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# Commodore

## HORIZONS

December 1985

All-American

# ADVENTURES

## GAMES

Our choice  
for Xmas

## PROGRAMS

Games and  
utilities

## HARDWARE

Printer, music,  
quicker disks

## COMPUTER ART

### WIN

Wigmore's  
graphics  
mouse  
with



COMPUNET

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**Topper the Copper**  
**50 to Win!**

**“Destined to become  
one of the all time  
classic games”** SINCLAIR USER

**“An absolute joy”** ZZAP! 64

**“A must for adventure  
enthusiasts”** PERSONAL COMPUTER WORLD

**“Truly original”** CRASH



After reviews like that, what more can we say?

**“I think the best thing to say about this game is BUY IT!”**  
ZZAP! 64

Frederick Forsyth's THE FOURTH PROTOCOL — THE GAME is available on cassette for the Spectrum and C8864 at £12.95 and on disk for the C8864 at £15.95. Published by Century Communications, a division of Century Hutchinson Ltd. Brookmount House, 62-65 Chandos Place, London WC2N 4HW



## GAMES

### Four for Xmas

ACE, Batays, Blackbuck, and Water Games — our top tips for Christmas

### Soft Hits

This month's selection of Masters, racers, rappers and romances

### Video Stars

Our cover feature — US Gold's All-American Adventures

### Tower of Adventure

Ken Matthews takes over Aristocrat's D-I-Y adventures



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Ben Waugh looks at the add-on which turns your 64 into a playalong music box



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## Editorial

CHRISTMAS is coming — Santa is installed in Sainsbury's Fairy Grotto, the decorations are up in the High Street, and shopkeepers are rubbing their hands at the thought of another year of commercialism. The computer industry is similarly excited — after last year's disappointing results, when a lack of new products and overpricing by retailers and a pall of gloom over the following year, this Christmas at least offers new products and a more realistic attitude to future computers. The sales are very seasonal hardware is still expensive enough to be regarded as a special purchase, and software still entertaining enough to be regarded as a special treat (if only to oneself) rather than an essential necessity.

Let's hope that this Christmas, with the pleasing new 128's (and with any lack of disk drives and monitors) in the shops, the fortunes of Commodore and the other UK computer companies will improve. Acorn and Sinclair seem to be at an all-time low, and despite its international scope, Commodore has just announced record losses. Perhaps it will do the home computer industry good in the long run to realise that it is not infallible.

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## In the dungeon

I WONDER if there has been much response to my idea of an adventure helper? I can offer help to any work in *Acme Tandy*, *King of Power*, *Castle of Terror*, *Arms of Death* (Part II), and *Phoenix and Andromeda*. I would like to help with *Blade through the Thinking Glass* and *Subwork*.

F. Don  
Sutton  
Co Durham

Responses have't been overwhelming! All you adventurers should get writing if you want help; if our own Ben Matthews can't help you, perhaps one of the other readers can. Put skill in parenthesis!

## Pencil problem

WHILE I think your suggested remedy for G. Howard's problem with *The Designer's Pencil* may solve the problem (*Arms of Death*, *Overlord*), you did omit one point which might be the cause of the inability to produce screen dumps.

The filename at the top right hand corner of the screen window is in two parts; a six character name followed by an oblique, .

followed by either PRG or PIC. The program uses the last three characters during I/O operations to determine whether the picture itself or merely the program which creates it is saved or printed. If Mr Howard is using a filename such as DESIGN.PRG he will probably find that changing it to DESIGN.PIC will produce the required screen dump. I can quite understand Mr Howard's failure to notice this, as the documentation does not even mention it already.

M. E. Dwyer  
Brockhampton  
Hants

## Gooch's teams

COULD YOU pass on this little tip to owners of our Graham Gooch's Test Cricket for the 64. This will enable them to save the teams they have created on to tape or disk, and thus avoid having to type it all in again if they want to play the same teams in future.

1) Load and run the SELECT program, and enter the teams as normal.

2) At the end when the program exits to Basic, enter the following: POKE 61,0; POKE 61,10; POKE 61,20; POKE 61,30; POKE 61,40; POKE 61,50; POKE 61,60; POKE 61,70; POKE 61,80; POKE 61,90; POKE 61,100; POKE 61,110; POKE 61,120; POKE 61,130; POKE 61,140; POKE 61,150; POKE 61,160; POKE 61,170; POKE 61,180; POKE 61,190; POKE 61,200; POKE 61,210; POKE 61,220; POKE 61,230; POKE 61,240; POKE 61,250; POKE 61,260; POKE 61,270; POKE 61,280; POKE 61,290; POKE 61,300; POKE 61,310; POKE 61,320; POKE 61,330; POKE 61,340; POKE 61,350; POKE 61,360; POKE 61,370; POKE 61,380; POKE 61,390; POKE 61,400; POKE 61,410; POKE 61,420; POKE 61,430; POKE 61,440; POKE 61,450; POKE 61,460; POKE 61,470; POKE 61,480; POKE 61,490; POKE 61,500; POKE 61,510; POKE 61,520; POKE 61,530; POKE 61,540; POKE 61,550; POKE 61,560; POKE 61,570; POKE 61,580; POKE 61,590; POKE 61,600; POKE 61,610; POKE 61,620; POKE 61,630; POKE 61,640; POKE 61,650; POKE 61,660; POKE 61,670; POKE 61,680; POKE 61,690; POKE 61,700; POKE 61,710; POKE 61,720; 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# SOFT★HITS Special

This our big four — the arcade games you'll want to have on your stocking this Christmas — reviewed by jaynick-beating John Cook



## Horror in BLACKWYCHE

THE FESTIVE season fast approaches, although the observant amongst you will have noticed those tell tale signs long ago. Shoplifters have started swiping at you as you walk in the shops, the salesman have become just a little bit taller, and the biggest giveaway of all — close relatives exclude loudly the income in particular) how life would be so much more if only they had new apron/socks man/pair of woolly socks/ chairman (delete where applicable).

Just in case you haven't dropped your hints yet, this month we provide our own

selection of Superstars which can be left lying around the front room with the appropriate game heavily indicated, to ensure that this Christmas you get a game worth playing.

It's quite some time since *Ultimate* started heading down Commodore software from the Planet Zaxxon — *Blackwyche* being the latest release...and it's got all the usual features we're used to know and love. In true classic arcade-adventure style, there are harpies and octopus plenty to serve up with you magic sword (since you've found it), enigmatic

puzzles to solve, and Sir Arthur Pendragon busy leaping around the featured track in an attempt to free the new foot as first (and usually Very Final) Form.

Of course there are the fab graphics and sound — but most of all that distinctive "just one more go" feeling that has you coming back time and time again. How to persuade that giant octopus to give up the pearl? And when you do...what can you do with it?? Whatever you do, don't load this one up on Christmas morning — or you'll be in mortal peril of seeing a cold Christmas dinner.



- Micro: CBM 64
- Supplier: £9.95
- Price: £9.95

## Hot games



## Madness in BATALYX

YOU MIGHT like to spend Xmas Day trying the new Master collection — and I don't mean the latest selection of designer glass cante; for *Batalyx*. Regular readers of *Horizons* will have closely followed its development, but for the uninitiated, *Batalyx* is a collection of five games (as if you include the *Psychoballs* game module) that will have everyone from your granny to the dog fighting to get the joystick.

Firstly there's *Halloween-Bombblitz*, a supreme shoot-em-up which applies Newton's First Law to your robot droid...to every action there is an equal and opposite reaction. So you fire at the goated spirit...and automatically move in the



opposite direction. This is confusing — but fun.

Then there is *Attack of the Merman Cannibals II*, which is largely self-explanatory. Zap the alien cannibals against a background of space pyramids. Next, an utterly weird reaction game, *The Activation of Irish Bars*, and naturally an offering with *Antipodal* in the starring role, *Clips on the Bus*. In this one you run along a grey corridor, with dual gravity of course, peering in rainbow colours





## Fun in WINTER GAMES

ANOTHER multi-part that will keep the family around the table after the Queen's Speech, *Winter Games* from those we fully trust US Gold people. There are seven events in all (although you could argue that Free Skating and Figure Skating are approximately the same), and you'll be pleased to learn that all are far from the straightforward joystick business we have come to know and hate. Some, like the two aforementioned, are a blend of thought and timing, while the Biathlon (skating and shooting) speed skating and the Bob sled will have you on the edge of your seat. Most likely, *Hot Dogging* and *SKI Jump* will have you face down in the snow.

Once again, Epyx has produced gorgeous state-of-the-art graphics and graphics that cannot fail to be a hit for all die users... and parents CD-ROM owners.

- Micro: CBM 64
- Supplier: US Gold
- Price: £12.95



## Thrills in A.C.E.



FINALLY, let us stop for one short moment and ask ourselves about the real meaning of Christmas. A time for friendship, a time for goodwill and

patience, a time for promoting a sense of true union and understanding between nations. Or if you have a copy of A.C.E. — a time for slapping up enemy tanks, missiles, ships... anything that moves in *Fast!* From Cascade Games, Ace cannot claim to be the most accurate simulation of modern air-to-ground warfare, but it certainly has a fair claim for being the most playable. Just enough gadgets to make it interesting, just about simple enough so you don't spend three days learning how to take off, this is a fast action shoot-'em-up, with a good strategic element that will appeal to seasoned campaigners. The cut-of-the-judge view is as speedy and smooth as I've seen on the 64, and the display of instruments below are obviously not just there for decoration. Apart from the usual skill levels, there is a two player option, with the opportunity for someone to take a back seat as a navigator/scoutman man — even ejector seats. What more could your average keyboard kamikaze want?

So there you are — our top tip for games to buy your Commodore this Christmas... whatever you do, have fun... and don't forget, if you see an old man waddling a red suit carrying a white box with "C128" written on it — hands off! It's mine... please Ma'am! ■

- Micro: CBM 64
- Supplier: Ariolasoft
- Price: £9.95

## Games for Christmas



wherever you walk while you zap the spheres. Far out!

Finally, a little more relaxing, you can the play advanced version of *Squares II* (as published in this magazine, featuring my two game mudd and memo around with a simplified *Psychobrella*).

Amazingly, all the games are held in memory at the same time — you can move from one to another at will — and they are all linked together with an interesting level



score feature. With seven skill levels and infinite lives, this one's going to keep you going until New Year.

As an introduction to the *Winter* style, *Biathlon* is ideal. It should give you hours of frustrating play, and encourage you to search out other Librasoft titles.

- Micro: CBM 64
- Supplier: Cascade
- Price: £9.95



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Softly  
Softly

As for *Thunderhead* (import: Activision, Atlanta), heads-down no-one's mindless blasting, this one, and no bad thing either. *Stealth* is a 1987 inappropriate title, since all you're required to do in this game is cooer through a landscape of hostile enemies blasting

the hell out of them.

The graphics, excellently designed and animated, use a perspective effect to depict enemy fighters, tanks and missiles zooming out of the distance and flanking past your fighter aircraft. As you proceed towards your target, the Dark Towers, you have to zap these enemies, while at the same time looking out for Positive Energy Fields. Flying through these enables you to refuel, but of

course there are sinister negative fields too, which will drain your resources. Tailwinds, radar



beacons, and bunkers for the way too.

As you come within range of

the Dark Towers, the defenders become even more vicious — and destroying it is a gratifying mushroom cloud, just make sure you have to face the whole thing again, but faster and harder. Top-class blasting.

Program: *Stealth*, 64

Supplier: Activision

Price: £9.95

Graphics: ★★★★★

Sound: ★★★★★

Gameplay: ★★★★★

## 10 count

Being games seem to be in vogue at the moment, what with Activision's *Barry McGuigan* game, *Adrian's Backbeat*, and now Elite's long-awaited *Frank Bruno's Boxing*. This is by far the most sophisticated program of the three, though that doesn't automatically make it the best.

A close copy of the arcade game *Parabond*, Elite's effort uses cartoon-style graphics which are initially quite amusing, with the right cartooned opponents rolling around the ring as you smash them senselessly around the board.



The point of view is from behind your player (Bruno), and both fighters duck, weave and punch very smoothly. There

must be hundreds of animation frames used.

Control is by use of two joystick, which determine whether

Bruno is defending or attacking, and if so which moves are thrown — uppercut, right hook, and so on. To beat each opponent you must knock him down three times in a three-minute round.

Very cleverly programmed, but somewhat unsatisfying — you feel that the computer is doing all the work, and you're more of a spectator than a participant.

Program: *Frank Bruno's*

*Boxing*, 64

Supplier: Elite

Price: £7.95

Graphics: ★★★★★

Sound: ★★★★★

Gameplay: ★★★★★

Cop this  
lot

One of the earliest efforts to occur any way for some time, *Topper the Copper* features a detective who seems to consist of nothing more than a hat on legs. Bouncing through a series of chambers in search of clues to a criminal's identity, Topper must collect safes and

be back the right clue elements. Various ghosts, ghouls and



things that go bump for his way, but there's no stopping him.

Accompanied by what sounds like the music from the *Henry Hill* Show, Topper follows the map around the camera collecting the pieces, then must unlock the clue and make an occasion in the courtroom. All sorts of hazards for the way, including an elevator system which threatens to dump him in a furnace, a time limit and a decreasing energy level which can only be replenished by a visit to the

police station.

