

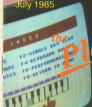
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HORIZONS

July 1985



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software
to win



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Commodore
UK boss
Nick Bessey



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GAMES

Soft Hits

64, C16 and V16 30 games played

Video Star

Entertained — the new arcade adventure from Ultimate



Tower of Adventure

Ken Matthews takes over as resident hero

CREATIVE

Music madness

Playing with CBM, learn with Chalkboard

Graphics aids

Telebase and Post 64 on the screen

HARDWARE

Little Brother

Read the review then win the prize!

Magic Mouse

More of a pet than a post



Sweet talker

The latest 64 color synthesizer

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UTILITIES

Mind your language

After Basic — LOGO, PASCAL, COMAL...7

Office aids

Superprint, Wizarwrite and Mini Office

PROGRAMMING

Checksum

A handy routine for 64 programmers

Software File

Readers' ratings for the 64 and C16

REGULARS

Letter

Respects and brickbats from you to us

News desk

Separate's coming; more news at CBM UK

Profile

Commander's Mail: Bessy



Imprint

Latest volumes to topple off the bookshelf

Answer Back

Technical confabulary with Jack Cohen

Competition

Win Activision games and music software

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Editorial

THE RECENTLY-ANNOUNCED clearance licensing deals involving Spectrum, the Disney franchise, and the Muggles should give the software industry a much-needed shot in the arm next Christmas. Although the only companies to benefit directly will be those with the financial clout to arrange such deals, the reality of the market should be boosted if the games are of the quality we've been promised.

Last Christmas micro-based companies were disappointed by sales, having expected a tremendous response — but what did they really have to offer? Not Christmas, we can look forward to bigger, better machines and bigger, better software. Already, the forward-looking magazines, software houses and hardware distributors are planning for a revival in the flagging industry. We're doing our bit with our October computer show — of which, more on the next page — and let's hope that everyone else involved in the industry will encourage the production of imaginative, affordable software, quality machines and original ideas in the next few months.

Next Month

Graphics extra

Hardware and software round-up

Seiko terminal

Computer power on your wall

Plus

Dental centres, features and more

EDITOR Christopher Jordan **PRODUCTION EDITOR** Barbara Hoyle **EDITORIAL SECRETARY** Cavelline Smyth **CUSTOMER SERVICE MANAGER** David Laker **ADVERTISING MANAGER** Simon Langston **ADVERTISING EXECUTIVE** Simon Laffoon **MANAGING EDITOR** Rowena Gore **PUBLISHING DIRECTOR** Duncan Scott **TELEPHONE CALL CENTRE** 01-407-4345 **UK ADDRESS** Commodore Horizons, 12/13 Little Newport Street, London WC2H 7PP **US ADDRESS** Commodore Horizons, c/o Business Press Inc, 281 First 42nd Street, New York, NY 10017 **US DESCRIPTIONS** UK £10.00 for 12 issues, overseas surface (including US and Canada) \$36.00 for 12 issues. US and Canada airtel \$33.91 for 12 issues. **Commodore Horizons** is published monthly by Best Press Ltd, 22-41 Dallingway Street, London EC1. Printed by Riverside Press Ltd, Thames Way, Whitehall, Kent. Distributed by TM (the Times), 36-17 Tisbury Gardens, London SW5, telephone 01-274 8111, telex 20343. ISSN 0255-4146. Registered at the post office as a newspaper. ©Stanley Books 1985

ABC

SUBMITTING ARTICLES Commodore Horizons invites readers' contributions, either program listings or articles. Articles should be typed, double spaced with a wide margin. When possible programs should be submitted on cassette or disk with a printout on plain white paper. Please keep a copy of your submission — do not send your only copy. Please enclose an S.A.S. if you wish your submission to be retained. All submissions must be your own original work.

