for Jack the Ripper was a cynical publicity stunt appeal to those who enjoy X-rated films. My opinion is that the responsibility lies with mag. azines such as ACE to present as objective a review- of software as possible, whilst highlighting any areas of blatent sexism, titillating violence, excessive nationalism etc, and to let each reader decide whether or not to purchase on this basis. The sales figures will soon reveal what is and is not acceptable to the public. To quote an example, I once played a game called Raid Over Moscow on a friend's Atari. Whilst the game-play was quite good, I would certainly

## PRIZE LETTER

never buy this product, as the realisation that it was not just some abstract blob of pixels I was shooting, but meant to be Russians, was to me at least rather disturbing.

## Grant Punchard Aldershot

Well, I will concede your point and call it an honourable draw - if only to keep you to your promise not to send us more missives on the topic of the Spectrum's worthiness.

As to Spectrum +3 problems, we haven't heard anything about them; shouldn't you be thinking about upgrading - dare I say it? -to something just a mite more powerful? Raid Over Moscow certainly was a disturbing game; but did you know that public pressure forced US Gold to rename it simply as Raid? If people shout loud enough, things can get done.
piracy, more piracy causing damage to small software houses, damage to small software houses causing less available software, and less available software causing more piracy, the software industry is slowly being destroyed.

Piracy is illegal; piracy is damaging; piracy is wrong. I do not believe any pirate can justify their actions.
I hope this has clarified the problem!

## M Pease <br> Norwich

If anyone can follow your intricate chains of reasoning, then they may well agree with you.

## Archie software

Do you know of any new releases for the Acorn Archimedes?If you do could you please send me some information on them. I think the mag's brill - keep it up.

## Richard Thomas <br> Bishops Itchington

The next big release for the Archie - on the games front - is likely to be Conqueror by Jonathan Griffiths, from Superior Software, due out very soon now. Apart form that we don't know of much coming Archie's way.

## - Crash corner

I feel I may be of some assistance to Darren Moore, and any other people having problems with unexplained computer 'crashes'. After reading D. Schofield's letter in the March issue I feel I must make a few comments. Although changing a 3 amp fuse to a 5 amp may stop the fuses blowing, has anyone thought to themselves, why are they blowing? If you follow this procedure of simply replacing the fuse with a bigger one each time it goes, you are asking for trouble! Anyway, I cannot possibly see any benefit by replacing the fuse except maybe allowing more mains spikes to enter the computer.

Now I won't go over the top here explaining about power surges and 'dirty' mains, but will make a few points.

Firstly, using 'double' adaptors is not a good idea as they do not permit a clean flow of power to the computer (come to think of it, nothing does!) and can cause problems with spikes etc: it is much more sensible to use a 'trailing' socket (plug board) instead, as each unit then has a separate plug and of course a fuse.

Secondly, I cannot see how moving the computer to another room will help a game load, as you are using the same power supply.

The amount of power a computer consumes is very small; my own Sanyo only takes 11 watts (that's roughly 1 tenth of a 100 W light bulb), printers use approx 80 watts and TVs around 70W.

The fuse rating therefore reflects this. Would you put a 3 amp fuse in your 2 bar electric fire (2kw)? Nope, neither would I. In short I would not recommend anyone to put a higher rated fuse into any appliance other than that stated. If you still get unexplained 'crashes', as a last resort, buy a mains filter. These are simple boxes that fit betweeen the socket in the wall and your equipment, and eliminate most of the power surges and spikes that otherwise cause us to tear our hair out! I hope this will be of some use to someone out there.

## Brian McCalmont <br> Co Down, NI

## - That ol' rubber devil

Help! I'm in a bit of a pickle and you can most certainly help me.

I am one of the elite few that still own a rubber-keyed Spectrum. I have been considering getting a more up-to-date and different computer. This happens to be in the shape of an ST with mono monitor. I was wondering if the ST is as good
was wondering if the ST is as good as it is cracked up to be and would it give me value for money? And is it worth trading in my Speccy or is it worth selling?

## Alex West <br> Norfolk

Well, the ST is a real nice machine, and you're unlikely to be disappoined with it. But is a mono monitor really what you want? If you want to play games or get in to graphics, then perhaps you should stump up the extra cash for a colour monitor, or just use your TV set. I don't know if any dealers will take your Spectrum on partexchange but if they do, I doubt that you'd get what it's worth. If you're going to get rid of it it's probably better to sell it, especially if you can also offer your software collection.

## Deluxe Paint for ST?

I was wondering if you could tell me whether any of the Deluxe Paint range (for the Amiga) would be available for the Atari ST. Even though there are a few paint programs out for the ST, none of them really match the capability of the Deluxe range.

## Matthew Owen London

Electronic Arts tells us that there are no plans at present to produce versions of the Deluxe range for the ST. If it were to happen, it would be quite some way in the future.

## - Back Issues

I am interested in obtaining back copies of your magazine ACE. The issues required are issues one to six. Please let me know the cost of these magazines and I shall send on the money.

If possible I should also like to obtain current and future copies of ACE. Thanking you in anticipation.

## Mel Mc Carthy Co Cork

For back issues of ACE you should contact our Somerton office - the address and phone number are on the Contents pages. The price is £1.50. but hurry - there aren't many copies of the early issues left. If you want to get ACE regularly throught the post the best thing to do is take out a subscription; see the offer and form on page 99 .

## - Arkanoid - that head

Please could you give me an explanation on why after six months of battling through 32 screens of Arkanoid, on my Speccy +2 and getting absolutely nowhere on THAT HEAD (The last screen) on

## Christmas tragedy

"Death, where is thy sting! "I cry...I am writing to tell you about the most disastrous Christmas Day on record.

It was Christmas Day and I had ust spent a good quarter of an hour setting up my new Amiga. At last it was ready, and after spending the morning reading the manual I switched it on. In went the Workbench and I surveyed its functions, before falling asleep with boredom, I took out the Workbench and reset the computer. Then I tried to insert the game, Test Drive which cost me two Christmas presents and one month's pocket money. "Dismay!" I screamed, (or something to that effect), the disk didn't click into place. I tried again for an hour or two we packed the computer away so we could take it back to the shop as soon as possible. I then spent the rest of the day thoroughly miffed, in front of the TV.

Come Boxing Day and we tried to phone the company we bought it from, there was no reply. Sunday came and there was still no reply. I was getting worried now and I just couldn't stop thinking the dealer had left the country after selling off faulty computers before Christmas.

I decided to just try once more, so full of hope I lifted the computer
the original tape, why should it be so easy to get through THAT HEAD on Arkanoid on the new release (Magnificent Seven). In the original tape a lot of aliens come at you form THAT HEAD'S mouth as soon as you get through to it. But as soon as you get through to THAT HEAD on Magnificent Seven, no Aliens. Could you give me a reason why this is so. So therefore to conclude, a tip for your Tricks ' $n$ ' Tactics page would be to get Arkanoid on Magicent Seven TO BEAT THAT HEAD.

## Mr F E Perks Cudworth

We haven't really played the Mag 7 version of Arkanoid, so we can't offer any advice. But there must be readers out there who can offer advice.

## - Outrageous Out Run

Well, we've just received our copy of Out Run for the Spectrum and 48 K and loaded it up. What a disappointment that needn't have been!

Okay perhaps, there isn't much to be done about the music, given the spec's limitations, but we can live with that - just stick the sound track on. But the colour!

This is where a potentially excellent conversion fails miserably. The same fault occured with Enduro Racer. The backgrounds were fine and in Out Run, the top half of the screen is okay. But when you get down to the mountains,

out of the box and slid in a disk, "click" went the computer "thank god!" I shouted. I then proceeded to play on it for the rest of the day. For me Christmas had just began.

Please tell me why the disks wouldn't be accepted and how it could possibly work again just like that.

## Anonymous <br> Great Budworth

A sad tale with a happy ending there wasn't a dry eye in the office when I read it out. And just to make sure you stay happy, we're giving you a nice prize. Why are we such nice people?
roadway and the gleaming red Ferrari Testarossa, you encounter these murky BLACK things and somewhere amongst that chaos is you, the car and the girl.

It needn't have been like this. The use of blue for the road graphics would have improved appearance tremendously and where is the RED car?

Super Hang On was closer to being on the "right track" - at least the bike had some colour in it.

So, there is our opinion. The avoidance of black would have made a world of difference. This game should be recalled and corrected. Then it would give the pleasure that it comes so close to doing.

## Frank \& Lee Frank Leylard Merseyside

We've yet to find anyone who's bren satisfied with Out Run. We certainly weren't.

## - Happy destruction

Continuing the discussion on violence in computer games I would like to express my personal views. A few nights ago I was watching a documentary about the Hungerford killings and remarking to myself how terrible it was whilst playing into The Eagles Nest and happily destroying hundreds of men myself.

I believe that people like me do not enjoying playing a shoot-em up like this because they are causing deaths and may get into the Hall of

Fame. It would make no difference to the average game player whether they were shooting humans or mutant rubber ducks.

Although I do not condone the marketing of such violent games, I really cannot see how they can cause such apparent damage to the players' minds.
P.J.B

London

## Another idealist

would firstly like to say that I think ACE is very good value at $£ 1.50$, considering what it offers. However, there are a few things that could be altered to improve the magazine.

Firstly, considering that you are catering for all computers, don't you think that four or five pages is a bit mean? Secondly, could you make the PBM column bi-monthly rather than 'an occasional feature'. Thirdly, why don't you do a series of features on public domain software? And finally considering that the magazine is Advanced Computer Entertainment, do you not think that the Comms World deserves a two or three page regular slot? In it you could review the software, interfaces and modems available for the different computers, as well as the services such as Prestel, Mircronet, and the scores of bulletin boards.

I hope that by making these comments I have not demeaned your magazine, or that you will not just throw this letter away, thinking 'Oh there's another idealist'

## Julian Cater <br> East Sheen, London

Julian - we adore idealists. To take just one of your suggestions, we plan to do something on the world of comms real soon now.

## Christmas cracker

For Christmas I had a Spectrum 128 and I thought that Gauntlet looked like a good game so I bought it. I played it over and over again, and thoroughly enjoyed it. One night I was playing it and something strange happened. I was on screen 43 when my health went up to 10,000 and exits just appeared from nowhere - lots of them, not just one. Then I was transported to screen 70 . I thought there were only 64 screen so I was surprised to see this.