Surprisingly good fun, but moving, wacky, and featuring a character who will easily become a legend in his own lifetime.

Program: *Topper the Copper*,

64

Supplier: English Software

Price: £9.95

Graphics: ★★★★★

Sound: ★★★★★

Gameplay: ★★★★★

Got the  
nodes?

Thing about nodes why it's taken us so long to get a copy of this one to review — *Nodes of Ywead* has been out for some time, but it's still worth a look since it's very high-quality 16 programming.

Set in the caverns of the Moon, the game features a tantalizing specimen searching

for the mysterious Nodes. Collecting eight of them allows him to deactivate the sinister Moonoids. To help him there are Moon Nodes, which if captured can act through the rock in some places; teleporters which take him to otherwise inaccessible places, and Gravity Sticks to help him to ascend vertical tunnels, though using them can lead to a fairly long fall. There's a wide range of hazards including fireballs, spiders on springs, burning demons, goofy

fish and deadly plants. The sprites are very nice and the



animation fine — most remarkable is the speed with which the scenes change as the specimen

moves from one cavern to another.

Excellent music, too — spooky and ethereal for the game, luscious and heavy for the title screen. Well worth checking out if you like this sort of arcade adventure.

Program: *Nodes of Ywead*, 64

Supplier: Elite

Price: £9.95

Graphics: ★★★★★

Sound: ★★★★★

Gameplay: ★★★★★

## In two minds

This isn't the kind of thing we expect to see from Quiksilver, and it's an indication on the way the company's declined since the name was swallowed up by the monolithic Argus.

Schizofrenia is played on a

series of platforms and ladders — yours — by two characters.



Alphonse E. Nord (yourself) and his scientifically-created alter ego. Your task is to tidy up the

laboratory by collecting rubbish, resetting lifts and putting switches in the correct position. All the time, Alphonse's double is working to mess things up for him.

The sprites, which appear to be designed to represent Paul Fawley, are none too brilliant, and the ragtime music is nothing if not annoying.

The backgrounds are quite well designed, but the whole concept comes across as an un-

spirited that it's difficult to see why anyone bothered with this one. I certainly wouldn't pay full price for it — Schizofrenia would make a decent budget game, but doesn't hold its own in the full-price market.

**Program:** Schizofrenia, 84  
**Supplier:** Quiksilver  
**Price:** £7.99  
**Graphics:** ★★★★★  
**Sound:** ★★★★★  
**Gameplay:** ★★★★★

## Space sequel

**CodeName MAT 2**, a mouthful to pronounce and a handful to play. Sequel to the original Spectrum game, CM2 is a cross between a space flight simulator and Star Trek, the ancient strategy game of cones and banks.

Dreary graphics show you the view through the windows of your space fighter. Your mission is to defend a protected

planet from attack by space raiders. In aid you, you have long and short range weapons, defensive shields, lasers and ion-pistols, and warp drive. Thinking your target makes, you close on them, essential, put your shields up, aim the ion-pistols and Miss away at the raiders. Hit through your paralyser.

The Quadrant Chart gives the status of the enemy satellites which you must protect, and you have two shields which can be assigned to repair damaged systems. There are four towers of

satellites to protect; should all four be broken by the raiders, power will cease to flow to the planet and it's the big sleep for



the inhabitants, and you get demoted. You have to think about which tower to repair to keep the power flowing as long

as possible; satellites can be moved from one tower to another using the cursor controls.

Good fun, not remarkable graphically, since we've all seen this kind of thing done many times before, but full of entertaining little details and imbued with a convincing atmosphere.

**Program:** CodeName MAT 2, 64  
**Supplier:** Demarc  
**Price:** £9.95  
**Graphics:** ★★★★★  
**Sound:** ★★★★★  
**Gameplay:** ★★★★★

## Salute to Harvey

You should know my tastes: concurring beams of energy, gigantic explosions, mindless violence, the talk of gunfire and the crunch of snapping bones. So why do I like this non-violent, jolly little family game so much?

The top half of the screen shows you the Hockstead three-jumping arena, with twelve different courses including many different types of jump and obstacle available. The horse, the speed and direction of which is controlled by the joystick, is well animated, and gallops around the course with

the figure of Harvey bouncing on its back. Pressing the fire button makes it jump, and



precise timing is required if you are to avoid knocking your horse, taking a fall or refusing.

The jumping course is shown on a map on the lower half of the screen, which also gives you

the time and number of leads. The horse responds very realistically; you can't just change

direction immediately; you have to coast it around.

Up to six can play, and there's also a facility to design your own course. Accompanied by the Post Horn Gallop, brightly coloured and challenging, Harvey Smith Showjump is the nicest game I've seen for some time, and should go down well with all sorts of games players (not just jockeys). And two fingers to anyone who says otherwise.

**Program:** Harvey Smith Show-jumper, 64  
**Supplier:** Software Projects  
**Price:** £7.99  
**Graphics:** ★★★★★  
**Sound:** ★★★★★  
**Gameplay:** ★★★★★

## Caveman

This is an adorable arcade adventure's licensed from Ubisoft.

Your task is to locate eleven hidden treasures in a complex of underground caverns. You can pick up objects as you find them, and you will need many

of them (usually a pair) to overcome the perils of the caves, which include vampire bats, gas, nothing rivers and dragons.

You must find your hands by moving the "object" cursor, down below the main screen, to position 1) or you'll take a tumble when you try to climb.

There are two help screens,



one giving cost of instructions

and the other an inventory. Unremarkable graphically, but good fun to play.

**Program:** Caveman, 64  
**Supplier:** CRI  
**Price:** £7.95  
**Graphics:** ★★★★★  
**Sound:** ★★★★★  
**Gameplay:** ★★★★★

# THE COMMODORE 128. HARD FACTS ABOUT THE SOFTWARE.



## PAZAZZ

PAZAZZ is a colorful, action-packed puzzle game. It features a variety of levels and challenges that test your logic and problem-solving skills. The game is designed to be both fun and educational, making it a great choice for students and professionals alike.

**PAZAZZ**



## Script 128

Script 128 is a powerful word processing and text editing software. It offers a wide range of features, including spell checking, grammar correction, and a variety of fonts and styles. The interface is intuitive and easy to use, making it a popular choice for writers and business professionals.



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## Son of Rupert

Speed in Rupert and the Steamroller's Parts, Rupert and the Ice Palace is the same kind of snappy action, death-defying skill and heart-stopping excitement as the previous effort. No, only kidding — in fact it's more of the same kind stuff.

The cleverly-animated figures of Rupert the Bear, guided by steering discs, meet five his frozen friends from the palace of Ark and Jetay Snow. Protected from the cold by his Ice Pills, he negotiates the slippery stairways, skids along the slides and avoids the falling bricks and shooting snowballs in his quest. Once his friends are rescued, their missing winter woollies must be retrieved before



the return to Narnwood.

Pretty simple to play, and all jolly good fun for anyone of nursery age, though in Royal

Field said, I'm sure kiddies are fed up with "cotton woolies" and prefer a good healthy dose of violence and horror. Coming soon: "Rupert Meets Keanu!"

Program: Rupert and the Ice Palace, 64

Supplier: Quicksilver

Price: £7.99

Graphics: ★★★★★

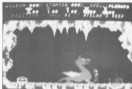
Sound: ★★★★★

Gameplay: ★★★★★

## Jolly wizard

As excellent little cheapies from Rabbit, a name from the past now resurrected by Virgin as a budget label. Written by interception mathematician Lee Braxton and Ian Gray, Derwitz has previous of Scurvy, Staff of Kamensk, and any number of similar arcade adventures.

You control a wizard wandling through a series of screens for eight sword-fighters and 100% wisdom. Having done this you can achieve immortality, but it's not



that easy. The magic spells you'll need to defeat various monsters are hidden in chests,

and you must find out which spell to use on which enemy. There are hidden keys for

potions, traps and treasure, status potions, and secret potions the use of which you'll have to discover. It's a true combination of arcade skills — avoiding guards and hazards — and adventure strategies and mapping. Although the graphics are nothing to write home about, they serve. Certainly "hard-rock of the month" as far as budget labels are concerned, though not in the *Blackwells* league.

Program: Derwitz, 64

Supplier: Rabbit/Virgin

Price: £3.50

Graphics: ★★★★★

Sound: ★★★★★

Gameplay: ★★★★★

## Heavy breathing

At first sight this is a variation on the old "3-D maze" theme, but there's a bit more to it than that. Written by the Hungarian-Australian team, *Scavengers* has lots of spooky atmosphere.

You explore the 3-D maze,

which works very smoothly, in search of nine ghosts. By pulling back on the joystick you



can access the maze map, which shows some relative positions,

Once you trap and capture a ghost, you gain an amulet piece. Getting this allows you to leave the maze and enter the next screen through a hand-cranked elevator.

Each successive level contains more hazards, such as spiders and hostile traps. The music, or if you wish spooky breathing sound effects, add lots of appropriate atmosphere.

Having won through on each level, you must solve the secret

of the maze by matching your amulets against them on the tomb wall, in a form of sliding-block puzzle.

Very well done, with excellent graphics, though a little too repetitive for my taste.

Program: Scavengers, 64

Supplier: Antelope/1

Price: £9.99

Graphics: ★★★★★

Sound: ★★★★★

Gameplay: ★★★★★

## Putting on a display

As interesting twist on the artifice of flight simulators, *Red Arrows* gives you the chance to join the crack aerobatic display team and utilize your precision flying skills.

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giving the history of aerobatics and the Red Arrows, the game presents you with a fair amount of information to assimilate — brakes, flaps, wheels, thrust, speed, vertical speed, altitude, formation radar, bank, roll, messages, and so on. All this appears on the control panel in the lower half of the screen.

Above, you see the leader plane and the others in the formation. Supplying your speed and orientation, using keyboard or joystick control, you must go

through a manoeuvre or whole display, with points being awarded for your success in



staying in the correct position. It's not a simple case of following the leader; all kinds of tricks

have to be mastered if you hope to put on a good show.

An excellent idea, though the graphics don't sound too realistic than possible, and there's always the nag to hit your navigation fire button when you see planes in your sights!

Program: Red Arrows, 64

Supplier: Databank

Price: £7.99

Graphics: ★★★★★

Sound: ★★★★★

Gameplay: ★★★★★

## US Gold greats

US GOLD plans to release a compilation quarter of five chess-playing games. **The Arcade Hall of Fame** will be the company's first compilation, and will sell for \$9.95. There is also a disk version planned at \$12.95.

Titles included will be **Spa Master**, **Tappee**, **Up 'n' Down**, **Blue Max** and **Aztec Challenge**. **The Arcade Hall of Fame** will be available from November 1st. Contact US Gold at Unit 95, The Parkway Industrial Centre, Henegate Street, Birmingham, 021-158 3028.

## CBM loss — Amiga hope

COMMODORE International has announced losses of \$14 million for the fiscal year ending June 30th 1985. The figures used to mark contrast to last year's profit of \$14 million. Though Commodore International does not publish separate figures for each country, it seems likely that the UK operation has made a loss. Worldwide, sales were down by 56% in the last quarter.

President Irving Gould named the figures on the downturn in the US computer market, a \$60 million inventory write-down, and "one-time charges" of \$14 million. Commodore UK's hope now is that the C128 and the forthcoming Amiga, backed by attractive packaging deals and heavy advertising, will turn the tide for the company in the next financial year.

Signs for the Amiga are good, drawn from software development houses. It has been said that Commodore has made available American systems while the UK version is being finalised. At a cost of \$1700, developers will be able to obtain the central unit, extra disk drive, monitor, manuals, and a full range of software development tools. Commodore's Chris Keady was quick to point out that "the price for the development system does not reflect the inflated retail price" — which is now expected to be around \$1,500.

# C128 pack plans

COMMODORE's marketing plans for the C128 are now almost finalised. The machine is to be sold at \$499.99 packaged with a 1570 disk drive.

The 1570 is a cheaper version of the double-headed 1571 which was thought to be too expensive for the market at \$299. The 1570 is a single-headed 0.5 Mb device designed specifically for the C128 but fully compatible with all other CBM computers. Equipped with a built-in 6582 microprocessor, the 1570 has 1K RAM, 32K ROM and integral DOS. On the C128, data transfer rates are 300cps in 64 mode, up to 5200 cps in 128 mode and 5200 cps in CP/M mode. Formatted storage capacity is 140K, and its CP/M mode the 1570 is read/write compatible with Kaypro, Osborne, and some IBM formats.

Commodore's Chris Keady explained that the move was intended to encourage the C128 to be used in 128 and CP/M mode: "in order to get the best out of the 128 and run CP/M effectively, an industry standard 5 1/4 disk drive is needed, so we have decided to subsidise part of the cost involved."

Meanwhile the 41 is to be sold as part of a Christmas Compen-

dium pack at \$199, with a 1530 data drive. **Music Maker** software package, **Action Designer's** **ProArt** graphics



software, the **Music Maker** game **The Secret Diary of Adrian Mole**, and a copy of the best-selling book **The Drawing Power of Adrian Mole**.

Chris Keady commented "It's our belief that home computers will sell in 'spiralised isolation' are doomed from the outset. When people open their presents at Christmas they expect

to have everything they need to use them straight away." Two other titles added packs are also to be launched next month; a



1541 disk drive and MPS-881 printer for \$199, or a 44, 1541, and copies of the **MS**

Gold games **Super Rastex** and **Exodus — Ultimate 3**, for £200. Contact Commodore at 1 Hunter's Way, Walsden North Industrial Estate, Corby, Northants, 0336-20155.