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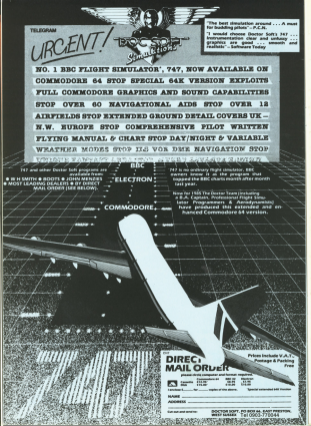
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Adventure plea

I REGULARLY subscribe to two magazines, yours and P.C.W., not just because I'm a fan of Geraldine Smith but because I find them both balanced, informative and wide ranging. However, P.C.W. has one advantage, it has an advertising helpline. Such a service offered in C.H. would be of great value as it not only helps advertisers on their travels but puts us CBM users in touch with each other. So how about it? Here's one to start with: **Parsons & Associates**, CBM 40: I've got helms, discs, winged shoes, think, how do I fly? **P. Dave** **Stratton** **C/o, Durham**



The C16 expanded

I AM VERY interested in writing computer games. I own a C16 but I am very disappointed about it's memory and graphics. I find the graphics unrecognisable — they just seem like a blur to me. Please could you off

me if I can get an expansion pack for the C16?

If not then I am thinking of buying a different computer; please could you also give me info as to which one I should buy, seeing what the graphics and memory are like.

Mark Sharrock
Bruce
MCI of Group House,
Felber's Lane, Newark
(0602-666966) and **Membership**
of Unit 9, Brook Trailing
Kings, Braintree, Essex,
Adheda (0252-33361), both
make expansion packs for
the C16. The machine's graphics
are as good as anything on
the market — a good
programming book would
help you to make the best of
them.

Praise for A&C

AS A RESULT of an advert in your magazine I purchased a "Dancillo" from A & C Software. To meet my own special requirements, modifications have been made on four different occasions, with new disks being sent through the post by return.

I cannot speak too highly of the way in which my requirements have been dealt with, and the patience and courtesy received. For the

modest purchase I have made from this firm I have received outstanding service.
B J Tingle
Chislehurst
Dorby

A reader restored

TODAY I collected the June edition of "Commodore Horizons" from my local paperstall. I would like to say that I think your magazine is great and that I have been taking your magazine for the past 18 months. However I was a little disappointed when I came to page 8 and saw a photograph of Anselm's Frank Branger, who I now enter this post.

The picture you published of Frank Branger was half of the photograph I had taken with him when I won a Commodore SX-64 earlier this year. You must have cut the photograph in two — am I lying on the editing room floor, or worse in the bin?

However jokingly on the cover of your magazine it says "Commodore Horizons has it all!" — maybe not this month for me.

However, thanks for a great magazine.

P.S. I called for nearly a whole minute then carried on

reading your great magazine.
Paul C16
Sharps
Edm

ROBERT FOR giving you the chop Paul — in fact you were kicked away in our filing cabinet along with Frank!



Helpful hints

HERE ARE some helpful POKEs and a SYS code that might prove useful on Commodore 64 systems:
P1441 400,128 key repeat,
P1441 775,200 double line,
P1441 775,465 enable line,
SYS 64778: reset computer, same as switching off/on.

Also, if when loading you get:

BREAK
READY
[no return]
then try this
POKE 808,120
BUM
Robert Eggs
Crendon
Surrey



Cartoon heroics

SUPERMAN, hero of comics and films, will soon be making an appearance on the Commodore 64 — and Walt Disney's characters Mickey

unusually detailed graphics. While final arrangements for



Superman are being made.

Mennell's first release will be **Bookend's Riot** (a sequel to *Bookend'ski*) and **Quake Miss One**, an arcade adventure by Mike Singleton, author of the Levels of Madness series.

Mines, Donald Duck and Plane won't be far behind.

Superman will appear on the Mennell/Timoleo label, by arrangement with US software house First Star. Mennell/Timoleo is a new venture from EMAP, owners of Beyond Software. First Star's *Spz Vc Spz* is already available on Beyond, and Mennell's will be licensed by Beyond's Clive Bailey and Bill Delaney.