I kept on playing and this kept on happening. Before I knew what was happening I was on screen 173. Is this because of a bug or are there that many screens? Have you ever had this trouble? Please tell me your opinion on what it could be, as I know you could.

## Nathan Skinner <br> Credition

We invite readers'comments on this strange phenomenon.


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# Mike Singleton, programmer extraordinaire, talks to Steve Cooke about Maelstrom Games and chartbusters to come. 

# INTO THE MAELSTROM 

I think I'm going to write a text-book on vector graphics after this,' murmured Mike as I gazed in awe at the 3-dimensional display he'd just set up on his ST. I kept quiet, as anyone would because I was furiously trying to work out just how anyone could get a machine to do what I was watching at such pixel-scorching speed
'Actually it's easy when you know how,' said Mike as the spinning polygon shimmered off into deep space, '..but that's exactly what I'm not going to tell you' Who cares about the technicalities, though, since this game - Whirligig - should be showing soon on an ST somewhere near you. Mike looks as if once again he's going to dazzle the games world by taking an existing format - in this case, the 3D shoot-em-up - and completely transforming it by adding his own peculiar brand of magic

He's done it betore, of course. Lords of Midnight demolished most people's preconceptions of strategy and adventure overnight by introducing 'landscaping' and the ability to control lots of different characters within a game. In Doomdark's Revenge he sharpened his own formula, bringing out a game of stunning complexity. Recently. with Dark Sceptre, he gave the Spectrum large-scale sprites and solved the character attribute problem at the same time with the simple but ingenious method of giving each sprite a black outline.

One of Mike's latest creations could be his greatest, though - and it's not even a game. It's his own company, Maelstrom Games Ltd, and together with partners


Nick 1 like to mess around with the Amiga chips' Plant (left) and Dene I'm an ST man myself' Bennett - two of Maelstrom's up and coming coders. Dene's dreaming of an expanding Archimedes market - I did a sample BASIC program on the BBC Master and then

Malcolm Hellon and Hugh Batterbury, he's preparing for some even bigger hits in the months to come.

## TOWARDS 16 BITS

Games are becoming more and more oomplex.' said Mike after we'd finished goggling at Whirligig. 'It's no longer one man and his computer doing all the work, you need a whole team - which is why I wanted to set up Maelstrom.' So now gathered in a small house in Wallasey near Liverpool are seven programmers who together take care of coding. graphics, and music. You get some idea of the expertise when Mike, who is no sec-ond-rate programmer himself, says that his real job is in design: I feel that's where I'm
best employed, because there are already $a$ lot of good programmers around.'

Certainly both the games under development, Whirligig and Grimblood, show the benefits of this approach. Mike and Malcolm toss ideas around ('We argue about it for weeks') and then both can work on the project sharpening the design and at the same time advising the programmers. Many other software development houses work to game designs produced by non-programmers, which often leads to confusion at the coding stage, but there are no such problems at Maelstrom.

The 16 -bit revolution is something Mike has strong views about. 'First,' he says, 'you've got to do a lot more on the machines.

## Getting the ideas together



Mike Singleton and partner Malcolm Hellon, pulling together on a new game idea...

Malcolm: I come up with an idea, and Michael comes up with an idea...
Mike: ... and then we argue about it for weeks. We bounce an awful lot of stuff around here.
Malcolm: You're trying to pin-point that special 'something' that all good games have. All of the really successful games have got a special property, which boils down to imagination.
Mike: Looking at things from a completely new angle.
Malcolm: Yes, I'm thinking particularly of Ant Attack and Sentinel - they were both really strange games...

While this elevated discussion was going on, the two maestros were staring at...a version of Life on the ST! 'I could sit and watch this for hours,' said Mike, who's reprogrammed numerous versions of the old classic, using colour planes and new rules to generate mesmeric displays. Aha...so THIS is why Star Trek was so late!

You won't find many companies in future putting out quality stuff for the ST and the Amiga at £9.99. But to make up for that there's all the excitement of the new machines. there's no 'state-of-the-art' standard for 16 -bit. No-one knows how far you can push the things:

What about the ST versus the Amiga? The Amiga's a pig to progrom - the operating system keeps trying to take over what you're doing. The ST on the other hand is a bit like a 16 -bit Spectrum - it's just a bare machine with no funny bits, but with the Amiga you've got to set up this chip, set up that chip... Luckily Mike's programmers aren't quite so STruck by the Atari - Nick

Plant in particular really enjoys programming on the Amiga, so no Commodore owner need feel that their machine is getting a rough deal.

As it is, 8 -bit Maelstrom games are still going to appear 'We've got a lot of contracts for the 8 -bit market;' says Mike, so Spectrum and Commodore owners aren't going to be left out in the cold, even though there are going to have to be a few compromises in some of the 8 -bit versions. In Grimblood, for example, much of the animation has had to be left out on the 64, as well as some of the variety in the faces. Shouldn't affect the playability too much, though, so keep your fingers crossed.


Hugh Batterbury - Hugh has the unenviable task of making sure all the figures add up, not to mention his involvement with game design.

## So you want to be a programmer?

We reckon that ACE readers are on the top of the pile when it comes to talent and initiative, so Mike suggested that we let you all know that Maelstrom Games are looking for someone to join their programming team. You need to live within travelling distance of Wallasey and have some programming experience. Write in with a CV to 23a Seaview Road, Wallasey, Merseyside, L45 2QN.

For those of you who live outside that area, Mike has some sound advice if you're planning a career in games programming. 'Just get yourself a machine - whichever one you can afford - and start playing about with it', he says, and Malcolm points out that '...if you can master BASIC then you can master a low-level language, assembler, or machine code.' So there's no need to worry overmuch about which language you work in, provided you can get reasonably proficient at it. So grab that manual and get coding - your country needs you!


David Ollman and David Gautrey, beavering away on Grimblood - you could be joining them it you've got the right credentials.

## ON THE BOIL...

## Grimblood

First out of the memory banks could be Grimblood, scheduled for release later this year by Melbourne House. Maximus Snarl, 79th Earl of Grimblood, is having a spot of bother in the ancestral home. One of the inmates is knocking off the other guests and your job is to track down the assassin and put the finger on him, before he does the same to you,

Once again, it looks as if Mike's team is going to be able to put a whole new slant on an old game-idea. There are elements of Cluedo and Lords of Midnight as you move among the different locations in company with 24 other characters. Digitised faces glower at you from the screen, each with many different expressions that change according to mood. Mysterious rainbow-hued figures glide across the display as you ask questions and issue commands to other characters. Finally, you can make your accusation - but if you get it wrong you move a little higher up the assassin's list.

With so many digitised graphics (and digitised speech to boot), Grimblood has been pretty hungry on memory, which threatens a compromise on some of the 8 -bit versions. Even here, however, the programmers have turned a disadvantage into a new game feature - 'We've
got a compression system that squeezes the pictures by up to 10 times, but the best thing is that we can decompress to whatever scale we like in real-time. In practice, there are about 16,000 different scale sizes possible'. You can well believe it as you see the figures walking out of the screen towards you, growing in perspective as they move.

## Whirligig

From mediaeval murder mystery to 3D frantic shoot-em-up, Maelstrom really show their paces here. Whirligig's main asset is its speed and smoothness on-screen. The programming techniques allow very complex shapes to be presented on-screen in true 3D with the result that you get a geometric spacescape not unlike a screen from Driller, but very much faster.

Whirligig, although currently running on an ST, shows that the 8 -bit market still has a hold on Singleton's programming habits. I first worked out the graphics routines on the Spectrum - in fact it was originally conceived as an 8 -bit game, but it would obviously look so much better on a 16 -bit machine:'

Speed isn't this game's only strong point. Although the gameplay is still being worked on, the graphics alone are enough to make you stop
and stare. Mike has managed to introduce a new element into 3D graphics that adds tremendously to the realism of the display ...but...I'm not allowed to tell you what it is! Aaaghgh! The frustration! Ah well, guess 'IIl just have to stump up that fiver atter all, and tell you all about it next month...

## Delivery dates

Both Grimblood and Whirligig look like pretty strong chart contenders - but when will we see them? If there's one thing Mike's renowned for, it's missing deadlines. Fans of Star Trek will know that prompt delivery isn't exactly Mike's style, but he's very quick to defend himself: 'Yes, I've certainly got something to say about that - most of the games where poor old Mike Singleton has been singled out for missing deadines have not been games where poor old Mike Singleton has been doing the programming. That was the trouble with Star Trek, for example - half the programming team just beamed off in the middle of the project. We just had to start off again with a fresh team.' The same thing happened, apparently, with Dark Sceptre. OK Mike, we'll let you off the hook...just this once.

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FREE

The chronicles of the 'Knights of the Avalon', is a new 100 player computer moderated Fantasy Play By Mail game from JADE Games. Startup is FREE, with further turns costing 80p players outside of the UK £ 1.00. The game features, 1000 s of player armies and fleets constantly involved in conquest, a playing area of $1,250,000$ sq miles with over 100,000 locations. A highly developed class system of squires, knights, lords etc fighting to become emperor. An economic trade system with $1000+$ trade items, merchant and political banks, stock markets and trade treaties. Religions based on a planet wide network of temples and monasteries. Players having the choice of accepting one of the twenty existing gods or creating their own god and religion. A hierarchy of gods capable of direct interaction with players. Alliances of trade, religion, politics and military might. + MUCH MUCH MORE, garnes limited only by the players imagination.


This month sees the introduction of a whole new regular section to the Pink Pages - Random Access - designed to baffle, perplex and entertain you. We've also updated and redesigned the harware and software buyers' guides to make it even easier for you to find the vital information you'll need before making that expensive hardware or software purchase.

# ACE RECOMMENDED SOFTWARE 

## ARCADE ADVENTURES

These games usually give the player a joystick controlled character with which to explore the huge game area.

## AIRBALL

Microdeal Atari ST $£ 24.95 \mathrm{dk}$
Mult-coloured three dimensional arcade adventure that owes something to the Ultimate style but is years ahead in terms of graphic detail and presentation. You, as the airball in question, must negotiate corridors and rooms full of various obstacles - all spelling instant death. An outstanding rendition of a popular genre.

## EAGLE'S NEST

Pandora - Amiga $£ 19.95 \mathrm{dk} \bullet$ Atari ST £19.95dk

This is one of the better Gauntiet clones, especially on the 16 -bit machines. The mitary flavour of the arcade adventure adds atmosphere and if you like this particular style of game, you won't be disappointed with Eagle's Nest.