## More on mice

FOLLOWING last month's review of the Data Mouse for the 64, comes new entrants of a rival. **Wigmore Home** has launched the **MS2000** device, an optical mouse promising measurement to a resolution of 100 points to the inch.

The rubber-coated ball is designed to offer smooth operation without slipping. Offered with the mouse is a graphics

software package including freehand drawing, lines, rubber banding, circles, ellipses, boxes, fill, colour, pattern spray, undo, zoom, copy, rotate, mirror, and a whole range of other commands.

Rolls can be printed out on the MPS-881 or MPS-803 printer. The software is cassette based. The MS-2000 costs £69.90 from Wigmore, 12 Savile



Row, London, W1N 1AG, 01-734 6171/2/3. We hope to review the MS-2000 soon.

## 64's fixed fast

TRIANGLE of Bradford has announced a new repair service for 64's with a standard charge for £21.95, including parts, labour and return postage, your aging 64 will be repaired with five day turnaround. For £36.50, the company offers same day repair and dispatch, subject to availability of spares.

All repairs are guaranteed for three months, and if you require more details you can get a free catalogue from Triangle in return for a 17p stamp. Contact Triangle, 29 Holme Lane, Bradford, BD4 8QA, 0714-654349.



## BT buys Beyond

BRITISH TELECOM has bought top software house Beyond. The company, formerly owned by EMIAP, will now be part of BT's New Information Services section. Plans for Beyond's Christmas releases, including the *Sesame* game, should not be affected. There are currently seven titles due for release, five at Christmas. All production and financial staff from Beyond will be joining BT.

There are no plans to join Beyond to the *Finalbird* label: Beyond and Monolith titles will continue to be marketed autonomously. For the moment Beyond will remain at EMIAP, until a move to BT's Convent Garden facility is organised.

Meanwhile BT's *Finalbird* label has announced a new "Hot Range", to comprise to be included in the Silver range but not right for the Gold series. Titles for the 64 will include *Rampage*, *Gerry the Gnome*, *Costa Capers* and *Muscleman*. Silver range has been cut in price from £2.50 to £1.99, though another important project, the conversions of *Ultimate's* *Salem Wall* and *Enderswold*, has been delayed due to problems with the protection routines.

Contact *Finalbird* at Wellington House, Upper St Martin's Lane, Convent Garden, London WC2.

## Remember Elephant

DEMASON'S Elephant floppy disks are being promoted by special free offers from dealers. A range of eye-catching gifts, including T-shirts, nylon sportbags, and baseball-style caps, all displaying Demason's famous elephant logo, is available in return for box tops from Elephant disk 30-packs.

Just find a dealer displaying the Elephant logo, buy your disks and fill in an application form, and Demason will mail you the goodies. For more details contact Demason Manufacturing Co Ltd, Colonial Way, Watford, Herts, WD2 4JY, 0623-4124.

# Rabbit hops back

IT'S NOT often that photos of managing directors of software companies are interesting enough to merit publication in the exciting, swarming *Horizons* news section. But here, it's not often that these gentlemen are dressed as bunny rabbits.

Celebrating the re-emergence of the *Rabbit* name as a budget software label operated by Virgin, Nick Alexander (black bunny) and the rest of the Virgin staff went for a hop in the park. In a rare moment of seriousness, Nick commented "The software market is really buoyant again after a year in the doldrums, so we feel that this is the time to launch our *Rabbit* label." Under the by-line "bigger than budget", *Rabbit* will be marketing quality games at £3.99. The first titles for the



IBM 64 are *Zeta*, a multi-screen arcade game set in a series of caverns, and *Darkfall*, an arcade adventure featuring a wily magician (reviewed this

issue).

Contact Virgin at 2-4 Verney Road, 119 Portobello Road, London W11, 01-511 8076 for more labelling on.



THE LATEST 64 game from Ultimate, *Imbloop*, will be released soon. Following closely on the heels of *Blackwyche*, *Imbloop* is set in ancient Egypt, and features the opportunity to be in a tank set by the Gods. The game will be packaged, like

*Blackwyche*, in the new double-size cassette cases, and will cost £3.99.

The game will be reviewed in the January issue — meanwhile, contact Ultimate at The Caves, Abbey-de-la-Zouche, Leicestershire, LE16 5RU.

## Simple Simon

USERS of Commodore's *Simon's Basic* package will be pleased to see a book dedicated to the subject published by Prentice-Hall International. *Commodore's Handbook of Simon's Basic*, by Jack Roth, costs £11.95. It includes a



foreword by David Simons, and consists of nine sections, including material on programming aids, I/O routines, data handling, low and hi-res graphics, sound, and peripheral control with *Simon's Basic*.

All 166 commands are listed and described in an appendix, and there is a full index.

Contact Prentice-Hall, 66 Wood Lane End, Hemel Hempstead, Herts.

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# MINTER MANIA

Back from his hols, *The hairy One* ruminates on new technology, sets the record straight on Ariolasoft, and ponders on the nature of hipness

I'M NOW back after a really varied 2-week holiday in Corsica. Didn't see a single '84 the whole time I was out there, just lay there being on the beach and enjoying my body in a nuclear fusion furnace 97 million miles away in order to darken my epidermis. And I feel lots better for it, but it does mean that I've been away from the '84 scene for a while. Mind you, I didn't always totally float video games, there was *Satan of Saturn* (the so-called 'over board' of that one!) at which I became fairly adept. The game itself is really primitive by today's standards, but was quite playable nonetheless....

Since being back, I've been taking a holiday from Commodore work to do the *Avatar 328*. Using the 520 makes me realize that home computers are going to make a significant leap in power very shortly. The OAS represented the last big advance when it was launched at the end of '82: even at £480 it seemed amazing when compared to the VIC-20s and 2301s of the day. That price of £480 soon came down to affordable levels and the '84 came to be the most popular games system about.



The same thing will happen to the likes of the *Avatar 328*. Although very much a luxury item now, I'm sure that in a year it could be selling in the same sort of people who bought those first '84s, and for the same sort of prices. Hopefully the same thing will happen using the same chip set....

Your machine of a couple of year's time will probably be based on the 68000 and have more memory than a single programme could possibly fill. You'll be able to forget 16 colours, multi-linear made and screen attributes; you'll have a choice of thousands of hues at very high resolution. You'll probably be able to buy a Defender program better than the arcade original. Forget tape drives, too; they'll vanish and become just as bad memory, replaced by smart, efficient and cheap 3.5 inch drives. And the software available will be absolutely amazing.

I have seen the future — and the future is *SOBBAZ21*.

As well, back of me hols now, it's getting colder and it'll soon be time to spend the long dark evenings sitting indoors and getting into a spot of heavy snapping. Winter is always the best time for game companies — in the summer everyone stays out rather than stay in for a game session, and the only games that do well are the sports ones, and then only if the Olympics are on too (just look at all the Derivations we had last summer!).

Speaking of sport time and winter, I will reckon that my idea for a skiing game is mostly of winter. I first described this in my newsletter a while back, but I'll go through it again for the benefit of anyone out there who might fancy a go at home but can't think what to do....

## Boring

Most skiing games are quite boring, being just rush-down-as-fast-as-you-can-minus-any-gate jobs. Boring, boring, boring. My ideal skiing game would involve hammering down the slope at insane velocities, to the accompaniment of a good rock soundtrack (to simulate skiing wearing a Walkman), attempting to wipe out individual skiers, knock people off ski tows and generally create mayhem for bonus points. You could get especially large bonuses for wiping out entire ski schools and for not hitting mountain goats. You could have other skiers after you trying to take you out.... I really like the idea of a game like this, and it'd be well suited to the '84 with its sprites and smooth scroll.

I'm getting fed up at the moment with a lot of rumours flying about that I've sold my soul to Ariolasoft and that they've 'got' Llamasoft. In fact I have arranged for my game to be marketed by Ariola — but will make no label — but that's all at the moment. My main work is for Llamasoft about preparing the light synthesizer for the 68000 machines, and getting together my next '84 design. Sorry not, the Beast is not about to roll out....



I haven't had much chance to play this month, having been away for a while; but I couldn't help but notice all the strange happenings concerning Alligata's *Who Dares Wins*, a game I am not seeing to myself. Jolly good bet.

Apparently, as soon as the game came out, Elite hacked Alligata because the game was a copy of the arcade game *Commando*, in which Elite have the rights. However it seems



Elite were impressed by the game and are going to use the same programmer to create their own version (which I presume will be released as *Commando*). Meanwhile Alligata, in one of the finest moves I've yet seen in the industry, change the graphics and gameplay of *WOW* sufficiently to avoid getting hacked by Elite, and then release it as *Who Dares Wins II*....

## Shoot 'em up

I do believe the shoot 'em up is coming back into fashion a bit, after having been displaced by arcade-adventures and ladder-and-ramp games (which are now thoroughly satip, and show time too). Most popular at the moment seems to be user-driven stuff in the Demos Design mode. DD themselves have a couple of nice ones out there and I know of more in development. Software speed is considerably less hip than it was a couple of months ago. Construction sets are 'in', too.

I must finish now, it's late and I'm knackered after a heavy *Compuart* session. Hopefully I should have some news next month; the *Commodore Horizons* show will have been and I'll be a bit more in touch with the scene. Hopefully I should have *Avatar* and a copy of *Maverick* by then (both of which I'm dying to get hold of).

—YAK on the beach in a cloud of plumb (4096) ■

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New it may be, but the Triton Quick Disk is already receiving rave reviews in the computer press. For example, in a recent Home Computing Weekly article it picked up their much coveted "Flipped" award.

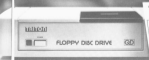
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US GOLD put a slot into the annals of the UK software market a couple of years ago — by simply introducing top US titles in a repackaged form, at about a third of the price of the street imports.

Since then their titles have rarely been out of the charts, and at last they have turned their attention to adventures...

The first of the Sierra On-Line titles, *Mirrod and Princess* has already been reviewed in these pages and is due to be followed by two more, *Mission Asteroid* and *Ulysses and the Golden Floor*.

*Mission Asteroid* is the first and the easiest of the titles. You are cast in a space cabin with the chance to be a hero. A huge asteroid is on a collision course with Earth and you have just seven hours to steer your ship to intercept and destroy this deadly threat. You will begin your journey at mission control and must gather the equipment and training to fly the ship and successfully save the Earth.

In common with all the Sierra On-Line games, these two are graphic adventures using a two word command structure. The graphics are very colourful, if a little juvenile and unimaginative. If you've played adventures like *Level 9* and *Infocom* you might find it a little difficult to "play down" to commands like "GO DOOR" and "TALK SECRETARY" and the limited vocabulary will mean a struggle for the right



Get your secretary to learn your first in *Mission Asteroid* words but persistence usually pays off.

*Ulysses and the Golden Floor* is a much finer and larger game despite the mythological misnomer of the title!

You are the legendary Ulysses charged by the King to return the Golden Floor to Greece. You must search the land around you for clues and equipment before passing to the islands and accepting a crew of sailors for the voyage ahead.

You and your crew will encounter many of the hazards and perils that Ulysses faced, meeting friends and foe to recover the various items and magical words to enable you to complete your quest. Sharpies, sirens and the dreaded cyclops will thwart you if they can. Even the gods may take a hand!



This game is the most enjoyable of the three I've played despite the struggle to find the exact phrasing to pass some obstacles. It is large enough, and the problems logical enough to provide many hours of frustrating fun — if that's not too

\*\*\*ALL\*\*\*  
AMERICAN

ADVENTURE

*Ron Matthews looks at the latest craze to cross the Atlantic — US Gold's disk-based graphic adventure programs*



*Crosses sets out on his quest for the flower*



much of a contradiction.

Another new title that I've only just received falls from American Eagle software via US Gold and is called *Knight's Route*. It is written by Jeron Pearson, who some of you might recognise as being responsible for three of Adventure International's most difficult games, *Escape from Tron*, *The Curse of Crowley Manor* and *San Francisco Earthquake 1906*.

The theme of the game is an original in the author's coding of his name! It seems that you have died and been wrongly conveyed to the firm of Hall. Remarkable though,



Satan offers you a chance to reach Heaven by helping him out with a little problem he is facing. . .

Characters representing the epitome of evil like Hitler and Mussolini have settled in to the Underworld and are not planning the overthrow of Satan to rule there for eternity.

Although the game uses the old two-words system again, a partial vocabulary is provided in the instructions, allowing you to spend more time on the real problems of the game rather than Rogo's Thesaurus!! The previous games would benefit greatly by the inclusion of some of the more interesting in the support literature.

The graphics are of a very high quality and do add to the atmosphere of the game. I've barely scratched the surface in finding a dozen or so locations — though that was hard enough. Still, I'm sure I'm in for much more brain teasing and late nights before I crack this one and I'd be happy to recommend it on its original plot and tricky problems.

To round off, I'd like to mention a Sierra title that's been around a while now — *Ultima III*. The game perhaps falls more in the line of action-adventure and, as the title suggests, is the third in a series of such games. The idea of the series is to take an adventure on a journey in time and space to pain experience and defeat evil wizards



On your desktop, the adventure begins. . .

play them but it's not necessary to complete them to play *Ultima III*.