The Superman game, which may feature other DC Comics characters such as *Supergirl* and *Supergirl*, will be produced by a system known as "authoring", which allows graphic designers to create

Mines, Donald Duck and Plane won't be far behind.

Forthcoming Disney films include *Return to Oz*, the follow-up to the classic film *Mirrors of Oz*, and *The Black Cauldron*. US Gold also has the rights to produce software

based on *The Jungle Book*.

The first three US titles which US Gold will distribute are **Mickey's Space Adventure**, **Wanted the Punk in Hundred Army Wood** and **Donald Duck's Phlegmonal**. The products, marketed in the US by Sierra On-Line, are educational adventure games aimed at the younger market, and will retail in the UK for £12.95 on disk, with cassette versions to follow.



US Gold's new **KIDSO** label will also be used to launch new programs based on *The Muppets*, *Kermit's Electronic Story Maker* and *The Great Escape* are licensed from Simon and Schuster, and both are word games for younger users.

Mastertronic munchies

AN UNUSUAL marketing tie-up between a software house and a snack food manufacturer has resulted in a new C128 64 game.

Chummy Collin by Mastertronic is based on a well-established KP Skips cartoon character. Collin has appeared in comics, on posters and in TV advertising. Twelve million packs of Skips will carry publicity for the game, and KP will be running an on-pack promotion offering a free model Chummy Collin Action Bike. Mastertronic's Martin Alder commented "Working with KP has given us access to the big multiples, and having the game published on the packs will help promote the Mastertronic game to potential purchasers."

The game will retail for £1.99, and will be available through the usual Mastertronic outlets.



including confectioners, tobacconists and newspapers as well as specialist software stores.

Basketball bounces back

COMMODORE'S long-running **International Basketball** is new in the shops. The game, by Andrew Spensley, is a sequel to his highly praised **International Soccer**. This time though the program is on tape.

perspective, with animated sprite graphics. There are three players on each team, and a wide range of options including one of two players, team colours, difficulty levels and game rules, either Olympic, NBA or NCAA.

Players use joystick controls, and change colour to indicate which one is in possession. They can dribble, shoot and pass, and leap to intercept stray passes. We'll be reviewing the game, which costs £1.99, in the next issue. Contact Commodore on 0126-281511.

Fairies dance

GRAPHICS Software has now released **Ellidon** for the 64. The game, which features a fairy heroine searching for seven

magic flowers, was written by John Marshall. *Ellidon* includes the music "Aria's Dance" by Greg, and includes keyboard and joystick options. Talk to the Fairies on 0167-51485.

Horizons on show

COMMODORE'S Sixth Computer Show at the London National on June 7th, 8th and 9th has been advertised as the "official launch" of the C128, although the machines will not be in the shops before August. Plans for the show include a press briefing to demonstrate the 128 and the Link expanding 960, along with a public viewing of the 128, new games software, and a number of celebrity appearances and contests. We'll be bringing you a full show report in the next issue.

Mirrorship plans are going ahead for the Commodore Horizons Show in October. At

the same venue, the Hamworthy National, the Commodore Horizons Show will be held on the Saturday 26th and Sunday 27th of October, and will cater for users of the 64, Vc 26, C16, Plus/4, 128, and the business machines. The show will feature exhibitions from major software houses, as well as hardware manufacturers, dealers and user groups.

Potential exhibitors should contact Tim Collins of Computer Marketplace on 01-958 1612. There'll be more details forthcoming in future issues of Commodore Horizons.



Like International Soccer, Basketball is presented in 3-D

Creative sparklers

ANOTHER mega-corporation is going into the budget software market. Following hot on the heels of British Telecom's Firebird, Thorn-EMI's Sparklers range is now in the shops.



The publishers of successes like Madtech and Danger Mouse will be offering a range of games at £2.95, including titles for the Vic and 64.