## HEAD OVER HEELS

Ocean - Spectrum £7.95cs C64
£8.95cs $£ 12.95 \mathrm{dk}$ Amstrad $£ 8.95 \mathrm{cs}$ £14.95dk MSX £8.95cs - IBM PC £19.95dk
3D exploration reaches its peak with this huge intricate masterpiece. You play two characters - Head and Heels - as you search for the crowns that will free the galaxy. The puzzles can get very difficult indeed, and you'll often have to split Head and Heels up to use their different capabilities. The game's 300 locations are wittily drawn, and the animation is excellent throughout. $A$ real classic.

## MAGIC KNIGHT <br> TRILOGY

Mastertronic - Knight tyme Spectrum $£ 2.99$ cs Amstrad $£ 2.99 \mathrm{cs}$ - Spellibound Spectrum $£ 2.99$ cs Amstrad $£ 2.99$ cs C64 £2.99 cs - Stormbringer Spectrum £2.99 cs Amstrad £2.99 cs
This trilogy is a series of menu-driven arcade adventures which, as well as all the expected running and jumping, have
a complex system of interaction between characters. In Spellibound you must res. cue Gimbal the Wizard from the fearsome Castle of Karn; in Knight Tyme you have to find a way back in time after being catapulted into the 25th century. while in Stormbringer, the final part, we
find that the magic knight has been split in two, one part good, the other evil. You can't kill yourself, so the only solution is to merge the two halves. But how? Lots of action, plenty of thought and good graphics make all three winners.

## BALANCE OF POWER

Mindscape/Mirrorsoft Amiga $£ 26.95 \mathrm{dk}$ - Atari ST $£ 26.95 \mathrm{dk}$ IBM PC $£ 26.95 \mathrm{dk}$ - Mac $£ 26.95 \mathrm{dk}$

Definitive strategy game for 16 -bitters. The player takes the role of one of the superpowers, while either the computer or a friend takes the other. Then it's a case of trying to win friends and influence people on a global scale. This can be achieved in a number of ways, including supplying arms or financial aid to radical
factions in the hope of toppling a government which is not receptive to the great American or Russian dream (depending on which side you're playing). It's complex, involving and it's difficult to play in ten minute sessions. Absorbing stuff that gives an insight into the devious world of geopolitics.

## DIPLOMACY

Leisure Genius - C64 £12.95cs £14.95dk PC £24.95dk
The grand old man of nasty negotiation

FACE RECOMMENDED SOFTWARE

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boardgames finally made it onto home computer and how! The game can handle up to seven players and it's an engrossing and madly addictive game that's a must for micro megalomaniacs.

## UMS

Rainbird Atari ST $£ 24.95 \mathrm{dk}$ - IBM PC £24.95dk Macintosh $£ 34.95 \mathrm{dk}$ Amiga £24.95dk

Rainbird's Universal Military Simulator is designed to simulate a conflict between two torces on a user-definable terrain that can be viewed in three-dimensions from any one of eight directions. The program heralds a new era in 16 -bit computer
wargaming. The ST version is available now with the other versions following shortly.

## VULCAN

CCS Spectrum $£ 9.95 \mathrm{cs}$ - Amstrad £9.95cs
An elegant. simple and ingenious wargame, Vulcan covers the Tunisian campaign of 1942-43. A huge playing area and air atlack phase make the game an improvement over the same author's earlier works Arnhem and Desert Rats. Vulcan is tast, efficient and simple to play, and no selt-respecting wargamer should be without it.

## SIMULATIONS

Games that put you at the contols. Whether you're flying helicopters, or aeroplanes, or steering bobsleighs, simulation games can become very involving.

## BOBSLEIGH

Digital Intergration - Spectrum $£ 9.95 \mathrm{cs}$ - Amstrad $£ 9.95 \mathrm{cs} £ 14.95 \mathrm{dk}$

Bobsleigh is a thrilling game with enough strategy involved to add another dimension to a highly competent and addictive simulation. Have you got the stamina to win your way into one of the top three positions by the end of the season? Remember, sponsors don't back losers. Unfortunately, though Bobsleigh is available for the C64, its a poor game compared to the Amstrad and Spectrum versions and is therefore not recommended.


## CHUCK YEAGER'S ADVANCED FLIGHT TRAINER

Electronic Arts - C64 £9.95cs £16.95dk - PC £24.95dk

Chuck Yeager's flight trainer takes the fight simulator genre a step further by including a training option. Chuck will guide the novice through such difficult moves as aileron loops and rolls. With so much in one package it will take many hours of instructive fun to master all the avilable options.

FLIGHT SIMULATOR 2<br>Sub-Logic Atari ST $£ 49.95 \mathrm{dk} \bullet$ Amiga £49.95d IBM PC £49.95dk

The venerable godfather of flight simulations, Flight Sim II is the standard by which all others are judged. Although it spent a zillion weeks on top of the US charts, it's difficult to get hold of in the UK. If you have the technology, this is an essential purchase.

## GUNSHIP

Microprose PC $£ 34.95 \mathrm{dk}$
Excellent graphics, involving simulation and a variety of missions make this one of the better PC games. Piloting your 'copter around in order to zap various gooks may not be lerribly tasteful - but if you can stand the politics you should have a lot of fun.

## LEADERBOARD

Access/US Gold - Spectrum $£ 8.99$ C64 £9.99cs $£ 14.99 \mathrm{dk}$ Amstrad £9.99cs $£ 14.99 \mathrm{dk}$ Atan ST $£ 19.99 \mathrm{dk}$
If you only buy one golf simulation for your collection, make sure it's Leaderboard. It's head and shoulders above everything else on the playability and realism stakes, easy to get into, with delighttul graphics and some wicked courses. Once you've mastered the courses on the original version, tackle Toumament Leaderboard and then World Class Leaderboard (based on real courses, including St Andrews, and also containing the Gauntlet Country Club. a course devised by Access to be as difficult as possible).

## TOMAHAWK

Digital Integration © Spectrum $£ 9.95 \mathrm{cs}$ Amstrad $£ 9.95 \mathrm{cs} £ 14.95 \mathrm{dk}$ - Atan ST £24.95dk
One of the all-time great flight simulators, Tomahawk also has a strong combat edge to it. Flying a US Army Apache helicopter is a complex business, and the game's realistic controls make no concessions for learner pilots. Choose one of the three combat missions and you can fly out to attack ground targets, while keeping a weather eye open for enemy aircratt. Landscape, buildings and vehicles are all drawn in crisp vector graphics.

## PUZZLES

If youre atter a game that will provide you with a real challenge, without neccesarily requiring large doses of strategic thinking, then it's a puzze game you want.

## BONECRUNCHER

Superior Software C64 $£ 9.95 \mathrm{cs}$ £11.95dk
At first sight this recent release may appear to be nothing more than a Boulderdash rip-off. However there are a number of highly innovative gameplay features which give Bonecruncher a feel all of its own. Highly recommended for those who prefer to solve problems rather than shoot them.

## BOULDERDASH

Prism Leisure Corporation - Spectrum £2.99cs - C64 £2.99cs - Amstrad £2.99cs
A game that has everything - instant addiction, long-term challenge, frenetic excitement as the clock ticks down and extremely tricky puzzles. You must collect jewels hidden in caverns, digging away earth and boulders to get at them. Boulders can drop and cause you serious damage, while the jewels are often hidden by seemingly impenetrable walls. Complex, but great fun. Boulderdash is a classic you can't aftord to miss in its budget incarnation.


## DEFLEKTOR

Gremlin/Vortex - Spectrum $£ 7.99 \mathrm{cs}$ C64 £9.99cs $14.99 \mathrm{dk} \bullet$ Atari ST £19.99dk
Optics are the order of the day here (not the spirit dispensers) as the player tries to connect a laser beam to a receiver and at the same time destroy a number of cells that are on-screen as well.You'll need to make full use of the mirrors, fibre-optic conduits and polarising and refracting blocks if you're to achieve your aim. Clear the first screen and you'll only have 59 more to do. Fascinating stuff that's horribly addictive.

## nebulus

Hewson - C64 £8.95cs £12.95dk Spectrum £7.95cs
Guide pogo to the top of eight towers using the spiral of plattorms, lifts and ledges that form the route. It's a highly
original game game that strikes a fine balance between frustration and addiction, added to which is the rotary scroll, thus making it a good looking, playable winner of a game.

## SENTINEL

Firebird - Spectrum £9.95cs - C64 £9.95cs $£ 14.95 \mathrm{~d}$ - Amstrad $£ 9.95 \mathrm{cs}$ £14.95dk Alari ST $£ 19.95 \mathrm{dk}$
Bizarre and compelling strategy game played over the chequered surface of a planet dominated by the Sentinel. Fundamentally you have to absorb energy while trying to stop the Sentinel from absorbing yours. A clear brain and fast trigger finger are both necessary in this very original and large - 10,000 possible landscapes - game.

## SKULLDIGGERY

Nexus Atari ST £19.95
Boulderdash clone that completely outdoes the original on this particular machine. Again (see Boulderdash. above) you're digging for diamonds in caverns over 100 different screens - with a time limit for each screen. Skulldiggery scores on playability (easier screens to begin with and a choice of starting point) and its entertaining two-player option.

## SPORE

Bulldog - C64 £1.99cs - Amstrad E1.99cs © Spectrum 1.99 cs
The winning combination of strategy, frenzied blasting and great graphics make Spore a worthy full-price release what a bargain then to be able to pick it up for $£ 1.99$ !

## TETRIS

Mirrorsott - Spectrum E8.99cs £19.99dke C64 £8.99cs $£ 12.99 \mathrm{dk}$ Amstrad £8.99cs $£ 12.99 \mathrm{dk}$ Atari ST £19.99dk Amiga $£ 19.99 \mathrm{dk}$ IBM PC £19.99dk
A fascinating geometrical oddity, this Russian puzzler turns the obscure mathematical topic of packing into a cult game. One at a time, shapes fall downwards into a rectangular playing area. Left to their own devices they'll pile up until they reach the top of the screen: your task is to guide them down and pack them in tightly so that doesn't happen. Different versions have proved to be rather variable in their arcade aspects, but the briliantly simple idea behind them means they're well worth a look whatever your machine.