The play controls is as close to *Dungeons and Dragons* as I've seen on a computer and allows the player(s) to select a single adventurer or a group to enter the arena. The familiar professions of fighter, thief, wizard and cleric are all available. The map of *Ultima* covers a whole world with towns, cities and ports where you can rest, improve your skills and equipment and uncover the important clues leading to your Ultimate goal.

If the idea appeals to you I'm happy to recommend *Ultima*, with the reservation that some of the voluminous manuals provided with the original American version are

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# Plug in and play

Adding rhythms, chords and arpeggios to the sounds of the SID chip, the Sound Bluggy turns the 64 into a powerful playing instrument. *Ann Waugh takes a ride . . .*

AFTER USING some of the many excellent music software packages on the market, there may come times when you feel you would like to get down to something a little more serious, yet you may not want to invest in equipment which requires a PhD to operate. Still here, here thinking of you, **their Sound Bluggy** offers a painless introduction to computerised music making.

The Bluggy is housed in a neat, light grey box and is compatible with the 64, SX and LX computers with software available on disk or cassette. A phone and a mini jack socket provide outputs to your hi fi or headphones. Upon booting the system you are asked to choose in which language you want the Help messages to appear: English, French, German or Italian. You can then go into demo mode or select the keyboard you want to use. **Slag's** mini clip-on keyboard, similar to Commodore's mini keyboard, is supplied with the Bluggy. You can use either of these, **Slag's** full-size CMK-49 keyboard or a similar play-in keyboard.

## Synthesiser

Having sorted that out, you are presented with the Main Menu page which lists the options: End of job, MIDI function, Play, Disk Operations and Song Menu. Movement around each of these sub-menus is with the function keys, and pressing the CMD key causes a help message to pop up at the top of the screen. My Bluggy was one of the first in the UK and the instruction books had not yet been printed. It says a lot for the program design that I was able to use all its features without any instructions — and without any problems.

So what does the Bluggy do? First of all, it contains its own sound synthesiser making it independent of the computer's internal sound chip. The software allows you to program a drum rhythm, design a solo sound, play and record the melody line of a song and play and arrange an accompaniment for it. We'll look quickly at each menu option in turn.

The Song Menu displays the songs stored in memory and nine songs are already installed ranging from numbers and disco numbers to Glen Miller.

Selecting a song puts you into the SOUND EDIT screen which is the main display. Play also sends you to this screen. It is divided into five sections. The top line shows the song number and name and underneath are four windows which show what's going on inside the program. The upper left window displays the solo sound parameters; the upper right window shows the selected accompaniment

pattern; the lower left shows the rhythm name, number and tempo and the lower right is the sequencer window showing what you are playing and recording.

An instrument is constructed in the top left window from four fivage settings: W, F, 4' and 2', rather like fivage steps on an organ, which can be set from 1 to 14. ADSR (Attack, Decay, Sustain, Release) parameters can be varied through eight settings, 14 solo



sounds are already in the program (piano, harpsichord, viola, etc.) and a total of 26 can be stored.

The accompaniment section has the following options: vibrato, bass, chords, rhythm, melody, transpose, melody, one finger chord, track and arpeggio. All the transposes are on/off functions. The bass and chord accompaniment are recorded together when you record the chord part (which we'll come to in a moment) but here they can be individually selected for output. Rhythm plays the bass and chord parts in a three rhythmic fashion. Melody is similar to the ADC (Automatic Organ Computer) feature of Loversy organs which plays a complete chord whenever a single melody note plays. A.C. allows you to play one finger chords from the lower half of the QUERTY keyboard, and track lets you form your own chords.

The rhythm section can store 24 rhythms, and 14 examples are already programmed including rock, disco, funky, samba, tango, march, Reggae and swing beats. The drums

are programmed from a separate screen which shows five drum sounds: bass, snare, rim shot and two cymbals. Patterns are built up across a matrix of slots which are turned on (and/or off) by pressing a key so you can see and hear the drum patterns very easily. There's something about rhythm units which bring out the drummer in people and this section alone kept me awed for hours.

The final window is the sequencer section,



This is used to select the parts you want to play and record solo at chords. A loop option will play continuously.

The Disk Operations menu lets you load and save the songs either individually or all together. You can erase unwanted files, catalogue the disc and format a new one — very useful indeed if you don't have a spare disc on which to save your latest bits.

The final option, the MIDI menu, is a stepping stone in the world of inter-linking. To use this section you also need a suitable MIDI interface, such as **Slag's** I/O, and a keyboard with MIDI sockets which, once plugged in, can be used to control the Bluggy. The four music sections of the Bluggy solo, chords, arpeggio, and program numbers, can be given different channel and program numbers so you can play back the compositions through four separate MIDI keyboards. This has to be heard to be believed. For those of us with only one keyboard, however, it will play back all on one voice and if you have a multi-timed instrument such as Casio's CZ-100 or CZ-1000 you can assign a different voice to each part.

The Sound Bluggy is easy to use, it's fun, it sounds great and it serves as an introduction to the joys, delights — and problems of synthesising the two parts — of recording. If you're outgrowing the SID chip this could be your next step. Take the bluggy for a ride. ■

THE SOUND BLUGGY has a RRP of £99. Ask us VAC. Contact: **Slag (UK) Ltd.**, Atoll Inc, Depot, Rolands Road, Hookwood, Harlow, Surrey RM15 0AN. Tel: 0295 754334.

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# Adventurous Ariolasoft

*Ken Matthews discovers the joys of DIY adventures, and enters the murky world of computer hacking with Activision's latest*

UNLESS you've just returned from Alpha Centauri you'll have at least have heard of the US software house Electronic Arts whose titles have stamped appearing over here under the Artsoft/Leah banner.

To me at least, titles like *M.U.L.E.*, *Antlion* and their excellent construction sets represent some of the finest programming techniques.

New to the Electronic Arts team is Stuart

domes all options so suffice it to say that you have almost certain efforts and up to 10 characters among the 3000 "people" that can be put in a region — if you can't find one that's just right you can draw modify existing shapes or design you own!

The background you have designed can now be populated with other characters. Once again it is up to you to pick their behavior and the parameters they may have. Magic can be made available and up to 333 messages can be used to add to the final touch.

I am sure it would take a long time to get to grips with the full potential of this system, which makes the option of allowing the computer to "take over" at almost any part of the design process a necessary touch. If you are getting a bit out of your depth or just frustrated, let the CPU get on with it and go get a cup of tea!

The basics are covered by no fewer than seven mini adventures which introduce the principles of the programme in easy stages.

Finally, just to show you what can be done, a full-blown adventure, *Knives at Night* is included. This excellent game alone is worth the price of the whole package and it can be detached using the facilities utility to give "worked examples" of how the available techniques can be used.

The *Adventure Construction Set* is a masterpiece deserving of the highest accolades. The owner of this package can look forward to years of entertainment at a price so low that you must really see there's no

in your Christmas stocking.

Activision would have to believe that one of the main pleasures of hacking is that you never know quite what you've gotten yourself into so, as in the film *WarGames*, how to get out of it? Activision use this idea as the basis of their new game *Hacker*. Just like the late night madmen masters you have no books or manual to work on — you are on your own.

The opening "log-on" sequence is a little puzzling at first, but that's the idea.

"You should think up in control of a robot driver belonging to an ambitious company bent on dominating the world by shut out of the several forces locked in the Earth's core.

Things have gone wrong at the secret test site and the pieces of a shoddily documented giving details of the cook-up have fallen into the hands of spies dotted round the globe. You must use the subterranean tunnels circumventing the globe to travel from city to city and recover the evidence which must be delivered to the FBI in Washington before you time runs out.

You are given a sum of money to begin your task and your problems begin — each spy has two rooms for sale, available only after he has agreed to part with his piece of document. You must be very careful to buy only what is necessary or you'll run out of cash and, most tricky of all, some spies will accept one of several different items but some will insist on only one of the 30 on offer.

If this isn't enough, you want to have got a diff robot which begins to go on the black



Smells where Dungeons and Dragons style action adventures, *All Rules and Rules of Horrors* have been delighting our jumbo crowd for some time. These games are distributed copies that allow the players to select a hero/ine from a cast of dozens and set out on an orgy of treasure-grabbing, monster-slaying mayhem in search of fame, fortune and even immortality! All that, mixed with some tricky puzzles and witty messages make extremely playable adventures. At last, Stuart has decided to reveal some of his secrets and let us try and match his skill using the brilliant *Adventure Construction Set*!

I could take up most of the mag writing about this power-packed programme — almost every feature you could imagine is covered in the 44 page manual — but I'll stick to the bare bones for now.

The utility features three basic sets that allow you to create Fantasy, Mystery or Science Fiction adventures.

Once you decide which sort of game you prefer, the amount of work you need to put in is entirely up to you. You have the option of planning the whole thing down to the last detail or letting the programme take care at any point.

The game you construct may include up to 240 locations which can be divided into "regions" of as many as 18 rooms each. The world begins to juggle as the thought of trying to take you through the doors and

**HACKER**  
You've found your way in.  
But is there a way out?

COMPUTER GAMES  
BY ACTIVISION



not long after you start. Add to this the fact that the quality first trips your presence and you've got a really tight game on your hands.

Clear sound effects and excellent graphics, particularly in the eleven surface locations, combine to make this an increasingly playable game that can only add to the good reputation that Activision has been building with the quality of their recent releases.

Next month I shall leave the danger of *Interminable*, uncover the clearer secrets of *Active Male* and hopefully come face to face with the *Worms in Paradise*. ■

# HOT PRINTER

Competition in the low price printer market is hotting up — literally; in the case of Alphacom's 81 thermal printer. John Coolware checks it out

NOT SO long ago the only type of printer which most users of home micros could hope to afford was the so-called thermal printer. Thermal printers work on the principle of passing a print head over the surface of special heat-sensitive paper. The print head provides a very small amount of heat, very precisely and rapidly controlled so that a line of characters can be printed out. At each point on the paper where heat is applied a dot is created, the combination of these dots forming the printed characters. The heat-sensitive paper, which normally comes in roll form, is more expensive than plain paper however.

## Simplicity

The low cost of thermal printers comes from their relative simplicity, as the print head has no internal moving parts. The principal competitors to thermal printers are currently the cheap dot-matrix printers. These have complex print heads which use tiny needles to create each dot rather than the heat source. Dot-matrix printers require a print-ribbon mechanism, which sits between the print head and the paper and leaves a dot of ink on the paper whenever one of the print-head needles is activated.

Obviously, with their needles and ribbons, dot-matrix printers are more complex to produce than thermal printers and thus more expensive. Over the past few years however the costs of manufacture of all types of printer have fallen considerably, as manufacturing technology improves and as the scale of manufacture increases. A major component in the purchase price of any printer these days is the cost of distribution and marketing, which will be roughly similar for all printer types. The upside of all this is that the price advantage of thermal printers has been eroded away and very few new thermal printers are being produced.

Alphacom, Inc. of California specialises in low-cost thermal printers. They were contacted by Times in the USA to design a cheap printer for the Sinclair computers to be sold by Times in the States—the Sinclair ZX printer was viewed as unviable there. This printer was then imported into Europe as the Alphacom 81. As it was designed for the Sinclair machines it only had a 32 column print width, but was available then at around £80, and it gave a clear and reliable print when dot-matrix printers were still coming upwards of £180 (following for leads and interfaces).

Downed from owners of other makes of home computer encouraged Alphacom to redesign their printer, the result being the Alphacom 82. The cost of the 82 was up



around £100 but the printer included a unique feature of a changeable plug-in cartridge-type interface-head allowing it to be used with nearly any of the popular computers without the need for additional interfaces or buffers. The Alphacom 82, despite its versatility, did not prove as popular as was hoped, possibly because it was considerably more expensive than the version for the Sinclair.

New Alphacom have gone a step further. The latest model, the 81, includes the plug-in interface-head and doubles the paper width to give 60 columns. The looks of the Alphacom 81 are also much improved (in my eyes at least) over those of its predecessors. Many of the printer components are plastic rather than metal, which leads to a light design but of good quality. An internal metal chassis provides strength and sufficient weight to keep the printer where it is supposed to be. Overall the printer gives the impression that, if not successful, it should prove reliable.

## Interface

In use the printer is fast and quiet. With the correct interface-head it behaves just like a Commodore printer, and is hence compatible with most commercial software. One problem which is common to nearly all thermal printers however is the quality of the finished printed page. Although the Alphacom produces clear black or blue print depending on the paper used, the paper is in a form which means that you must see it off in page-sized pieces as it is printed. If you want neat even sized pages you must further trim the paper and come how from out the

craft, not the sort of thing to use with a word processor. As a cheap means of producing program listings at times for your own use the Alphacom 81 works just fine.

## Graphics

As well as printing text the Alphacom can be used in graphics mode, which means that provided you don't mind writing your own software you can produce screen dumps or high resolution pictures using the printer. For text you can choose between normal, underlined, reverse (like reverse video), and elongated text along with the Commodore graphic characters. All the options are detailed in a short but surprisingly well-written manual which comes with the special Commodore interface-head.