Techmaster for the 64 is a seven-screen animated adventure, in which a heroic prince must fight off combs, vampires, barbarians, demons and dragons and other deadly monsters to win the hand of a beautiful princess. **Chopper**, again for the 64, pits you against enemy fighters, bombers, balloons and helicopters in your bid to destroy a heavily defended enemy base.

Fourth Dimension, for the Vic with 8K expansion, is a four-screen invaders-type game in which you must destroy progressively more hostile waves of attackers. Forthcoming titles for the 64 include **Mirilla** and **Kayak**, and there may be more Vic titles later on. Talk to Thorn-EMI on 0272-543352.

Racing cockroach

THE BZARBELLY-NAMED Cockroach Software has come up with a utility designed to improve the insect-like speed of the 3.5" disk drive.

Turbo 64 was developed in Australia, and allows you to produce versions of your disk software with fast-loading built in. Claimed speed improvements can be up to a factor of five, with Easy Script for instant loading in less seconds, and the package comes with a number of labels which allow you to identify your Turbo-treated disks.

Commodore appoints marketing chief

PAUL WELCH, Commodore UK Sales Manager for the last three years, has been promoted to the newly created position of UK Manager, Marketing and Consumer Sales.

Welch's responsibilities will cover hardware and software on both the home and business fronts.

The appointment is part of a drive for "far closer coordination of Commodore's marketing and sales activity" in the words of new General Manager Neil Aroney. "Already

an experienced senior manager with widespread contacts throughout the trade, Paul Welch is the ideal choice to bring about the level of sales and marketing synergy required."

As part of the reorganisation several other new appointments have been made, including a national accounts controller, software accounts manager and national accounts manager. There have also been more departures — following in the wake of Marketing Manager David Goward, the latest Commodore employee to leave is Ron Patten, formerly Software Products Marketing manager. A Commodore spokesman commented: "I believe he's gone to another software company — for there was, as they say, no alternative involved in his departure."



Automatic Arabic

JCL SOFTWARE has produced two new products for Arabic users of the 64 and 128. The ZAN 64 cartridge converts the 64 into a full Arabic / English bilingual system. Basic programs can be entered in either language, and converted at the touch of a key. Provision has been made for printer in either language, and the two languages can be com-

bined in one program if required.

JCL's other product is an Arabic wordprocessor, which features full context analysis, automatically displaying the correct shape for each character when it occurs at the start or end of a word, as well as controlling the cursor in right-to-left mode. **Chaper** is possible via a CBM 101 or MPS 801/2 printer, although Epson types are also supported.

CTM versions are under development, and a bilingual database system is on the way too.



For details of price and availability, contact JCL Software at 1 Sheffield Road, Southborough, Tunbridge Wells, Kent, 0852-21954.

Anirog takes off

ANIROG's latest game is **Jump Jet**, which will be available in versions for the 64, extended Vic and C16.

Jump Jet is a complex Harrier flight simulator incorporating a number of options including hovering and landing practice, radar and target-finder interception and air-to-air combat with enemy aircraft.

Author Vaughan Dow, a Harrier pilot himself, is the author of **Flight Path 117** for Anirog, and spent a year developing **Jump Jet**. The 64 version of the game will cost £9.95, and the disk version £11.95. The game incorporates software speech created using Anirog's Voice Master hardware.



More details on the Vic and C16 versions will be released soon. For more details contact Anirog, Unit 30, Victoria Industrial Park, Victoria Road, Daresford, Kent, 0222-92311.

Tymac connects up CBM

TYMAC UK, producer of the "Talker" software series, is now moving into the hardware market. The US parent company, Tymac Controls Corporation, has produced an intelligent printer interface for the 64, Vic 20, C16 and Plus/1. The Connection is a parallel device which plugs into the serial socket, and translates Commodore ASCII information into conventional form.

For more details contact Tymac UK, Unit 78 Standard Way, Gravelly Industrial Park, Telford Road, Birmingham, 021-627-6617.