## THINK!

Firebird - Spectrum $£ 1.99$ cs - C64 £1.99cs Amstrad £1.99cs
Originally released by Ariolasott at full price, but now available for a fraction of that from Firebird. It's a horribly addictive game played on a $6 \times 6$ grid - either one

FACE RECOMMENDED SOFTWARE

## K \& M COMPUTERS

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Extremely tricky maze game involving the player controlling two shields, and collecting masks through 15 mazes, which increase in complexity as you progress. Also in later stages, fish and chickens lie in wait, often blocking the masks and just waiting to fall on you and bring your quest to a premature end. Later still, the fish and chickens are the least of your worries as bombs, transporters and dolls crop up to conspire against you. Smooth scrolling, simple graphics, this one requires planning to complete successful-


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## CHESS MASTER 2000

Electronic Arts - C64 £9.95cs £14.95dk Amiga $£ 24.95 \mathrm{dk}$ Atari ST $£ 24.95 \mathrm{dk}$ •IBM PC $£ 24.95 \mathrm{dk}$
Strongest chess game on the Amiga, with excellent graphics, $2 D$ or $3 D$ view point, 12 levels of difficulty and all the playing options you could wish for. Plus some fairly nifty speech synthesis.

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and chance. A tutor program and short manual make this an easy to use and highly entertaining piece of software for veterans and novices alike.

## INFOGRAMES' BRIDGE

Infogrames - Amstrad $£ 12.95 \mathrm{cs}$ £15.95dk MSX £12.95cs
Graphically the best of all contract bridge simulations, with large playing cards depicted against a suitably green baize background. Plays a good game (for a computer, which after all is a bit short in the imagination and flair department), and features a wide range of options and bidding conventions which you can toggle on and off according to your style.

## POWERPLAY

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If you want to try out your general knowledge, we reckon you'd be better off with this original and challenging combination
of strategy game and quiz than with the admittedly monster-selling Trivial Pursuit. Powerplay is graphically very pretty in its setting on Mount Olympus, home of the Gods.


## SCRABBLE

Leisure Genius - Spectrum £9.95cs C64 £12.95cs $£ 14.95 \mathrm{dk} \bullet$ Amstrad £9.95cs $£ 14.95 \mathrm{dk}$ IBM PC $£ 24.95 \mathrm{dk}$
The hugely popular word game translated very successfully onto the micro. Fast, excellent display, and a surprisingly large vocabulary (even it it does include some strange looking words on occasions). Good enough to give even strong human opponents a tough game at the higher levels.

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## ARCADE-STYLE

Including coin-op conversions. Games with a high fun factor and plenty of addictiveness feature here.


ARKANOID
Imagine - Spectrum £7.95cs © C64 £8.95cs £12.95dk Amstrad £8.95cs $£ 14.95 \mathrm{dk} \bullet$ Atari XLJXE $£ 8.95 \mathrm{cs} \bullet$ Atari ST £14.95dk MSX £8.95cs $\bullet$ IBM PC £19.95dk
Conversion from Arkanoid the coin-op, in its turn the best version of the classic Breakout Simple in concept: the player controls a bat at the base of the screen, whizzing it left and right. The object is to keep a small ball in play, bouncing it off the bat to destroy formations of bricks in the top half of the screen. Eliminate all the bricks and move on to the next of 33 screens. Clever extra features contribute
to the addictiveness. As a faithful coin-op conversion, Arkanoid comes out top, but for a different slant on the same theme and some nitty music, try ASL's Impact. which also builds up the difficulty levels more gradually.

## BOUNDER

Gremlin Graphics Spectrum $£ 7.95 \mathrm{cs}$ C64 £9.95cs $£ 12.95 \mathrm{dk} \bullet$ Amstrad £8.95cs £13.95dk

A great arcade bounce-em-up, and very addictive too. You guide a ball as it bounces from one platform to another high above the vertically scrolling landscape. Land on marked squares and you can stay aloft longer or gain a mystery bonus. Fill in a gap or hit one of the game's many nasties, however, and you'll lose a life. Bonus bouncing sections at the end of each level help vary the pace, and those fough gaps really keep you coming back for more. Bright, witty graphics, great music - and it's so playable.

## BUBBLE BOBBLE

Firebird - Spectrum $£ 7.95 \mathrm{cs}$ - C64 £8.95cs $£ 12.95 \mathrm{dk}$ - Amstrad £8.95cs
£14.95dk Atari ST £19.95dk
Playability is the essence of this twoplayer coin-op conversion. You and a friend play bubble-blowing dinosaurs, travelling through 100 maze-and-platform screens, fighting off the "bullies" by encapsulating them in your bubbles to furn them into juicy fruit. More firepower and various bonuses await as you reach the more dificult later screens. Enormously good fun, if a little on the cutesy side. Can also be played as one player against the computer.

## BUGGY BOY

Elite C64 £9.95cs £14.95dk Amstrad £8.99cs $£ 14.95 \mathrm{dk}$
A non-stop action driving game that will keep even the most ardent Out Run fans busy for a long while. Collect the time bonuses in the attempt to complete the five gruelling courses. Instantly playable and highly addictive, Buggy Boy should be on any racing fan's shopping list

## COSMIC CAUSEWAY

Gremlin £9.99cs £14.99ck
The follow-up to the very popular bouncing ball game Traiblazer. The 24 stages of the scrolling landscape race toward you at breakneck speed as you try to guide your ball through the mulitude of obstacles. Less technically demanding than Traiblazer but much more fun and withtremendous variety.

## EXOLON

Hewson - Spectrum £7.95cs - C64 $£ 8.95 \mathrm{cs}$ £12.95dk Amstrad $£ 8.95 \mathrm{cs}$ £14.95dk
Graphically superb horizontally scrolling shoot-em-up in which you run, duck and jump your way along a planet's surface blasting away at alien defences. A gun and a missile launcher are used to blast the foes, but if things are still too tough then you can grab an exoskeleton for extra protection and fire power

## HIGHWAY ENCOUNTER

Vortex (available on The Best of 3D compilation from US Gold) - Spectrum $£ 8.99 \mathrm{cs} \bullet$ Amstrad $£ 8.99 \mathrm{cs}$
Each game in this compilation is an excellent example of Vortex's 3D animation and tough gameplay, but Highway Encounter stands out in both departments, as you plot your route along said highway fighting off threats from a mutant tribe of dustbins

## PITSTOP 2

Epyx/US Gold Available only on Epyx Epics compilation - C64 £9.95cs 14.95dk •IBM PC £29.95dk (in compiation with Winter Games and Summer Games 2)
Thrilling racing game where the screen is split into two and you can race the computer or a friend. Lots of different Grand Prix circuits, tyre blow-outs and of course

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## STARGLIDER

Rainbird © Spectrum $£ 14.95 \mathrm{cs} £ 19.95 \mathrm{dk}$ - C64 £14.95cs $£ 17.95 \mathrm{dk}$ - Amstrad £14.95cs $£ 19.95 \mathrm{dk} \bullet$ Atari ST $£ 24.95 \mathrm{dk}$ - Amiga $£ 24.95 \mathrm{dk}$ IBM PC $£ 19.95 \mathrm{dk}$

Stargifider is a shoot-em-up cum strategy game boasting vector graphics at their very best. The screen is essentially your view from the cockpit, your objective is to destroy the 'starglider, flagship of the Egron forces who have invaded your homeland Novenia. Standard issue scenario, but an outstanding game.

## SUMMER GAMES

Epyx/US Gold © C64 £9.95 cs $£ 14.95 \mathrm{dk}$ - Atari XE $£ 14.95 \mathrm{dk}$ (Summer Games 1 only) IBM PC $£ 29.95 \mathrm{dk}$
Epyx sporting simulations are of high quality but none have quite captured the playability and style of the original Summer Games and its immediate successor, Summer Games 2. One to six players can take part in high jump, gymnastics, springboard diving, clay pigeon shooting, swimming, pole vault - and others - with lovely large graphics and smooth animation throughout. Control of your athlete can be complex so practice is recommended.

## SUPER SPRINT

Electric dreams 0 C64 £9.99cs £14.99dk Amtrad £9.99cs Spectrum $£ 9.99 \mathrm{cs} \bullet$ Atari ST £19.99dk

One of the better coin-op conversions currently available. With up to three players all competing at once, the action is fast and furious and it will take a finelytuned car to complete some of the more tortuous circuits that appear later in the game.

## THRUST

Firebird - Spectrum £1.99cs - C64 £1.99cs Amstrad £1.99cs
Terrifyingly sensitive controls and a large helping of real-life physics make this budget title an absolute must. Flying down through the caverns of an enemy-held planet, you have to pick up fuel and destroy hostile gun furrets without crashing into the tunnel walis. Tough enough as it is, but then you've got to make the return journey with a heavy load slung
under your craft. Very mean, very addic


## THUNDERCATS

Elite - C64 £9.95cs £14.95dk - Spectrum £7.95cs - Amstrad £8.95cs £14.95dk
The game based on the hit TV series/comic/plastic toy. It's a side-on view scroller that just oozes gameplay Each of the game's 14 levels is a straight ine dash from start to finish with a multifude of obstacles to avoid along the way Graphically impressive and compulsively playable too

## URIDIUM

Hewson - Spectrum £8.95cs C64 £9.95cs $£ 12.95 \mathrm{dk}$ - BBC $£ 9.95 \mathrm{cs}$ £14.95dk
The piece de resistance of scrolling shoot-em-ups: blast the dreadnought and attacking ships while dodging around any large structures. Great metallic-looking dreadnoughts and the smoothest scrolling you'll ever see put this head and shoulders above the opposition. A game not to be missed, especially now that C64 versions come packaged with the excellent Paradroid.

## ZARCH

Superior Software Archimedes £19.95dk Amiga and Atari ST versions under development.

ACE'S highest rated game to date. A solid three dimentional shoot-em-up with such graphic perfection and timelessly addictive gameplay that it became an instant classic. Zarch could do for the Archimedes what 'the juggler' did for the Amiga.

## ADVENTURES

Adventure games require text input from the player and give a text response in return. There are many sub-categories, involving icon-control, graphic depiction of locations, and even speech output.

## THE BARD'S TALE

Electronic Arts C64 £14.95dk Amiga £24.95dk Atan ST $£ 24.95 \mathrm{dk}$ - IBM PC $£ 24.95 \mathrm{dk}$
Build a party of up to six adventurers and sally forth through the city in search of treasure, combat, and fame. Your character develops in experience during play and the task involved is pretty immense -
dont expect to tinish it inside a month or two.