Competition for the Alphacom 81 comes from the old faithful Commodore 80 and the Brother HB-10. It's worth considering all of these if you are in the market for a cheap printer, but double-check what you want from a printer and look at different prices before you choose between them. Prices tend to fluctuate these days, but the Alphacom at £79 looks the cheapest at the moment. ■

**ALPHACOM:** Alphacom 81 Printer  
**MARKET:** Commodore home computers with serial port.  
**PRICE:** £79 (Roll-paper = £64 for 2 rolls)  
**SUPPLIER:** Iqon Electronics Limited, Glendon Park, Epsom Road, Asen, Berkshire. Tel: (0444) 826661.



# 1541 in first gear

In search of speedier disk operation, *Jeremy Hall* tries out two **QUICK-DISK** turbo cartridge systems, one from the States and one home grown

OWNERS of the 1541 disk drive breathe a sigh of relief when devices to speed up its operation first began to appear. No longer would a large program take 2 minutes to load. The trouble was that usually needed modification to either the 1541 or 84 for turbo, to achieve the results, necessitating any warranty.

The two new devices reviewed here are 'plug in and go' cartridges, which involve no internal modification to either the drive or computer.

## Epps Fastload

The Epps Fastload cartridge is from American software house Epps, and has only recently become available in this country. It only LOADS programs at high speed, so SAVEING is still a slow chore. The speed of loading is greatly improved (up to five times). The cartridge won't load every type of protected disk but works with a lot of them. If it won't load a program there's no need to worry it, simply use the built in double facility.

A lot more than speed increases are offered by this cartridge. To load and run the first program on the disk simply hold down the CTRL key and hit RUN/STOP. To load the disk directory type "D" and press RETURN. This loads the directory to the screen only, so you don't lose the program you have in memory. The "HD" command can be used to send any command to the drive, or on its own tells you the drive's status. So, for instance, to format a disk you would enter "FORMAT:NAME,HD". You can use all the usual LOAD/SAVE commands, but a few short cuts are provided:

```
*NAME system LOAD*NAME*  
*NAME replaces LOAD*NAME*  
*NAME replaces SAVE*NAME*  
*
```

Also provided in the cartridge are a disk and file copy facility, accessed via a series of menus. The disk-copy is not particularly fast, and requires the destination-disk to be formatted before copying commences. The file-copy will only copy one file at a time, and you have to enter the filenames manually. A machine code monitor is included and entered by typing "M" and pressing RETURN. This is quite a useful addition, although the syntax of some of the commands is a bit odd if you're used to standard monitors. Finally there's a track offset facility which allows you to load any particular sector of a disk, edit it on screen, and then write it back.

The documentation consists of a single sheet of glossy paper folded in half with all the available commands explained briefly but comprehensively.

## Quickdisk+

Quickdisk+ is a British product at less than half the cost of the Epps product. Its LOADING speed is approximately the same, but it also offers an improvement when SAVING speed is appreciably the same, but it also offers an improvement when SAVING rate comparison table 6. First LOADING/SAVING is indicated by a striped screen of 80c similar

to some tape turbos. The cartridge can be disabled by typing "80C", and a handy help facility accessed with "MH", which prints a summary of all the commands available. Unlike the EPPX, this cartridge can be used with device number 8 or 9, so people with two drives are covered too.

Quickdisk+ has the same DRS commands as EPPX (1/2/3 and 6), with the addition of a useful error.

NAME replaces LOAD\*NAME\*  
RUNNING a new disk is normally a painfully slow process, but with QUICKDISK in place it takes just 20 seconds (not 10 seconds as claimed in the instructions!) — approximately 1 time faster than normal (see comparison table 2).



The fast file copy is extremely useful and very well implemented. Simply type "MC", insert the source disk (disk from which you wish to copy files), press RETURN and each filename on the directory is printed on the screen one at a time with a YES/NO prompt next to it. To copy the file press "Y", to ignore a press "N". When the last file on the directory is reached the selected files are read in at high speed. The user is then prompted to insert the

destination disk and to set out all the files are copied.

The disk Backup is also quite good and easy to use, taking just over 4 minutes to copy a whole disk (compressed disks only!).

The Cronetics printer software which is built in will drive most printers connected to the user port. This facility did not work on the first review cartridge I saw used, however. The Micro Centre quickly sent me a replacement which worked fine. Type "MP" and the interface will be switched on, giving a summary of all the options on the screen. OFFERING the printer to device 4 selects COM characters, device 5 selects normal characters and a secondary address of 7 gives lower case. The interface can be switched off by typing "0E".

Finally, a reset switch is built into the cartridge which will allow you to break out of any program without the need to power off and on, and does not destroy the contents of main memory.

The documentation which I received was of similar standard to the EPPX cartridge, and quite adequate.

## Conclusions

If you want to use either device with a particular program, check that the program will load with the cartridge before you buy it. If you need a machine code monitor and track editor built into your turbo cartridge then EPPX FASTLOAD is the one to go for. Otherwise QUICKDISK+ is superior in virtually every other way. Add to this the fact that it costs less than half the price of the EPPX, and it becomes a must for every 1541 owner. ■

COMPARISON TABLE 1 — SPEED

	Normal	EPPX	Quickdisk+
Load 100 000 Bg File	65 secs	10 secs	10 secs
Save 100 000 Bg File	70 secs	70 secs	38 secs
Copy 100 000 Bg File	140 secs	80 secs	50 secs
Format New Disk	20 mins	20 mins	20 mins
Copy Disk	15 mins+	8 mins+	4 mins

COMPARISON TABLE 2 — FACILITIES

	EPPX	Quickdisk+
Fast Load	YES	YES
Fast Save	NO	YES
Fast Format	NO	YES
Double Facility	YES	YES
DRS Commands	YES	YES
File File Copy	AVERAGE	VERY GOOD
File Disk Copy	AVERAGE	GOOD
Track Editor	YES	NO
Machine Code Monitor	YES	NO
Help Facility	NO	YES
Device 8 or 9	NO	YES
Combinos Software	NO	YES
Reset Switch	NO	YES

PRODUCT: Epps Fastload Cartridge.  
SUPPLIER: The 84 Software Centre, 1 Princeton St, London WC1R 4EL, Tel: 01-462 8954.

PRODUCT: Quickdisk+.  
SUPPLIER: Micro Centre, Bridge St, Buxton, Derbyshire.  
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Rightman, Chester House, Windsor End, Beaconsfield.

Comdan Computers, 462 Coventry Road, Small Heath, Birmingham.

Empire Electra Centre, 760-766 Leeds Road, Bradford.

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Gordon Harwood, 8871 High Street, Derby.

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P & L Cash Registers, Donville, Bath.

Adams World of Software, 180a Station Road, Edgware, Middx.

Mini Workshop, Station Approach, Epsom, Surrey.

Deatings of Ashford, 81 Preston Street, Farnham, Kent.

Trinity Ltd., 162 Station Road, Harrow, Middx.

Deatings of Ashford, 184-186 Mortimer Street, Haine Bay.

Tomson's World, 15 Paragon Street, Hull.

Carverah Commodore Centre, London Road, Leicester.

Dimension, 2831 Silver Street, Leicester.

Senior Foto, 1/2 Rother Centre Ltd., 258 Tottenham Court Road, London.

Tanaka Computers, 191 Kensington High Street, London W8.

Ramsons, 4 Edgware Road, London W2.

West End Video, 8 Marble Arch, London W1.

Micro Arviks, 224 Tottenham Court Road, London W1.

Harp Electronics, 227 Tottenham Court Road, London W1.

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Service, 234 Edgware Road, London.

Service, 272 Edgware Road, London.

Gulfrinus, 280 Tottenham Court Road, London.

Gulfrinus, 15 Tottenham Court Road, London.

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Chromasonic, 48 Junction Road, Anthony, London N16.

Chromasonic, 258 Maxwell Hill, Broadway, Maxwell Hill, London N10.

G & B Computers, 262 Tottenham Court Road, London W1.

G & B Computers, 230 Tottenham Court Road, London W1.

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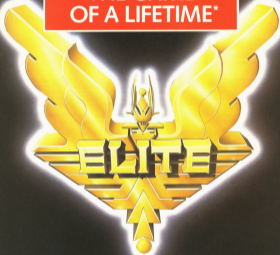
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**GOLD  
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# Window on the world

This simple program from Duncan Anderson allows you to easily define a screen window on your 64, protecting text as you input commands

IN USING RML, 486, and 8000 releases in the course of my study, I have found one particular feature of their operating systems to be of particular use — that of defining a scrolling window, which is then considered as the whole screen.

This feature is particularly useful where the user is required to make an input from the keyboard — all too often on the 64, a painfully one-up screen display soon scrolls off the top, when the user makes a mistake, and a REDDS FROM START error message appears, or the input takes two lines, instead of the anticipated one line. Never fear; with the use of this short machine code routine, you can define an input window, and protect your elaborate instructions/graphics. In the writing of this program, there were two ways of approaching the problem.

To use the routine, type in the BASIC listing, and save it before running, as it will **NEW** itself upon completion. When the program has run, the screen will show credits on the top half of the screen, which is now protected by a window in the bottom half — so make the screen scroll, and the credits should stay in place.

Furthermore, the 'Home' and 'Clear' keys have been redefined so that they only act upon the window — clear only clears the window, and home homes the cursor to the

top L/H corner of the it. To create a window of your own dimensions, issue the command **!W**, followed by a number from line 25 (the line-number of the top of the window).

In writing about writing this routine, I realised that I had two possible causes to take, namely:

- (1) Rewrite the screen printing, and scrolling routines, using the vectors, or
- (2) Copy the ROM's into RAM, and make changes, as necessary to them.

## Interpreter

I settled for the second, since the amendments to the operating system are surprisingly small, and rewriting these routines would have involved copying large sections of the Kernel into my program. Furthermore, I decided to implement a special command in BASIC to ease the load for **ENV**, and **POKE** statements in order to get the parameters into the routine — the **!W** command, sensibly named to simplify the recognition of it within the interpreter.

When the machine code is initialised, two processes are performed:

- (1) The vector for token evaluation (**ROM \$200**) is redefined to point to the new evaluation routine, whose Pseudo-code, is: 1. Jump to the sub-routine which places the next byte of BASIC text into the accumulator (RT). 2. Compare this with '!' four marks

for new keywords) 3. If new keyword, then jump to our routine 4. Else, replace the byte of text, and jump to the old evaluation routine.

(2) The Kernel and Basic ROM's are copied into the RAM which they occupy, appropriate alterations are made, and the ROM's switched out to reveal the new improved operating system.

When the **!W** command is initialised, control is transferred to the window routine which evaluates the parameter for jumping to two ROM routines — **!ADDA**, which evaluates the parameters, placing in the floating point accumulator. Then the routine **!MOV7** is used to convert it, the result being in the A/Y registers, and places them into the operating system.

For those who may wish to add other machine-code routines while this one is operative, please note that the zero-page locations **\$FB** & **\$FC**, are now used as storage for the window routine.

As can be seen from this program, the addition of commands into the operating system is relatively straight forward. So long as the initial routines in the computer are used, there is little to do in implementing the command — the actual code for getting the OS to recognize the command, very little code indeed, and that includes checks for errors. ■

```

1 REM *****
2 REM **** WINDOW UPDATE TO KERNEL ****
3 REM **** (C) D.ANDERSON 1985 ****
4 REM **** THIS PROGRAM WILL NEW ****
5 REM **** ITSELF - SO SAVE BEFORE ****
6 REM **** RUNNING ****
7 REM *****
100 ADDRESS = 49132
105 READ HEX#
110 IF HEX#="XK" THEN GOTO 7000
120 GOSUB 1000
125 PRINT "J":ADDRESS
130 POKE ADDRESS,DECIMAL
135 ADDRESS = ADDRESS + 1
140 GOTO 105
1000 REM *** HEX TO DECIMAL CONVERT ***
1005 DECIMAL=0
1010 FOR COUNT=1 TO LEN(HEX#)
1020 DECIMAL=DECIMAL*16
1030 IF MID$(HEX#,COUNT,1) > "9" THEN 1040
1040 DECIMAL=DECIMAL+ASC(MID$(HEX#,COUNT,1))-48
1050 GOTO 1070
1060 DECIMAL=DECIMAL+ASC(MID$(HEX#,COUNT,1))-85
1070 NEXT COUNT
1080 RETURN

```

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```

5000 DATA A9,8C,A0,C0,8D,89,83,8C
5010 DATA 89,83,A9,A0,85,FC,A9,80
5020 DATA 85,FB,A0,80,20,21,C0,A9
5030 DATA E0,85,FC,80,80,20,21,C0
5040 DATA 80,31,FB,91,FB,C0,80,FA
5050 DATA E6,FC,A5,FC,F0,85,C9,C0
5060 DATA D0,EF,80,A9,35,85,01,A9
5070 DATA FF,85,FB,A9,18,85,FC,A9
5080 DATA 20,8D,86,E5,A9,32,8D,67
5090 DATA E5,A9,C0,8D,68,E5,A9,EA
6000 DATA 8D,69,E5,8D,6A,E5,8D,6B
6010 DATA E5,A9,A6,8D,8E,E5,A9,FC
6020 DATA 8D,5F,E5,A9,E4,8D,64,E5

```