## BEYOND ZORK

Infocom/Activision C64 £19.99dk Amiga $£ 24.99 \mathrm{dk}$ - IBM PC $£ 24.99 \mathrm{dk}$ Atan ST $£ 24.99 \mathrm{dk}$
Infocom's attempt to muscle in on the role-playing market is a great success.

## SPECIALS

Original works that are simply unclassiliable feature in this section.

## ATF

Digital Integration © C64 £8.95cs $£ 12.95 \mathrm{dk}$ - Spectrum $£ 8.95 \mathrm{cs} £ 12.95 \mathrm{dk}$ - Amstrad $£ 8.95 \mathrm{cs} £ 13.95 \mathrm{ck}$

Excellent combat/llight sim. See elsewhere in this issue for full review.

## DRILLER

Incentive © C64 £14.95cs £17.95dk Spectrum $£ 14.95 \mathrm{cs} \quad £ 17.95 \mathrm{dk}$ Amstrad £14.95cs £17.95dk
This three-dimensional masterpiece of exploration and adventure took a year to develop, but the wait was worth it. A whole world was crammed into 8 -bit micros to give the player such a feeling of being there' it's uncanny, It's bold, dazzlingly original and very playable. A milestone in computer entertainment.

## ELITE

Firebird - Spectrum $£ 14.95 \mathrm{cs}$ - C64 $£ 14.95 \mathrm{cs} £ 17.95 \mathrm{dk} \bullet$ Amstrad $£ 12.95 \mathrm{cs}$ £14.95dk BBC $£ 12.95 \mathrm{cs}$ £14.95dk (available from Superior Software)
Still the best space trading game, Elite set a standard for other companies to follow. One of the first space games to use vector graphics, if's a shooting and trading effort set across several galaxies, with plenty of variety to the gameplay. You can trade legal goods in (relatively) safe systems, or run the gauntlet of pirates in the galaxies' danger spots with your hold full of contraband. Either way there's a nice line in zero-G dogfighting. and as big a task as youll find anywhere.

## MATCH DAY 2

Ocean - Spectrum $£ 7.95 \mathrm{cs} £ 14.95 \mathrm{dk}$ • C64 £8.95cs $£ 12.95 \mathrm{dk} \bullet$ Amstrad £8.95cs $£ 14.95 \mathrm{dk}$
Definitely the tootball game on micros; magnificent animation, great gameplay. vicious and skilful computer opponents. Various improvents over the original make this a must for all computer football fans.

## QUEDEX

Thalamus I C64 £9.99cs £14.99 dk
In this impressively challenging game you must steer a metalicic ball through ten
different screens of mazes, bonuses and obstacles, all within a set time limit. This simple game concept has a host of added features to make it particularly pleasing: you can carry over unused time to the next screen, for example, and tackle the different screens or 'planes' in any order you wish. Excellent graphics and play utterly absorbing play.

## SPINDIZZY

Electric Dreams - Spectrum $£ 9.99 \mathrm{cs}$ C64 £9.99cs $£ 14.99 \mathrm{dk} \bullet$ Amstrad £9.99cs £14.99dk

Tremendous stuff; steer your spinning top over tough obstacles and collect jewels, against a fiendish time limit. The game landscape is a vast system of catwalks, ramps, towers, and trampolines surrounded by lethal drops - and NO satety rails. Floor switches activate lifts and bridge gaps, but tripping them in the right order can be harder than it looks. A few bad guys and a lot of nice touches, but the exploration's the thing.

## TAU CETI/ <br> ACADEMY

CRL - Spectrum $£ 9.95 \mathrm{cs} \bullet$ C64 £9.95cs £14.95dk Amstrad $£ 9.95 \mathrm{cs} £ 14.95 \mathrm{dk}$ - Atari ST £19.95dk • Amiga £19.95dk

Flight simulator/shoot-em-up and its sequel which are both incredibly smooth and well put together. The attention to detail is impeccable as you set off on hair-raising missions as a space cadet. In Academy you get to design your own space skimmer craft as well.

## WIZBALL

Ocean - Spectrum£7.95cs - Amstrad £8.95cs £12.95dk - C64 £8.95cs £14.95dk
A compelling and original ball game in which you become the wizball and must set out to conquer the 'colour creatures' which are intent on eliminating the spectrum and rendering the landscape grey and drab. Controlling the wizball is great fun and makes this one of the most playable game to have appeared for a long time.

Locate the fabulous Coconut of Quendor in a game that combines the wit and ingenuity of one of the world's most original software companies with state-ot-theart parsing and gameplay. Text-only, but with an on-screen mapping facility.

## GUILD OF THIEVES

Rainbird/Magnetic Scrolls - C64 £19.95dk - Spectrum $£ 15.95 \mathrm{dk} \bullet$ Amstrad 6128 £ 19.95 dk - Amiga £24.95dk IBM PC $£ 24.95 \mathrm{dk}$ Atari ST £24.95dk Macintosh $£ 24.95 \mathrm{dk}$
Britain's newest adventure software house produces a classic, traditional treasure hunt with state-of-the-art graphics and some very tricky puzzles. Powerful parser helps create a convincing game-
world with humour and imagination.

## JEWELS OF DARKNESS

Rainbird/Level 9 - C64 £14.95cs Spectrum 128 £14.95cs - Amstrad £14.95cs $£ 19.95 \mathrm{dk}$ IBM PC $£ 19.95 \mathrm{dk}$ - Amiga $£ 19.95 \mathrm{dk}$ Atari ST $£ 19.95 \mathrm{dk}$ - Macintosh $£ 19.95 \mathrm{dk}$

Level 9, Britain's oldest adventure programming family, have put together three of their classic releases, Collossal Adventure, Dungeon Adventure, and Adventure Quest on one disk. The games have been uprated with graphics and larger vocabularies and are as close to the original spint of adventuring that you're likely to find.


## Facc II foppy oisc ACCEIERATOR $\mathbf{f} \mathbf{2 4}$

Works best with added RAM. Can make 10 times faster.

DTG M F EMT $F A E f 185$ Including adaptor upgrade f 10

## DIG\| PAINT

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OHARDWAREIN BRIEF

## ACORN ARCHIMEDES

Models: Archimedes 305, 310 and 310M
Package: Keyboard, mouse and drive: key board. mouse, drive plus monitor (colour or mono): 310 M - M denotes inclusion of PC emulator
Memory: $305512 \mathrm{~K}: 310 \mathrm{wb}$
Processor: Acom ARM
Recommended Retail Price: Ranges from $£ 801,60$ for 305 alone $10 £ 1188.00$ for 310 M with colour monitor

At the cutting edge of micro technology - thus not cheap. Nor does it have the soltware base of longer-standing machines. Very exciting, but best left to the real enthusiasts for now.

Resolution: Either $320 \times 256$ or $640 \times 256$ or $640 \times 512$ (mutti-synch monitor)
Palette: 4096
Colours: From mono up to $256(320 \times 256)$ or $16(640 \times 512)$
TV: No
Monitor output: Mono - composite vidso colout - RGB + symc
Monitor supplied: Depends on package bought

Monitor Options: Acom dedicated. 14 inch medium res, colour; 12 inch high res mono Sprites: 1
Speed: Very fas
Speed
Speaker quality: Good
MIDI: Yes
Stereo output: Yes
Performance: 16 channels ( 8 stereo pairs): 6 octaves. one internal loudspeaker.

## AMSTRAD CPC

Models: CPC464: CPC664: CPC6128 Package: Keyboard, monitor (mono or colour) plus built-in tape disk. plus sotware Jusually 12 games), joystick. CPC664 is no longer manutactured but may be available on special otter from retailers in different packaging conligura tions.
Memory: 464;664 64K: 6128 128K
Processor: Zilog Z80
Recommended Retail Price: 464 mono
£199.99: 464 colour $£ 299.99$ : 664 unavailable 6128 mono $£ 299.99: 6128$ colour $£ 399.99$

The Amstrad CPC tamily is a value-for-money and versatile breed. You get everything you need and the whole business needs just one plug. Theyll do sterling service as games micros. but they are also able to tum their hands to more serious mathers.

Resolution: Mode $1320 \times 200$;Mode $2640 \times$ 200: Mode $0160 \times 200$
Palette: 27
Colours: Mode 1-4: Mode 2-2: Mode 0 -
TV
TV
Ye
Monitor Output: AGB - synch
Monitor Supplied:Yes
Monitor Options: Stick with Amstrad's own
need external power supply to use any inde-
pendent models
Sprites: None
Speed: Acceptable, slow scrolling
**
Speaker Quality: Adequate
MIDI: No
Stereo Output: Yes. needs cable

Performance: 3 channels. Has 8 octaves, bu is basically as for the Spectrum $+2-$ does have stereo output, if a little rudimentary.

## AMSTRAD PCW

Models: PCW8256: PCW8512: PCW9512 Package: 8256 - keyboard, monitor with builin single disk drive. dot matrix printer. Locoscript 1 word processing soltware, CPM operating system, DR Logo: 8512 - as above but with two built-in drives; 9512 - restyled keyboard. monitor with single buili-in disk drive. daisy wheel printer. Locoscript 2 word process daisy wheel
ing soltwre.
Memory: 8256256 K : 8512 512K: 9512 512K Processor: Ziog Z80
Recommended Retail Price: PCW8256
£343.85; PCW8512 §458.85: PCW9512 §573.85

The PCW range was designed as a word processing machine rather than a general purpose computer. Non-word processing soltware was produced after sales rocketed. Not recommended as a games machine.

Resolution: $720 \times 256$
Palette: 8256,8512 green and black: 9512
black and white
Colours: N/A
TV: No
Monitor Output: No
Monitor Supplied: Monochrome only, giving
90 column text display
Monitor Options: No
Monitor Opt
Speed: Not very fast
**
Speaker Quality: N/A
MIDI: Add-ons available
Stereo Output: No

## APPLE MACINTOSH

Models: Macintosh SE: Macintosh II
Package: Moritor with builtin CPU and disk Package: Montor with bu
drive. separate keyboard
drive. separate
Memory: 1 Mb
Memory: 1M
Processor: SE Motorola 68000: || Motorola 68020
Recommended Retail Price: SE $£ 2.294 .25$ upwards: II E4.329.75 upwards

A very expensive up-market machine for those keen on desk-top publishing. wimp systems and up-market software. Software is very expensive. Games are mostly limited to icondriven adventures. Good for MIDI musicians. but be prepared to pay through the nose.

Resolution: SE $512 \times 342$ - $111027 \times 760$ Resolution: SE $512 \times 342 ; 111027 \times 760$ Palette: SE black and white; $\| l$ with colour
monitor -16 millon Colours: Win coltur
Colours: With colour monitor - 1610256 TV: No
Monitor Output: Integral monitor
Monitor Supplied: Built-in
Monitor Options: SE - use dedicated model only: II Apple hi-res monochrome or AppleCol-
or hi-res RGB
Sprites: None
Speed: Reasonably fast

## ATARI ST

Models: Atari 520STFM: 1040STF, Mega STs Package: 520STFM and 1040STF keyboard Package: 520STFM
with buil-in disk drive
Memory: 520STFM 512 K : 1040 STF 1Mb; Memory: 520 STFM
Mega ST 2 or 4 Mb
Mega ST 2 or 4 Mb
Processor: Motorola 68000
Processor: Motorola 68000
Recommended Retail Price: 520STFM £299.99: 1040STF £499.99

Excelent as a general purcose home machine lor games. small businesses, and productivity - it's the number one choice for MIDI musi. cians. The ST's price could still give it the edge for arists over the Amiga.

Resolution: High res $640 \times 400$ : medium res $640 \times 200$ : low res $320 \times 200$
Palette: 512
Colours: Monochrome in high res, 4 colours in medium res, 16 in low res
TV: 520STFM yes; other models via TV modu lator
Monitor Output: AGBMonochrome
Monitor Suplied: No
Monitor Options: Atari monitors; SM124 high
res mono. SC1224 med res colour
Sprites: None
Speed:
High resolution is only available on mono
**
Speaker Quality: Good
MIDI: Third party interfaces available
Stereo Output: SE no: II yes
Performance: 4 channels. Performance good

Performance: Beeps only. Some third party
sound enhancement modules available
monitors; medium and low resolutions are only available on colour monitors or TVs

## ** *

Speaker Quality
MIDI: Yes
Stereo Output: No
Performance: Three channels; 8 octaves,
ervelope shaping

# UYERS＇ GUIDE 

Disk Format： 3.5 inch： 800 K formatted：built－in dive
Disk Price：Around $£ 300$
Disk Performance：Gcod and fast
Keyboard： 103 keys，programmable auto－ repeat rate．Keyboard has surpnisingly cheap feel given quality of machine
Joystick／mouse： 3 button mouse suppied： pystick not supported
Ports：RS423 serial：Centronics compatible
parallel： 9 －pin mouse socket 3.5 mm stereo jack： 64 way din： 41612 expansion port：IEC 320 video outlet：IO interface ；BBC compati－ ble）
＊ ＊
Existing Software Base：One game（Zarch） couple of databases（from Minerva Systems） art packages under developmem
Current Releases：See above
Games：One arcade title（ACE Rated 979）and
at least one more on the way．A couple of ackentures under development
Graphics：Potential is enormous：currently a couple of packages in the pipeline
Music：Again．enormous potential．Very Ittle activity as yet．however
Prospects：Very good．but not necessarily for games market
Sottware Loading：Competent，no obvious drawbacks

## Best buy price：As RRP

Second hand availability：Not yet
Maintenance：One year＇s guarantee．Faulty machines－return to dealer

Disk Format： 3 in flipoable： 180 K formatted per side： 664 and 6128 drives built－in， 464 dive extra
Disk Price：About $£ 3.00$
Disk Performance：Reliable and quick
Keyboard： 74 raised plastic keys with audble tactie feedback．Separate cursor cluster and redefinable numeric keypad．Very useable for word processing etc．
Joystick／Mouse：Standard 9－pin D－type．Third party mouse devices are avalable．
Ports：CPC464 PCB edge connector－takes disk dive and RS232C interlace．Centronics paralel， 6 －pin Din RGB with synch luminance． synch 3.5 mm stereo socket．joystick．cassette port：CPC664／6128 PCB edge connector－ takes RSz32C interlace．Centronics parallel
printer，add－on disk socket．joystick，cassette port．RGB with synch luminance．symc 3.5 mm stereo socket．expansionillO．TV

## 类类

Existing Software Base：Good，even if not as large as Spectrum or C64
Current Releases：Reasonable：most major Spectrum and C64 tites are converted Games：Good，but some converted fitles run slower than the Spectrum or C64 originals． Adventures OK，but infocom considering with－ drawing support for this format． Graphics：Good solection of tifles

Music：Reasonable number of tities．but poor in comparison with C64
Prospects：Uncertain．Atter initial interest． sales of CPC sottware have dwindled but there should still be a reasonable amount of games and utilities around
Software Loading：Tape loading is reason－ ably quick and reliable：disk loading fast and relabie

Best Buy Price：Shop arcund for best pack age．You could try for a CPC664 for around £60．00．but these are becoming increasing） rare．It the extra memory of the 6128 is not important．the CPC664 can represent a bar gain，if you can lind one．
Second Hand Availability：Very good．Otten plenty on offer in classified ad sections of spe－ oalist magazines．
Maintenance：One year＇s guarantee．Fauilty machines return to dealer． 664 statutory rights only．

Disk Format：3in flippable： 180 K formatted per side－ 8512 drive B and 9512 720K formatted： drive＇s built－in
Disk Price：About $£ 3.00$
Disk Performance：Fast and reliable Add－on drives have been produced to take 5.25 in disks，so that standard ASCII files in CPM Iormat can be transferred to the PCW machines
Keyboard：Includes extra keys for word pro－ cessing functions．Keyboard in 9512 a sub－ stantially improved version．
JoystickMouse：Not supported．Joysticks and mice can be attached via a separately bought

## nterlace．

Ports：One expansion port takes RS232C sen al and Centronics Parallel intertace：printer port for bundled printer
＊
Existing Soltware Base：Not wide but gener－ ally programs of good quality．Appeals to spe－ cialist niche type markets．
Current Releases：Very lew．
Games：Arcade titles are very scarce and of course，monochrome only．Adventures are slightly more numerous．but again the range is smail．A number of infocom tittes available under CPM．but outlook for future releases

## uncertain．

Graphics：Very few but some low－end CAD－ type sottware available．
Music：None－machines not configured as such．
Prospects：Would be poor but for launch of 9512．Revival will depend on new machine＇s popularity．
Soltware Loading：Fast and reliable

Maintenance：One year＇s guarantee．Faulty machines return to dealer．
Best Buy Price：Not generally sold below RRP．
Second Hand Availability：For 8256 and 9512 good． 9512 too new for second hand market as yet．

Disk Format： $3.5 \mathrm{in}: 800 \mathrm{~K}$ formatted：drive buitin
Disk Price：Around $£ 3.00$
Disk Performance：Fast and reliable，but watch out for US software that hasnt been thoroughly tested
Keyboard：Supplied 81 keys including function keys and numeric keypad．Optional extra is the Apple Extended keyboard．with 105 keys Joystick／Mouse：Joystick not supported．High quality one－button mouse supplied with machine

Ports：SE－Apple Desktop Bus connector． 2 RS232．RS422 serial．External disk drive， 96 － pin Euro－Din expansion slot SCSI－DB－25 connector．External audio amplifier：II－2 RS232／RS422 serial DB－25 SCSI T

## 来米

Existing Software Base：Wide range of sott－ ware exists in virtually all fields except games． Current Releases：Adequate：largaly of US origin and in the business or DTP field． Games：Very few arcade games，but adven． tures are more plentiful

Graphics：Lots of interesting software for those involved in DIY publishing．
Music：Very well supported for MIDI software －but it＇s expensive stuff．
Prospects：Excellent，especially in busines and DTP．
Software Loading：Quick and reliable．

Best Buy Price：There isnt much of a ds counted market in Macs：you generally have to pay the list price．
Second Hand Availability：Reasonable．but not exactly cheap．Check small ads in special ist magazines．
Maintenance：One year＇s guaramtee．Apple offers Applecare－insurance＇you take out to cover cost of repairs atter guarantee has lapsed．

Disk Format： 3.5 in ： 360 K formatted（05．Mb dive）． 720 K （1Mb drive）；drive built－in Disk Price：About $£ 300$
Disk Performance：Fast and reliable Keyboard： 96 keys including 10 function keys． Full travel keyboard with audible cick JoystickMouse：Joystick ports are standard． Two－button mouse supplied with machine Ports：MIOI out（ 5 pin DIN）．MIDI in（ 5 pin DIN）．Audio out．Audio in．AGB monitor，mono monitor．serial modem port．second disk．hard disk．mouse joystick．joystick，cartridge．TV ＊＊＊
Existing Software Base：On the low side by

8 －bit standards．but best－supported of the new machines
Current Releases：Most major software hous－ es convert their output to ST now．and several smaller houses specialse in ST tities
Games：Range of arcade tites isnt bad． Adventures are rarer but generally of very good
Graphics：Impressive．with several lirst－rate packages on the market
Music：Excellent．Many companies produoing sound editors．smaplers．synths．Atc
Prospects：Very bright．Could soon rival Spectrum and C64 for number of new releases

Software Loading：A 360 K disk can＇t hold a really large ST program．so two－disk tities are becoming increasingly common．The disk－ changing these require can get tedious．espe oilly where you＇ve got to swap disks during play

Best Buy Price：You wont get much under the RRP，but try for special bundles．
Second Hand Availability：Yes．look in classi－ fied ads of magazines．
Maintenance：One year＇s guarantee．Return 10 dealer if laulty

IN BRIEF
GRAPHICS \& SOUND

## COMMODORE 64/128

Models: C64: 128: 128D
Package: C64 and 128 keyboard plus C2N tape recorder, often plus accessories. C128D keyboard plus system boxidisk drive.
Memory: C64 64K: C128 128K: C1280 128K
Processor: C64 6510: 128:128D 8502 plus Z80 tor use in CPM mode
Recommended Retail Price: C64 £159.99£179.99 according to package: C128 £199.99 stand-alone. £229.99 with C2N; £249.99 with C2N plus sotware: C128D $£ 399.99$

The 64 is an excellent games machine. The 128 and 128 D can be configured for business use using the CPM standard and giving accees to a vast range of business and uttily soltware. The 64 is a particularly dilficult machine to learn programming on due to outdated BASIC

Resolution: C64 $320 \times 200$ : C128/128D - as 64 in 64 mode, plus $640 \times 200$ in 128 modes ( 80 column display)
Palette: 16
Colours: 8. Note - Attribute system places minor limitations on use of colours. TV: Yes
Monitor Output: 64 - composite video 128/128D - RGB for 80 column display Monitor Supplled: No
Monitor Options: C1900M £119.99 mono: C1901 £249.99 colour: C1084 £349.99 colour:
or sutable RGBicomp monitor
Sprites: 8
Speed: Good for scrolling and sprites, poor otherwise
** *
Speaker quality: Output through monitor MIDI: Many third party interlaces available Stereo Output: No
Performance: 3 channels. Very sophisticated for the price. The Commodore 64 used to be the most popular budget music computer for both MIDI and programming its on-board chip.