```

6030 DATA A2,FB,8E,65,E5,A2,D0,8E
6040 DATA 66,E5,A2,F0,8E,67,E5,A2
6050 DATA 20,8E,68,E5,A2,82,6E,69
6060 DATA E5,A2,C0,80,6A,E5,A9,EA
6070 DATA 8D,6B,E5,8D,20,73,8D,C9
6080 DATA 21,F0,86,20,79,80,4C,E7
6090 DATA A7,20,73,8D,C9,57,F0,83
6100 DATA 4C,80,AF,20,73,80,20,8C
6110 DATA C0,80,9C,F7,00,94,FB,4C
6120 DATA AE,A7,A6,FB,00,96,D6,A2
6130 DATA 80,96,D3,60,20,8F,A0,20
6140 DATA F7,37,39,00,00,05,C0,10
6150 DATA 30,01,60,4C,40,82,15,14

```

```

6160 DATA WX
7000 REM *** INSTRUCTIONS & INIT ***
7010 SYS 49152
7020 PRINT"J";
7030 PRINT
7040 PRINT"          *** C-64 KERNEL V2.2 ***"
7050 PRINT
7060 PRINT" *** (C) T. ANDERSON & -OMODORE 1985 ***"
7070 PRINT
7080 PRINT"          *** 30000 1**,- BYTES FREE ***"
7090 PRINT:PRINT:PRINT" LOCATIONS $C000 - $C0CB NOW OCCUPIED"
7100 PRINT"          BY KERNEL UPDATE"
7110 PRINT"          WINDOW COMMAND - 'M TOP'"
7130 PRINT CHR$(14);CHR$(8);
7140 IN 011
7150 NEW

```

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5. Space Ball	25. Ocean 3	46. Phoenix
6. Storm	26. Sea	47. Black Sea
7. Under Landing	27. Ocean 4	48. Submarine 3
8. Under 2	28. Ocean 5	49. The Power
9. Strike 1	29. Ocean 6	50. Snow Suit
10. Strike 2	30. Ocean 7	51. Ocean 8
11. Ocean 8	31. Ocean 9	52. Ocean 9
12. Ocean 9	32. Ocean 10	53. Ocean 10
13. Ocean 10	33. Ocean 11	54. Ocean 11
14. Ocean 11	34. Ocean 12	55. Ocean 12
15. Ocean 12	35. Ocean 13	56. Ocean 13
16. Ocean 13	36. Ocean 14	57. Ocean 14
17. Ocean 14	37. Ocean 15	58. Ocean 15
18. Ocean 15	38. Ocean 16	59. Ocean 16
19. Ocean 16	39. Ocean 17	60. Ocean 17
20. Ocean 17	40. Ocean 18	61. Ocean 18
	41. Ocean 19	62. Ocean 19

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# READERS SURVEY

A few issues back we carried out a readers survey. After an enormous response, we collated all the results, and have been using the information to give you the sort of Commodore magazine you want.

For your interest, here are some figures with a few comments.

## MICROS OWNED



CBM 64	67.6%
Vic 20	14.9%
CBM	13.6%
Plus/4	3.4%
5564	0.1%

It would be interesting to run this survey again in a year, and assess the penetration of the C128 and Amiga.

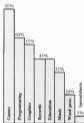
## READERS' AGES



16-20	41.4%
21-30	24.7%
31-40	18.2%
40+	15.7%

CompuLink subscribers: 4.5%.  
MicroLink subscribers: 3.8%.  
30% of readers say they may change their micro in the next year; most popular possibility is the C128.

## MICRO USES



Total adds up to more than 100% due to overlapping interests.

## MAGAZINE FEATURES

We asked you how interested you were in a range of subjects, and how much you liked the various features in *Commodore Horizons*. The subjects in which readers are most interested were:

Basic programming	60%
Graphics	60%
ArCADE games	60%
Music	45%
Machine code	40%
Hardware reviews	40%
Communications	25%
Word processing	15%
Business	15%
Adventures	10%
Spreadsheets	10%

Most games players were understandably least interested in spreadsheets, database and wordprocessing features. Communications articles were also low on most readers' list of priorities.

Readers' opinions on the regular features fell roughly into the same pattern. The most liked features were:

Letters	85%
Competitions	80%
News	75%
Games	70%
Utilities	70%
Hardware	60%
Programming	60%
Cartoons	55%
Support	50%
Adventures	50%
Profile	30%

The most disliked features were the Adventure column (25%), Profile (20%), and cartoons (20%). Very few disliked the news, letters, hardware reviews or competitions. Adventure games are obviously an acquired taste; you either love or hate them. We can't understand the number who disliked the Profile feature, since many readers requested more. And The Future is very fond of the cartoons, so hands off. On printed listings, 20% typed them in often, 15% sometimes and 5% never.

Most popular suggestions for extra features included news from America, interviews with programmers and computer users, simple hardware projects and interfacing, and a page of short programming routines and games tips. We'll be looking at all these ideas in future issues.



There seems to be a feeling that there aren't enough programming articles and readers' listings, so we'll be looking at the possibility of boosting them. The readers' listings section obviously relies very heavily on you, so start sending them in as fast as you can.

Thanks to everyone who took the time to fill in the forms; we hope to be able to provide you with a better magazine as a result of your efforts. ■

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## Sound words

I AM designing and making a technology project at school, and am looking for any available information of sound recognition devices for the C128/64. Could you give me some idea what is involved?

Terry Joyce  
Trowbridge  
Glos

HAVE A LOOK at the September issue, where we review the Auding Pulse Master. This should give some ideas. Also available is the *Big Key* system from William Stael, which was reviewed in April 1983.

Generally speaking, sounds are transformed into waveforms using a microphone and an analogue to digital converter. The waveform is then digitised, and compared with similar tables in the computer's memory. The appropriate number language programming and the necessary hardware would be yours to design; if you can obtain a copy of *Robey Zaks' s552 Applications* from Hayes, ISBN number 0-89558-815-6, this might be of some help to you.

## Load error

I HAVE a 64, and the tape drive has stopped working. The fault lies with the 6510 CPU, and I will have to replace it. My 64 is only about 18 months old, and I know of five other 64 owners who have had this problem, and all have used a reset switch. Could this be the cause of the problem? I have also heard that in 128 mode, the C128 refreshes the screen too slowly for it to be used as a games machine. Is this true?

F Popper  
Stokenbridge  
Leics

IF YOU/US like there may be faults in the reset switches, leaving some voltage floating around where it should not be. Have you tried interchanging the two 628 chips? It may cure the

problem provided you fit the faulty reset switch.

No, the screen refresh is not slower in C128 mode: what can happen in 60 column mode is that when using bitmapped graphics (only possible in machine language) all data is passed through a register in the 6563 60 column video chip and not memory mapped, so that updating the screen will take twice as long as either the 128 or 64 mode, or the 128 in 40 column mode, which uses the 6566 40 column video chip. But the 128 is fine in 40 column mode for games programming.

## Vic words

I AM considering buying a word processing package for the Vic 20. Could you suggest the best package which will be suitable for general use and writing short letters?

Andrew Dault  
Warminster  
Wilt  
FOR ANY VIC, including unexpanded, you can try *Recursive*, a cartridge which fits in the expansion port. This is available from *Thurs-COM* at *Thomson House, 296 Farnborough Road, Farnborough, Hampshire GU14 7NL*.

With at least 6K, try *Word Processor 3.13* from Intelligent Software. This is an American import, so you will have to contact a specialist dealer. With at least 16K, you could try *Flexwriter*, which should be available from *Commodore's Vicsoft* on 034-08355. Another good choice would be *Word Manager*, which supports 60 columns.

## Three sheets

I REQUIRE a spreadsheet for the 64, but there is a bewildering array of possibilities. I have already been caught out buying a "cheap" home finance package, and do not want to make the same mistake again.

Basically I require a spreadsheet which can

generate pie and/or bar chart displays, and also have relative file handling so I can use it like a filing cabinet, at less than £20.

Dr M J Astley  
Netherbed  
Oxon

**AUTOGENIC'S** *Affire* Mapple generates horizontal or vertical bar graphs or scatter graphs, and is also a fully user programmable database management system.



Another option is *Prostrate 2*, which gives an 80 column option which is legible though not recommended for prolonged viewing.

A bit more expensive, but still good value for money, is *Flexwriter*, which gives full database plus file and bar graph facilities. See your local dealer for an opportunity to compare the options.

## Quiz query

I AM writing a quiz game for my C64, which has two players posing business when they think they know the answer. There are going to be about 600 questions in the quiz, but I can't work out a routine to make it pick random questions that not pick them again. Could you help me?

Andrew Roberts  
St Albans  
Herts

I ASSUME that your 600 questions are in the form of data statements in your program. If you don't mind the questions always being asked in the same order, a simple loop will suffice.  
FOR FOR I=1 TO 600  
READ Q\$:PRINT "The next question is" Q\$  
IF INPUT "Your answer";  
RE

```
120 IF RE=AS THEN  
PRINT "Correct"  
C=C+1:NEXTASKED 140  
150 PRINT "Wrong answer"  
NEXT  
160 PRINT "You have answered "C" questions correctly"  
170 END  
180 DATA REM each question, followed by its answer.
```

The alternative is to pick a question using a number generated using *RN183.1*, from 1 to 600 inclusive. The questions and answers will have to be loaded into an array first. The number picked will then point *QUESTION* to, and check the answer. Using a marker array such as *ANS*, which is set to equal 0 for each value of 1 that is used, not this when generating a random number to make sure that this number has not been used previously. If so, then discard it and try again. You must also start with a counter to see if you have already used all 600 questions; then exit from the random number loop otherwise you will go around forever!

## Bulletins

I WOULD LIKE to find out something more about "bulletin boards". I understand that you need a modem to access them, but what sort of hardware and software do you need to set up your own? Is it necessary to get any form of licence to operate one? And what is the best way to publicise such a bulletin board when you've set it up?

J. Hart  
South London  
NO1 1HT:506 is required to run a bulletin board — after all, you are using the telephone, not broadcasting. Most bulletin boards in this country operate at 300 baud, full duplex, with only a few using reverse *Prodat* speed (which enables a *Prodat* modem to access them). *Prodat* and *Microdot* operate on 1200/75 baud. Suitable software to run a 300 baud service was listed in the excellent *American* magazine, *Compu's Gazette*, in three parts recently.





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## Artist 2000

This 64 utility comes from Frank Singley of Market Harborough.

THIS PROGRAM, Artist 2000, is designed to run on the 64 using a joystick in Port Two. As the name suggests, it allows you to design pictures, save them to tape or disk, and recall them as you desire.

Pictures are created using the 64's GEM graphics character set. Three screen locations are used: one for creating the design, one for displaying the instructions, which are accessed by pressing 'F', if the space bar is pressed, it screens a third screen which displays the whole 256-character graphics set. On this screen, the cursor flashes at the top left hand corner. Move the cursor over the desired character with the joystick, press the fire button, and the program will return to the design screen.

Pictures MUST be STORED by pressing 'F' before saving to tape or disk. This causes a short delay while the arrays are filled with data. Typical recording times are 6 minutes for tape or 1 minute for disk.

Each section of the program is headed with optional REMs.

You might like to see this program to enter our Computer Graphics Challenge. If so, please let us know that you have used it when you send in your entries.

```

1 REM *****
2 REM *      ARTIST 2000      *
3 REM * BY FRANK SINGLEY 1984 *
4 REM *****
5 REM * CLR PAGE; PROTECT PAGE 14/13 *
6 REM *****
7 REM *****
9 PRINTCHR$(144);GOSUB1000;POKE52,56;POKE56,56
10 X=1524;C=34272;J=56320;CL=F;H=160;ENDPROG(1000);COX(1000)
20 PRINTCHR$(147)
27 REM *****
28 REM * PAGE 13 DISPLAY *
29 REM *****
30 POKE53272,(POKE(53272)+AND(15)*OR240);POKE648,60;PRINTCHR$(147)
40 PRINT"##          ARTIST 2000          "
50 PRINTBK(15);"OPTIONS" PRINT
60 PRINT"F1.....CLEAR SCREEN"
70 PRINT"F3.....CHANGE COLOUR"
80 PRINT"F5.....RECALL PICTURE"
90 PRINT"F7.....STORE PICTURE"
100 PRINT"SPACE AND JOYSTICK TO CHANGE CHARACTER"
110 PRINT"(1).....INSTRUCTIONS: PRINT/PRESS FIRE TO ERASE"
120 PRINT/PRINT"F2.....LOAD PICTURE FROM TAPE"
130 PRINT"F4.....SAVE PICTURE TO TAPE"
140 PRINT"F6.....LOAD PICTURE FROM DISK"
150 PRINT"F8.....SAVE PICTURE TO DISK"
160 PRINT:PRINT"STORE PICTURE BEFORE SAVING!"
170 PRINT:PRINT"PRESS KEY WHEN READY"
180 POKE53272,(POKE(53272)+AND(15)*OR240);POKE648,60
190 POKE53288,15;POKE53289,15
200 GET#:"DF#=";"THEN200
207 REM *****
208 REM * BACK TO PAGE ONE *
209 REM *****
210 POKE53272,21;POKE648,4;POKE53288,0;POKE53291,0
220 POKE54296,15;POKE54277,200;POKE54278,200;POKE54276,17
227 REM *****
230 REM * MAIN PROGRAM *
231 REM *****
232 GET#
240 IFR#="1"THEN100
250 IFR#="F"THENPRINTCHR$(147)
260 IFR#="F"THENGOSUB500
270 IFR#="F"THENGOSUB1000
280 IFR#=" "THENGOSUB1100
290 IFR#="F"THENENCL=CL+1;IFCL>14THENCL=1
300 IFR#="F"THEN620
310 IFR#="F"THEN630
320 IFR#="F"THEN1200

```