## COMMODORE AMIGA

Models: Amiga 500: A1000: A2000
Package: Keyboard. with built-in disk drive. A1000 is discontinued. so packaging will depend on different dealer policies Memory: A $500512 \mathrm{~K}:$ A1000 £256K: A2000 £1024K
Processor: Motorola 68000
Recommended Retail Price: A500 $£ 499.99$ : A1000 none - dscontinued: A2000 1236.25

Stunning specification, with custom chips giving enormous graphic power. Despite initial uncerlainty, software support now seems assured. Athough overshadowed by the ST in the UK to date. overseas sales (particularly in US) are high. An excellent machine for those who can afford one.

Resolution: From $320 \times 200$ to $640 \times 400$ Palette: 4096 colours
Colours: 16.32 or even 4096
TV: Modulator extra TV: Modulator extra
Monitor Output: SCART Monitor Output: SCART
Monitor Supplied: No
Monitor Options: Commodore A1081 at §349.99 Sprites: 8

Speed: Very fast wth right sotware
Speed
Speaker Quality: Commodore custom chip MIDI: Not built-in. Third party interfaces available
Stereo Output: Yes
Performance: 4 channels. Buit-in text to speech synthesis. 9 octave range: very sophis-

## IBM \& COMPATIBLES

Model: IBM's PC is the original. The many dones include Amstrad's PC1512 and 1640 series, Tandy's 1000 EX. Spectrum Bondwel 32. etc. The specifications here apply to most compatibles. but check with dealers first. Package: Depends on manutacturer, eg Amstrad supply all machines with monitors. You can buy the bare bones or the works. Memory: Usually $512 \mathrm{~K}-640 \mathrm{~K}$
Processor: Intel 8086, 8088 or variants Recommended Retail Price: From around £400 tor the cheaper basic clones to $£ 1500$ for machines with hard disk, colour monitor etc machines with hard disk, colour monitor etc.
IBM machines are quite a bi more expensive.

Superb value it you want an all-round machine but the PC soill betrays its business origins. Increasing number ol games software releas es, but few of these are of the coin-op areade variety. Definitely not to be considered if entertainment is your first prionity.

Graphics are not provided as standard on PCs, but nowadays most machines are sold with the necessary add-on boards already fitted. There are three main standards: CGA (the most common colour display), EGA (normally an upgrade but built in on some (normally an upgrade but built in on some
eg Amstrad PC1640) and Hercules (mono). eg Amstrad PC1640) and Hercules (mono).
Resolution: CGA (Colour Graphics Adaptor) $320 \times 200$ low res, $640 \times 200$ medum res; EGA (Enhanced Graphics Adaptor) - both CGA graphics modes plus $640 \times 350$ high resolution: Hercules $720 \times 348$
Palette: CGA - two different colour schemes avalable in low res: EGA 64.

Colours: CGA - 4 in low res, mono in high es: EGA - 16 TV: No
Monitor Output: Normally RGB
Monitor Supplied: With most packages Monitor Options: Any RGB should do the job Sprites: None
Speed: Varies
**
Speaker Quality: Generally poor MID: Third party interfaces available Stereo Output: No
Performance: Not really a machine for the musician: Atari ST offers rather more.

## MILES BETTER SOFTWARE

219-221 Cannock Road, Chadsmoor, Cannock, Staffs WS11 2DD. Tel (05435) 79099


| HARDWARE |  |
| :---: | :---: |
| Philips CM 8833 |  |
| Philips CM 8852 | ¢260.00 |
| Cumara disk drive 1 Mb | ¢29900 |
| Cumana 5\% "disk drive (ST) | 6145.00 |
| Epson LX 800 | 6170.00 |
| NECP 2200 | ¢249.00 |
| Amstrad LQ 3500 | ¢ 6299.00 |
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Two disk drives are commonly available the C1541 and the more recent C1571 Disk Format: 5.25 in ; 1541140 K tormatted. 1571 340K formatted: 128 D has built-in drive 1571340 K formatted: 128 D has
Disk Price: $\mathrm{E1} .00$ (less in bulk) Disk Performance: Commodore 1541 drive is notoriously slow and noisy; 1571 marks substantial improvement
Keyboard: Raised plastic keys with audible tactile feedback, plus function keys. Cursor key arrangement very awkward Joystick/Mouse: Provision for two standard
joysticks. Mouse not supplied. Commodore 1350 mouse available, plus third party manufactured models
Ports: 2 joystick, expansion, cassette, nonstandard serial, composite video (C64) RGB ( 128 \& 128D), TV. User port

## 米米

Existing Soltware Base: Excellont. Only fivalled by the Spectrum.
Current Releases: Stil pouring out Games: Arcade action second to none. Adven. fures - good selection

Graphics: Good selection. Quality of graphics means that programs can be reasonably sophisticated
Music: Good wide range of sound editors, some samplers. Many MIDI utilities available Prospects: Supply will eventually slow, but Commodore games may last longer than Spectrum, due to portability of games from US Spectrum, due to portability of games from US Software Loading: Siow as always on cas-
sette and disk loading not as fast as it should sette and disk loading not as fast as it should
be due to slowness of dedicated drive. Most be due to slowness of dedicated drive. Most
soltware produced with fast loader routines.

Best Buy Price: Old style C64s, dating back to before the redesign, can be picked up tor around $£ 130-£ 150$. Otherwise, with Commodore's policy of letting the dealers devise their own 'bundies'. pick the one you like best Second Hand Availability: Good for all models. Check small ads in various mags. Maintenance: Under guarantee take machine back to dealer. Should get straight replacement within 30 days of purchase (at dealer's discretion). Ex-guarantee. use independert repair company.

Disk Format: 3.5 in ; 880K formatted: drive Duilt-in
built-in
Disk Price: Around 53.00
Disk Performance: Noisy and surprisingly sluggish
Keyboard: 94 keys. 10 function keys. numeric keypad, separate cursor cluster Joystick/Mouse: Mouse supplied as standard Ports: Two joystickimouse. Audio output lett
and right, Extra disk drive, Serial RS232. Centronics parallel, RGBivideo, Monochrome video, Expansion bus

## **

Existing Base: Small in comparison to 8-bit machines
Current Releases: Beginning to pick up Games: Arcade products not yet up to the capabilities of the machine. Few adventures
are available, but they are generally of good quality.
Graphics: Quality and range outstanding. Music: Potentially superb. Litte MiDI support as yet.
Prospects: Good, but A500 needs to establish a larger user-base before becoming a prime development machine
Software Loading: A noisy process

Best Buy: Not at present sold below RRP although it can be worth checking various deal ers for special packs.
Second Hand Availability: Limited as yet. Maintenance: Within guarantee should be returned to the dealer

Disk Format: Mostly 5.25 in . Some very new models use 3.5 in ; almost always 360 K format ted; drives built-in
Disk Price: Well under $£ 1.00$ for 5.25 in around $£ 3.00$ for 3.5 in
Disk Performance: Reliable and pretty fast: hard disks, of course, are even faster Keyboard: All models use raised plastic keys with audble tactile feedoack and include func tion keys and separate numeric keypads. A wide variely of third-party keyboards is available.
JoystickiMouse: Two different joystick stan: dards exist. IBM (analogue) and Amstrad (Atari
style - the norm for games playing). Mos games support either IBM or both, but Amstrads can now be adapted to use IBM joy stick. Newer models (eg Amstrad) include mouse in package. Third party mice are avalable for mouseless PCs.
Ports: Varies. Expect Centronics parallel, RS232, expansion port with most machines out some of these are optional.
***
Existing Software Base: Vast
Current Releases: Still pouring out, with price levels dropping as well
Games: Cheaper machines have meant that
more games are being released on the PC both arcade and adventure. CGA graphics standard used to be predominamt, but an increasing number of EGA games with supenor graphics are appearing. PC only recently perceived as a machine with games potential Graphics: Many sophisticated packages for business presentation graphics: not 100 much for the artist
Music: Fair selection of MIDI packages and interfaces. though these tend to be expensive Prospects: Wont dwindle as long as there are
PCs on desks PCs on desks
Software Loading: Good, fast, reliable

Best Buy Price: All-in-one 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 dont know what youre doing go for a rep vtable brand.
Second Hand Availability: PCs can otten be picked up in auctions of computer and office goods, or through magazine adverts. Maintenance: Return to dealer if tauty, but a maintenance contract - often surprisingly cheap - can guarantee your peace of mind.

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Disk Format: 3in flippable; 180 K formatted per side: crive built-in
Disk Price: Around $£ 3.00$
Disk Performance: Generally last and reliable. Some hitherto untoreseen compatibility problems may arise with commercial soltware - but they havent surlaced yet.

Keyboard: The Spectrum Plus keyboards are made of hard plastic set into the casing, with a squidgy feel. The Plus $2 / 3$ keyboard ahas raised hard plastic keys. Unlike the older model. it can be used more easily for word promodel it
cossing.
Joystick/Mouse: Non-standard on all models Suitable interfaces widely available. Compati ble joystick included in Plus 2 and 3 packaging Third party mice available but mouse compat:-

## ble sottware rare.

Ports: 2 joystick, RS232MMIDI, RGB monitor, Audio, Numeric kaypad, Expansion I.O. TV **
Existing Software Base: Second to none Current Releases: Most major sottware firms are continuing to bring out the majonity of their tities on the Spectrum.
Games: A huge number of arcade tities ranging from abysmal to excelent. Wide range of adventures, many Quilled.
Graphics: Fair selection, some of which
squeeze better graphics performance from the machine than one would expect from the specfication.
Music: A ocuple of MDI interlaces available plus Cheotah Specorum drum synth.

Software Loading: Cassette versions slow as ever

Best Buy Price: Plus can now be picked up cheaply as no longer manufactured. Try to find a shop selling off old stock at around $£ 50$. second Hand Availability: Good. N.B. The original Sinclair 48 K model can still be lound second hand. If you don't mind the ubbery keyboard it could represent a good investment. Ensure that you get the 49 K model - there is no outward way ol dist uishing il from the 16K models of distin uishing it from the 16 K models, which are quite useless for running contemporary oftware.
Maintenance: Amstrad-badged Spectrums have a year's guarantee - take the machine back to the dealer who sold it to you. For pre Amstrad Spectrums (Plus and Plus 128) bought as new and within guarantee period: contact Sinclair Research.

A disk system is available in Japan, using pro prietary non-standard Nintendo disks. The for mat provides greater memory capacity and hence enhanced versions of some soltware (eg Super Mario Brothers in. The system is not available in the UK at present.
Ports: RF TV, video: audio 1: game contraller slots: Caftridge slot
Additions of light gun and robot make this
a suitable machine for younger children. Not a true computer; recommended as games console only.
***
Existing Software Base: Huge (in Japan) Current Releases: Some
Because of the Yen to Pound conversion rate, Japanese soltware is likely to remain expensive.

Games: Good range of arcade-type sotware. Some arcade adventures Graphics:
Music: None
Prospects: Good, but fate of import will
depend on machine's popularity in UK.

Best Buy Price: As RRP
Second Hand Availability: Not as yet Maintenance: Manulacturers guarantee

Ports: 2 game controllers: cartridge slot
Robust casing. Not designed for tuture expan sion. Not a true computer; recommended as games console only
**
Existing Software Base: Large

Current Releases: Well supported by UK ds tributor Mastertronic
Games: Wide selection of arcade titles, generally considered to be of high quality. No adven tures. Buk of releases currently conlined to conversions of Sega coin-op games. Graphics: None

## Music: None

Prospects: Good if support by 'Tronic and parent company Sega continues

Best Buy Price: As RRP
Second Hand Availability:
Maintenance: One year's guarantee. Back to dealer if faully

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Some of the earliest mathematical puzzles are 'alphamatics', in which letters are substituted for digits and
the solver has to discover the original values.

For example: $A B C D E \times 4=$

EDCBA would have as the solution the sum $21978 \times 4=87912$. In 1955 J.A.H. Hunter produced the first problems of this type which formed logical sentences. Even the apparently incorrect FOUR + FIVE = EIGHT will produce an alphamatic if the digits $6057+6291=12348$ are substituted.

Here's an alphamatic especially designed to intrigue ACE readers.

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Solution and winner in July ACE The ACE crosword is cryptic. The answer might be an anagram, or formed from the end of one word and the beginning of another, or simply another word hinted at by the clue. Most - but not quite all - of the answers are computer-related.

## DOWN

$\theta$

1. Clever way leading micro has
with pictures (5)
2. Surrealist with paintbox at the turn of a dial (4)
3. Pupil took it outside - it's only a piece of software (7)
4. Appearing ages older when one is captured by one of SKN's killer (4.7) 7. Way a girl painter becomes programmer of Ranarama $(5,6)$ 10. Gore spilt in game from Origin Systems (4)
5. Come face to face with me, an extra-terrestrial (4)
6. Rod's got fashionablegame from Microprose (7) 14. Wonder about circle made with pointing device (5) 17. Capital memory featured on the last Commodore (4)

## ACROSS

4. Mad star needs reformatting
for hardware (7)
5. In one's dreams do something original about the operating system (2-3)

6. First George designed Merlin
for the software house (7)
7. Screen from Prestel Lydia found interesting (5)
8. Attractive type of disk (8)
9. This Domark game's on target $(5,3)$

CROSSWORD ENTRY FORM


Please tick the appropriate box. Did you find the crossword

Too easy
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Send your answers to:
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Closing date: April 10th

# JOU FIGURES 

means that ST Basic can't handle this simple picture-drawing task. The Amiga meanwhile has no PLOT command or its equivalent, so you'll need to draw a line of zero length to get the desired effect. The C64's got rather more of an excuse for its shortcomings - let's face it, the old dear's getting on a bit - but without proper graphics commands it'd need a very differentlooking program to get the job done.

The listing turns out Lissajou figures - the shapes made by objects performing simple harmonic motion (pendu-
lums for example) in two dimensions. It chooses such shapes at random, drawing a new one each time you hit a key. It's based on a CPC listing from The Amazing Amstrad Omnibus by Martin Fairbanks (Interface Publications, £7.95) but as you can imagine we've had to shuffle things around a bit to make it run on the Amiga and Spectrum. Even so, only lines 10 to 90 are common to all three versions: lines 100 to 400 are different on each machine, to allow for variations in Basic and display characteristics.

## MAIN LISTING

10 gosub 100
20 if inkey $\$={ }^{="}$ then goto 20
30 let $\mathrm{a}=$ int( $\left.\mathrm{rnd}^{*}(\mathrm{y}-\mathrm{x}-1)\right)+\mathrm{x}$
40 let $\mathrm{b}=(\mathrm{rnd} * 3)+8$ : let $\mathrm{c}=0$ :gosub 200
50 if inkey $\$<>$ "" then cls:goto 30
60 let $\mathrm{c}=\mathrm{c}+.1$ :gosub 300
70 if rnd>. 9 then let $a=a+1$
80 if $a=y$ then let $a=x$
90 goto 50
AMSTRAD LINES
100 randomize time: $x=1: y=4$ :mode 1 :return
200 gosub 400 :plot d,e, a areturn
300 gosub 400 :draw d,e,a:return 400 let $d=320+100^{*} \sin (\mathrm{c})$ :let $e=200+100^{*} \sin \left(c^{*} b\right)$ :return

## SPECTRUM LINES

100 randomize 0 :let $\mathrm{x}=0$ : let $y=7$ return
200 gosub 400 :plot ink a;d,e:return
300 let $\mathrm{f}=$ dilet $\mathrm{g}=$ e: gosub 400
310 draw ink a;d-f,e-g:return
400 let $d=127+60^{*} \sin$ c:let
$e=87+60^{\circ} \sin \left(c^{*} b\right)$ :return
AMIGA LINES
100 randomize timer: $x=1: y=4$ : return
200 gosub 400 :line (d,e)-
(d,e), a:return
300 gosub 400 :line -(d,e), a:return
400 let $d=320+150^{*} \sin (c)$ let
$e=100+75^{\circ} \sin \left(c^{*} b\right)$ :return

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## The space which YOU fill

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 the trigger is CRL's Chief Exec Mike Hodges He's trying to plug the forthcoming Road Warrior, the 'war-
Does Mike feel lucky? Does he know his rior' angle to limitations?

Porsche 911. Close examination of his gun reveals that it isn't loaded - you can see down the chambers - but with acceleration like that he can probably just run people over.

Also spotted toting guns for software promotion purposes this month were the cast from Platoon, seen here in a break from a tough session of multi-loading. Gun freaks will notice the M60 'pig' at the right of the picture - rather more powerful than anything they let Mike Hodges play with while the rest of us can ponder the fate of the black guy at the back. Did you spot him in the Ocean game? No, neither did we. Wonder why not...

If you're really after major league firepower of course, you'll want a glimpse of Activision's
bly what Mike's car is sitting on. Close exam ion of Mike's car reveals that it is in fact

## Join the ACE team!

Are you an honest, reliable person who's over 14 years old? Would you like to earn free magazines and software by making a few visits to your newsagents each month? Obviously many of you would - we've had a terrific response to our advertisement in last month's ACE.

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The boys from Platoon ain't afraid of no Porsche 911.
Predator. The film featured the 7.62 mm minigun, a weapon that makes the 'pig' look decidedly sick. This one could really ruin the paint-job on Mike's 911, and it does actually appear in the game - but its firepower is singularly weedy in the previews we've seen, so don't get your hopes up. (Incidentally, the previews showed Arnold Schwarzenegger with an all-white rescue squad. Now there were two black guys in his squad in the film: what happened to them?)

From the sublime to the ridiculous as it were, courtesy of those funny old Martech people. Following on from the controversial Sam Fox Strip Poker they've digitised fellow Page 3 inhabitant (and sometime Benny Hill Show girl) Corinne Russell for their new epic Vixen. Apparently she gets to attack the bad guys with a whip - when she sn't busy turning into a fox, that is.


Don't Martech ever think of anything else?

When we heard about the project a few months ago we thought it was a joke, but apparently not. Pity...

Super Select, super OOPS!
Somewhere deep in the West Midlands, Mark Farmer is playing Xenon. His computer's only a Spectrum +2 , but that's no obstacle to him: you see, he won the Super Select System in our issue 5 Arcadia competition. The correct answers were: A - Blasta Ball, B - World Darts, C - Xenon, D - Sidewinder; but like many of you, Mark got C and D the wrong way round because we got the photos muddled up on the competition page. This being a fairly serious sort of OOPS!, we counted as correct all the replies that had A and B right - and that made well over 10,000 ! Those of you who didn't win can go out and spend your 50p pieces on a Super Select machine near you, but lucky old Mark doesn't have to of course!



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[^0]:    COVER PHOTOGRAPHY Stuart Baynes Photography, Bath, = 022566343 . SUBSCRIP. TIONS \& SPECIAL OFFERS Christine Stacey, The Old Barn, Somerton, Somerset, TA11 7PY ¥ 045874011 • COLOUR ORIGINATION Wessex Reproduction, 325a Wells Road, Bristol BS4 OQL - DISTRIBUTION SM Distribution, 16/18 Trinity Gardens, London SW9 8DX $\boldsymbol{\pi}$ 01-274 8611/5 • PRINTING Chase Web Offset, Plymouth - FUTURE PUBLISHING LTD 1988 • No part of this publication may be reproduced in any form without our permission.

[^1]:    Your third time in Gridville (level 1C) and thing are really hotting up; that snake things is chasing you all over the place. The smile on that tomato's face is going to be wiped off when you blast it. Note that your rating at the moment is 'Fearless', which means you get 40 points for any nasties killed; if your behaviour goes down to ' wimpy' you won't be getting any points at all.

[^2]:    XENON - plane or buggy, the choice is yours.

[^3]:    JOYSTICK FEAY

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[^4]:    - BBC Master. Cub colour monilor, Cumana CO8005 disk drive and Epsen $1 \times 80$ printer ooystick. AMX mouse MKIII. Papamaker. Viewstore and all manuals, Bargain al $\mathrm{E}, 000$