```

338 IFR#="M" THEN I=99
340 TT=TT+1
350 IF (PEEK(J)+RND1)=@THE@KK+1 : TT=@ : IF@2@23THE@KK-1
360 IF (PEEK(J)+RND1)=@THE@KK-1 : TT=@ : IF@1@24THE@KK+1
370 IF (PEEK(J)+RND2)=@THE@KK+4@ : TT=@ : IF@2@2@3THE@KK-4@
380 IF (PEEK(J)+RND1)=@THE@KK-4@ : TT=@ : IF@1@24THE@KK+4@
390 IF (PEEK(J)+RND1@)=@THE@P@K@, 32 : @T@2@2@
400 IFR=XTHEN P@K@5429@, @
410 IFR@XTHEN @=INT(R#*(1+@254))+1 : P@K@5427@, 2 : P@K@5427@, 2 : P@K@5429@, 15
420 P@K@K, H : P@K@544@, C,
430 IF TT=1@@THEN C@=INT(RND(13)+1)
440 IF TT<1@@THEN P@K@532@1, @ : P@K@532@@, @
450 IF TT>1@@RND TT<15@THEN P@K@532@1, C@ : P@K@532@@, C@
460 IF TT>1@@THEN HT=@
470 R#X : @T@2@2@
477 REM *****
480 REM # STORE PICTURE #
490 REM *****
500 P@K@5429@, @ : P@R#=@T@2@2@
510 C@X(R)=P@K@1@244@+R : C@X(R)=P@K@5@29@+R)
520 NEXT R : PRINT@R@(147) : RETURN
537 REM *****
539 REM # LOAD PICTURE FROM TAPE #
539 REM *****
600 P@K@5327@, (P@K@5327@)+RND15 : @R24@ : P@K@64@, 6@ : PRINT@R@(147)
610 P@K@532@@, 15 : P@K@532@1, 15
620 OPEN 1, 1, "COMP, RT"
630 P@R#=@T@2@2@
640 INPUT@1, C@X(R) : INPUT@1, C@X(R) : NEXT R
650 CLOSE 1
660 @T@2@2@
737 REM *****
740 REM # SAVE PICTURE TO TAPE #
750 REM *****
660 P@K@5327@, (P@K@5327@)+RND15 : @R24@ : P@K@64@, 6@ : PRINT@R@(147)
610 P@K@532@@, 15 : P@K@532@1, 15
620 OPEN 1, 1, "COMP, RT"
630 P@R#=@T@2@2@
640 PRINT@1, C@X(R) : PRINT@1, C@X(R) : NEXT R
650 CLOSE 1
660 @T@2@2@
997 REM *****
999 REM # RECL. PICTURE TO SCREEN #
999 REM *****
1000 P@K@5429@, @ : PRINT@R@(147)
1010 P@R#=@T@2@2@ : P@K@1@244@+R, C@X(R) : P@K@5@29@+R, C@X(R) : NEXT R
1020 RETURN
1027 REM *****
1030 REM # SELECT NEW CHARACTER #
1030 REM *****
1100 P@K@5327@, (P@K@5327@)+RND15 : @R224 : P@K@64@, 5@ : X@=1433@ : X@=P@K@C@O
1110 P@K@5329@, @ : P@K@532@1, 15
1120 IF (P@K@C@J)+RND1)=@THE@0@+@0@-4@ : IF@0@1433@THE@0@=1433@
1130 IF (P@K@C@J)+RND1)=@THE@0@+@0@+4@ : IF@0@1533@THE@0@=1533@
1140 IF (P@K@C@J)+RND4)=@THE@0@+@0@-1 : IF@0@1433@THE@0@=1433@
1150 IF (P@K@C@J)+RND@)=@THE@0@+@0@+1 : IF@0@1533@THE@0@=1533@
1160 IF (P@K@C@J)+RND6)=@THE@11@
1170 X@=P@K@C@O : P@K@X, 14@ : P@R#=@T@2@2@ : NEXT R : P@K@64@, X@ : @T@2@11@
1180 X@=P@K@C@O)
1190 P@K@5327@, (P@K@5327@)+RND15 : @R1@ : P@K@64@, 4 : RETURN
1197 REM *****
1198 REM # LOAD PICTURE FROM DISK #

```

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```

1120 REM *****
1200 POKEX(3272)-(PEEK(3272)+AND(5)OR248-POKE648,68):PRINTCHR(147)
1210 POKEX(3288,15)-POKE3281,15
1220 OPEN:G.S."8-COMP.ART.G.S"
1230 FOR#8TO330
1240 INPUT#8,OR(8):INPUT#8,CO(8):NEXT#8
1250 CLOSE#8
1260 GOTO200
1300 REM *****
1300 REM * SAVE PICTURE TO DISK *
1320 REM *****
1400 POKEX(3272)-(PEEK(3272)+AND(5)OR248-POKE648,68):PRINTCHR(147)
1410 POKEX(3288,15)-POKE3281,15
1420 OPEN:G.S."8-COMP.ART.G.S"
1430 FOR#8TO330
1440 PRINT#8,OR(8):PRINT#8,CO(8):NEXT#8
1450 CLOSE#8
1460 GOTO200
1490 REM *****
1490 REM * PAGE 14 DISPLAY *
1499 REM *****
1500 POKEX(3272)-(PEEK(3272)+AND(15)OR224-POKE648,56)
1510 PRINTCHR(147)
1520 S=14336-FORC=8TO463STEP48:FOR#8=8TO15:POKE3+C+(2#8),S:(S=S+8):NEXT#8,C
1530 S=233-FORC=8TO16:POKE15388+(2#C),S:(S=S+8)+1:NEXTC
1540 S=8-POKE3272-(PEEK(3272)+AND(15)OR16-POKE648,4)
1550 RETURN

```

## Zig-Zag

This game for the C16 comes from D  
O'Connor of Farnham, Surrey

ZIG-ZAG is a simple game using many  
useful programming techniques. The player,  
represented by a star in the top right hand  
corner of the screen, has to move across the  
screen filling in the blank spaces. Direction  
is controlled by keys W, A, Z and X. The =  
key advances the player a level.

You can stop your movement by hitting

the side of a room, but this loses points. You  
must dodge the blocks which appear  
throughout the rooms, or the game ends.  
Points are given for the number of steps  
covered before the timer runs out. The screen  
is drawn using several set graphics; the text  
in line 270 uses PRESS ANY KEY, and that  
in line 280 GAME OVER.

```

10 PRINTCHR(14):PRINT"ZIGZAG"-(X=121+L+L+1)+@:COLOR(8,2):P=79:R=8:V=8
20 FORT=1TO2:PRINT"@"
30 PRINT"*****"
40 FORT=1TO20:PRINT"@"
50 PRINT"*****"
60 COLOR(2,4):FORT=1TO22:FORD=1TO2+L:POKE3872+C+D+D+DHT(2+37#R#(8)),168:NEXTD:HE
XTT
70 V=8:GET#8:IF#8="Z"THEN#8=-1
80 IF#8="X"THEN#8=1
90 IF#8="A"THEN#8=40
100 IF#8="R"THEN#8=40
110 IF#8="="THEN#8=1
120 X=X+8
130 IFPEEK(3872+X)=34THEN#8=Y:SC=SC-18
140 IFPEEK(3872+X)=168THEN#8=1:500,50:50:400,50:50:50:200
150 IFPEEK(3872+X)=32THEN#8=P+1:SC=SC+2:50:400,500,5
160 IFX=3872+X,42:IFYC=H#82=8THENPOKE3872+Y,32
170 IFYC=H#82=1THENPOKE3872+Y,160
180 IF2=1THEN#8=8:LS2=1
190 FORT=1TO58:(L#18):NEXT
200 REPOB-POKE3872+P,8:IFD=32THEN#8=P-1:RESTORE
210 IFP=-1THENPR(HT"@";P,1,1,1,1,1):GOTO260
220 PRINT"*****"
230 IFP=721-(L+28)THENPR(HT"@";L,1,1,1,1,1):GOTO16
240 GOTO70
250 PR(231,231,234,234,246,246,27,27,117,117,116,116,181,181,22)
260 FORT=1TO1340:GET#8:NEXTT
270 R="":PR(HT"BL"##P,1,1,1,1,1):GETC:IFC="Z"THEN#8=8:ELSEC=8:R#H
280 PRINT"*****"

```



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CALLING C64/64, 16/64 and VIC-20 software games - lots, bought good or swapped programs also wanted, swapped and I am looking for an introduction to Basic Part 2 for the 16, 16/64, please call or write to: Alan Martin, 71 Stabroam Close, Bowick, Manchester 15, Tel: 061-273 1480.

WANTED: C70 starter pack, will use up to £50, also wanted VIC-20 - C64 software up to £40 depending on memory size and software. Tel: 0293 932421 after 9pm.

AUSTRALIAN C64/64 user is looking for foreign C64/64 titles in exchange software on disk, over 150 titles, please contact to Dennis Lee, 8 Lumbia Ave, Como N.S.W. 2233 Australia, all letters answered.

WANTED: 1041 Drive of 1000 Parts urgently, save £130 of original games for 16/1, or 170 worth for 15/20. You can choose from given list, many good titles wanted. Sean O'Connell, 73 Hawthorn Road, Derry, N. Ireland, BT18 2WY.

### TO SWAP

The C64/64 Exchange are still "swap" software for C64/64 and VIC-20 titles and tapes! Call 01 879 8944 (ask for Cory) after 9pm.

C64/64 SOFTWARE on tape to swap including: Search Files, Road One Moscow, Final 8, Code Runner, and other English, American and German software, write to: Luciano Baratta, Camino, 9 16910, S. MATEO, ITALY, Tel: 021644.

C64/64 user wishes to swap software, more than £20 titles, disk or cassette, send you list to: BERRY Classics, Kerdolow, CO1 8TW, 06 11 211, Alton, Gosport, all letters answered.

C64/64 software swap disk titles £200 includes: Strip-Punks, Impossible Mission, F.S.I., Ghidoulers, Dambusters, free membership to this world wide club. Send email list to: David Pineda and P.S. for sale (disk) £75 each, P.O. Box Pines (S.W.), Woodward, 928 1, South Africa.

C64/64 software to swap titles include: Rocky Horror Show, Gregg Ravings, Marston, Sunny Fun, Fast, Nighty Night, plus many more top class games. Tel: 02022 721671, ask for Craig, also writes to offer.

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# Rockets

This expanded 3-D program comes from *Atari's Annals of Atariland*.

IN THIS GAME you are in command of a battery of ten rockets, which you must use to destroy attacking enemy fighters and UFO's. The fighters and UFO's fly at random heights from right to left or left to

right, with the heights and velocities varying according to the level on which you are playing. There are three play levels, easy, average and hard. The minutes are launched using the A key.

```

0  SCORE=0000  FR=1TH0125
10  PR1=11779
20  PR1=1  PLDR6 1411+
40  PR1=020 28  PR1=3A 20
50  PR1=2148717477  PR1=1  PR1=1-114000+ 1NEXT
60  PR1=7032174740  PR1= PR1=1 1NEXT
70  PR1=0003 30
80  PR1=20 20 20 127 127 00 00 127
90  PR1=0000 1000
100  PR1=0000 1000
110  PR1=201 201 201 201 201 000 201 201
120  PR1=703170071 40301  PR1=0 1NEXT
130  PR1=0000 1000
140  PR1=0000 1000
150  PR1=24 48 820 126 66 66 8
160  PR1=1077
170  PR1=1 1111111111111111111111111111111
180  PR1=1 1111111111111111111111111111111
190  PR1=1 1111111111111111111111111111111
200  PR1=1 1111111111111111111111111111111
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- Full-function calculator. Add, subtract, divide and multiply—directly or using figures in a document.

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# The soul of a new machine

Robcom's Turbo cartridges can massively expand your 64's capabilities. Derek Lawson puts them through their paces

Although housed in a standard Commodore 64 cartridge case, the Robcom Turbo cartridges are in effect programming utilities — the most powerful collection of routines ever collected together in one place.

Make no mistake — the Turbo cartridges are computers' purchases for any serious 64 user. They overcome many of the problems of Commodore Basic, DOS and hardware, and transform your computer into an altogether more powerful machine. The Turbo cartridges are deceptively plain in appearance, though they come packaged in a smart slide-style case, containing the cartridge, cassette head alignment tape, and a clear and full manual.

## Powerful

There are five cartridges, each with a different selection of utilities. The most powerful, the Turbo 50, contains all the available routines, and in my opinion this is the one you should buy. The price cost involved is small in comparison with the value of the facilities gained.

So what is so special about Turbo 50? What can it do that other programming and cartridge cannot? Let's see through the facilities.

Firstly, the cartridge is machine transparent. It should operate without interference with any existing software. However, in case of problems, you can type QUIT to switch the cartridge off without having to remove it.

The built-in RESET function can also be helpful in the case of keyboard lock-ups, or for re-writing programs without changing Basic or machine code.

SHOW gives an on-screen list of all the Turbo commands. The first main section is the Basic programming toolkit, which includes a wide range of useful routines. AUTO creates program line numbers with a user-definable step size. DEL removes whole lines of Basic from memory. FIND will display each line containing a specific string, while HELP will display errors in programs just executed — a useful function of Commodore Basic 7.0.

OLD removes a NEWed program. FLIST shows a listing page by page; RETURN automatically renumbers listings through it's not clear from the manual whether it copes with renumbered lines. SET allows the screen and header colours to be changed. All these facilities are very useful, but Turbo hasn't

even begun to run out of uses. The Advanced section of the Basic Toolkit contains commands to convert decimal to hex and back, enable or disable function keys, autorepeat keys, trace programs as they run, and in all the cartridges except 50, list all values of variables.

The next useful section is the Function Key Programming; on power-up, the F1-F8 keys allow you to perform certain functions, such as tape to tape transfer, disk loading, listing and running with a single keypress. At last the mysterious function keys become useful!



Many users will be most interested in the range of cassette and disk commands. Turbo 50 allows you to SAVE programs to tape in a special format which reloads at ten times the normal speed; MERGE a program on tape with one already in memory; check whether a cassette tape has been properly carried out; save to disk in a special format allowing a speed increase of up to five times on reloading; merge from disk; format a disk; scratch a file; rename an old file or validate a disk; or change the device number of your disk drive. Anyone who has had to cope with the vagaries of CBM DOS will regard such ease of operation as a godsend. Turbo 50 also contains a range of COPY commands allowing programs on cassette or

disk of up to 128 blocks to be backed up, to cassette or disk.

For me, one of the most useful sets of commands is the Printer utility section. This contains Commodore software allowing non-Commodore printers to be used, with a suitable connection cable. You can print out in two modes; normal, in which the Commodore graphics characters are reproduced; and LISTING mode, in which they are replaced by easy-to-read abbreviations. In Constant operations, it's also possible to define the width of the printout you want; no more messy listings!

The Turbo 50 cartridge also contains a useful-screening machine code routine, with over thirty commands in only 4KB of memory. Although many users will never want to delve into the mysteries of machine code — myself included! — thousands more will find the inclusion of a full spec monitor in such a useful general utility cartridge an unexpected bonus.

To do make sure that cassette users get the best out of the Turbo cartridges, the package also includes a cassette head alignment tape which, by a simple routine involving coloured patterns on the screen, enables you to adjust the datacentre's head with a small screwdriver, until the optimum alignment is achieved.

## Collection

There are five cartridges in the series. Turbo 10 contains everything but the fast disk routines and monitor; Turbo 20 is just the monitor; 30 has everything but the Commodore software and monitor; 40, everything but the fast disk routines; and 50 is the complete collection.

Apart from single-minded games players, with no interest in modifying games or writing their own programs, I cannot think of any Commodore 64 user who would not benefit from using a Turbo cartridge. Whether you count it as hardware or software, the Turbo range has a fair claim to be one of the year's best computer products.

Product: Turbo cartridges  
 Model: CBM 64  
 Supplier: Robcom, 36 Market Place, London  
 SW11 1EP, 01-299 0835  
 Price: £28.95 to £38.95

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DISK & CASSETTE

## Wizard

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MAX \*\*\*\*\*

THEIRAL OCT 1986



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- † 9 speed levels
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# COMPUNET GRAPHICS



*Computer artists — this is your chance to display your skills and win great prizes. Create a picture on your micro and you can win a fabulous graphics package, and see your work in Commodore Horizons and on Compunet.*

THERE'S NOW a better way to learn to use your 64 to its maximum — through the interactive abilities of Compunet. Using the Commodore Communications module, you can upload your own program material onto the Compunet database, or download software for your own use.

Users of the system quickly discovered the advantages of sharing programming techniques, especially in the area of graphics. What do you do with a computer picture when you have created blood to create it? Well, you could show it to your mates if they want to come around and look at your computer... then you can just file it. But with Compunet, you can upload your masterpiece for everyone to see. First live-vids, then bit-mapped pictures, and now animations, regularly appear on the Compunet pages.

The first picture which made it onto the

Picture Gallery look, in retrospect, a little crude. Later ones are much more sophisticated. This is no accident. By posting pictures in the Picture Gallery, artists were able to share techniques with each other. Effects of light and shade, drawing circles in live-vids, avoiding colour limitations, and so on, were all discussed on the Chat Line. Recently artists such as MACHIN have been uploading frames explaining their programming techniques.

Displaying your works on Compunet has other advantages — Virgin Games' forthcoming *Blue Haze* program has a loading screen designed by Compunet artist Rex Jackson (RJJ), and the music is by another familiar, Begg KMJ. And there are just a couple of examples of how the software houses take notice.

The move to animation was launched by

one of the most exciting films ever loaded into Compunet, Bob Stevenson's "Max Headroom", which sent everyone scrambling for their disassemblers to find out how he'd done it!

Graphics aren't the only area where Compunet is of help — wandering around "The Jungle" one is constantly coming across software hints and tips.

When the Compunet literature refers to the system as User Friendly, few people realize that they are also referring to the other users! I for one have learned more about my 64 and its capabilities since I joined Compunet six months ago, than I did in the previous two years — and I don't expect to stop learning now.

Alan Lenton (AL2)



# PHICS CHALLENGE



## SIX MS2000 MOUSE PACKAGES TO BE WON

COMPUTER ARTISTS can now get the chance to show off their works both in Commodore Windows and on Compuserve. To encourage you to do your best, we're offering SIX prizes of Windows Home MS2000 Mouse packages to the winners of our great competition.

The MS2000 is a high-quality mouse using optical encoding techniques to measure movements to a resolution of 200 points to the inch. It has a non-slip rubber coated ball and two positive-action click switches.

Even more impressive than the hardware is the Mouse's graphics software. Supplied on cassette, the low-driven routines enable you to use freehand drawing, lines, rubber banding, circles, ellipses, boxes, fill, a wide palette of colors, textures and brush shapes, zoom, copy, mirror, pan, and many other drawing features. You can also print out your efforts on the MPS printers. At \$69.95, the MS2000 mouse is the best way for computer artists to get great results from their machines.

The Commodore Magazine/Computer competition is organized in three sections:

- ANIMATION — the most challenging section, in which you must create a moving display of bit- or low-res graphics.
- HI-RES — pictures like the Computer examples shown here, using the computer's hi-res screen resolution.
- LOW-RES — pictures created using the CBM graphic character set.

There will be two Mouse winners, plus runner-up prizes, in each section.

You can enter the competition in two ways:

- ONE — if you are a Computer subscriber, look out for competition details on the network, and upload your picture into the competition page.
- TWO — if you do not subscribe to



Computer, you can send in your pictures to Commodore Electronics, 11/13 Zank Newport Street, London WC2N 3PP, on cassette or disk.

In creating your pictures, you may use your own programming routines, or commercial software such as *Keith Paul Designer's Profill, Easodis*, and so on. Make sure that any macros using commercial software are accompanied by details of the software and/or hardware used, to enable us to reproduce your pictures.

The competition will be judged by a panel including representatives from *American Computer*, and independent programmers.

All entries should be accompanied by your name, address, telephone number if possible, and details of software used to create the picture if relevant.

You can use any Commodore machine;

66, 128, C16, Plus/4 or Vtc 20, to create your pictures. Any winners using non-64 compatible machines will be awarded a prize of equal value to the MS2000 Mouse. In addition, ALL WINNERS and runners-up will have their photos published in the magazine and displayed on Compuserve.

The closing date for entries is January 15th 1986.

The theme of your picture is entirely up to you: film and TV characters, still life, abstracts — whatever takes your fancy. The judges will be looking for a combination of artistic skill, originality, and programming expertise if relevant.

Don't be discouraged from entering by the quality of the examples shown here — remember, the judges will be looking for originality and style as much as technical skill. May the best artists win! □

**BORED WITH SHOOT 'EM UP SPACE INVADERS?**

**then it's time to**

# VENTURE INTO THE UNKNOWN...

Enter the world of computer adventure. Each adventure takes control unto the player, providing hours of information and intrigue. You must use your imagination and logic to unlock the mysteries of each adventure. Plus, there are excellent illustrations. Some adventure packages even feature beautiful color computer-generated images which lead you in every direction. You'll need to master go-along art, dialogue, and pronunciation for each. Some adventures will give a bonus: your imagination and ingenuity.

## THE WIZARD AND THE PRINCESS

Become the hero and slay the adventure who rescues the fair princess from the dreadful wizard. First, he has taken her to his towering castle beyond the great mountains. He must defeat and outmaneuver the mystical power of the wizard who has given him an object through time. Begin your adventure in the village of Senna, but beware, everything is not what it appears.

## ULYSSES AND THE GOLDEN FLEECE

Protected by the gods, the Golden Fleece, legendary treasure of ancient mythology, has been hidden for centuries for many decades. Many valiant men have attempted to recover it, but none have been successful in penetrating for any length of time.

As Ulysses you are assigned the task of retrieving the Golden Fleece and return to the king. You will sail from Aeolis (Crete) and on your voyage encounter many of the famous and treacherous adventures, the wretched Sirens, the enchanted Cyclops, and the mythical god of the under world and other deadly enemies. Legend recalls Ulysses as the most daring and skilled seaman of all time.

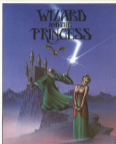
Ulysses' pocketed legs and chainmail. It's up to you to prove it.



## MISSION ASTEROID

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It's your duty to fly to the asteroid and attempt to alter its course. But time is of the essence! You must travel quickly and carefully on your perilous, hazardous voyage around the sun. You have a predetermined time in which to arrive. Your objective: Be quick and careful. Be the hero of the earth's inner hands alone!



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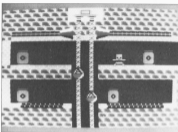
# TOPPER *the* COPPER

*Fifty copies of this fast-moving arcade adventure to be won in our easy-to-enter English Software competition*



**TOPPER THE COPPER** is an arcade game for the M4 which also requires you to exercise your powers of deduction. Featuring a unique new hero, Topper the detective, it's set in Mad Marvin's mysterious caverns.

Your job is to guide Topper through the caverns, searching out the vital clues which will lead him to one of the seven safes. The clues are hidden in certain safes — but which ones? Topper must check each safe in



to open for the clues, and there are dozens of dangers and hordes of horrors trying to stop him. Once he's found them all, bouncing through the caverns, riding on the elevator and avoiding the fumes, he has to find a secret key before proceeding to the Cloakroom and meeting the police man!

Now fifty lucky winners can have the chance to help Topper catch the villain absolutely free. English Software is offering the game, normally £8.95, in our easy-to-enter competition.

All you have to do is write an amazing and

original caption for our picture of another famous detective — Lord Raffles playing the legendary Sherlock Holmes. The best fifty will win the prize.

Put your caption with your name and address on a POSTCARD, or the back of a sealed envelope, and post to: Topper Competition, Commodore Horizons, 12/13 Little Newport Street, London WC2E 8PP, to arrive by the last working day of December. Winners will be announced in the February issue. All normal competition rules apply.



## Previous winners

**TWENTY READERS** will receive copies of the exciting motorcycle racing game *Speed King*, plus colour posters, for correctly answering the questions in our October Digital Imagination contest. The winners are: M Bull, Sutton Coldfield; A Elgar, Rugby; A Cartwright, Hill; A Montague, Mitham; G J Fyfe, Westcely; G J Johnson, Fallowfield; C Stone, Rainham; S Jervis, Southampton; P Riches, Otham; G A Ferris, Colgate; A Eustace, Wetherby; S M Williams, Ears Barton; B M Mason, Stockport; C Tams, Naveson; D Macdon, Dingwall; A Wells, Crawley; J Oakley, North Shields; S Miles, Haslemere; D Woods, St Helens; R Young, Houghton Regis.

The twenty winners of US Gold's *Newman Games Two* are: (Type version) R Perry, North-Hays; D Laidler, Gosport; H Holmes, Carlisle; M Grant, Newcastle; C Lee, Shilton; B T Goodwin, Hove; B Sanders, Buxton; G Sheehan, Glasgow; H D McWilliam, Devizes; J Hall, Woodford Green; C A Smith, Dorkingbury; A Eustace, Wetherby; Mark Stone, Rainham; A Wells, Northgate; Cliveby; Disk version) D Macdon, Dingwall; G Christie, Paisley; S McCarty, Newark; S Wood, Wymondour; M J Davies, Edinburgh; H J Meehan, Leighton Buzzard.

Winners of *Atari's Yoko Masters* are: G A Evans, Colgate; S Roche, Pease; A Russell, Kettering; S McCarty, Newark; P Taves, Whitley Bay.





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- **ADVANCED CENTRONICS INTERFACE** - compatible with all the well known low-cost printers and Commodore printer programs. Prints all the Commodore graphics and control codes (important for listings).

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- **240 EXTRA BARS FOR BASIC PROGRAMS AVAILABLE**. Two new commands "Memory read", "Memory set bit". They allow 192 extra bits with no performance speed reduction in the 64K limit of the CBM 64. Can be used with strings and variables.

- **BASIC 4.0 COMMANDS** - see Direct, Drive, Dappent, Catalog, etc.

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ATARI 128

# TALES OF MYSTERY AND SUSPENSE...

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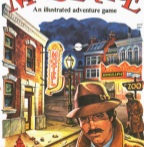
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