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- COMMODORE 64 -

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(Commodore Computing International, June 1985).

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(Gold Medal Award, Zap! 64, May 1985).



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BMX-cellent

Mastertronic's contribution to the CBW-software market is a combination of one of their earliest and most popular games. Despite its simplicity it's still selling well in its other versions, and at the road £199 is extraordinary value for money.

There are five colourful BMX courses, each from

above, through which you have to steer your bike. There are hazardous obstacles to avoid including crash barriers, oil slicks and fences, and you must pick up marker flags as the track scrolls past. Missing any of the flag marks that you'll crash at the end of the course.

Just to make life more difficult there's an energy monitor at the top of the screen, and if you run out of

energy before completing the course you'll crash again. Energy pools along the way



offers the chance to top up on "fuel", so if you can't manage higher speeds you still have a

chance to get through if you're skilled enough. Keyboard and joystick control and an awesome list of insect artwork complete this fun package from the unduplicated kings of the software supermarket.

Program: BMX Racer, CIB
Supplier: Mastertronic
Price: £199
Graphics: ★★★★★
Sound: ★★★★★
Control: ★★★★★

Superstar

Nervous? Here it is: software — Roland's Rat Race. Featuring the superstar actor himself, plus of course his friends Enoch the hamster and Drake the aardvark, or whatever they're called.

This is unexpectedly good, largely due to a wonderful sense of humour rather than any originality in the game. Roland has to get to the TV studios before five, travelling through the sewers and tunnels beneath London. Roland's armed with a glue gun which makes the most disgustingly realistic squeaking noise, and is



his only protection against hordes of badgies including vicious yellow wallabies and

slugs. The maze of pipes and tunnels is peppered with

good detail and colour, and the little Roland is instantly recognizable. In the usual world of arcade adventures, there are players of a key you find in order to open the case door; and various tricks to learn like the method of catching the underground trolleycar without getting squashed.

Remarkably good music and sound effects, and a fine game for the kiddies since nobody gets hurt (except, God I fear,

Program: Roland's Rat Race, CIB
Supplier: Caves
Price: £7.95
Graphics: ★★★★★
Sound: ★★★★★
Control: ★★★★★

In the pits again

This is a follow-up to Miner 2049er, a big success in its day and one of the first ladder-and-pit-former efforts to come from the States.

As usual, this US Gold version displays a great deal of programming skill, and is good fun to play, but in the case of this game there's not much in the way of originality on offer.

There are twenty-five screens to complete, each one of which contains a selection of bobbie disappearing mines.

Each cavern contains a piece of equipment which can aid Beauty Bob in his quest — for instance, in the first a laser gun lets him squish the baddies when he picks it up, and a transporter helps him to get to the higher levels of the cavern. In the second a utility beam allows him to roam across the cavern safely while planning strategy.

Other features include gravity lifts, pulverizers,

reaction tubes, cannons, acid rain and energy food bars. In other words, it's a cross



between Miner 2049er, Pacman and Pacno, though with good sounds and music. The graphics are nice, the joystick feature which enables you to control

Bob's jumps is clever, and there's nice use of colour.

You can't blame US Gold for sucking in on the success of the American games, but I think they might be a bit more selective: can the world take another ladder, another pit-former, or another alien mutant?

Program: Beauty Bob Series Back, CIB
Supplier: US Gold
Price: \$9.95
Graphics: ★★★★★
Sound: ★★★★★
Control: ★★★★★

Cutesey

I thought that every game was on the way out, but Grubby's Day Out features not only a remarkably cute hero, Grubby Grubby — I ask you! Grubby Grubby! — but also a little booklet full of fascinating details on the lives of the Grubbites, Toppies and Strangies of the planet Blaggy.

In fact it's not as poky as it sounds, since there's a really good game with some excellent



programming lurking under the super cuteness.

Grubby is a bouncing

meepop who's task is to herd the innumerable grubbies into the safety of caves, protected from the Strangers, Toppies and the mad Scow. The joystick allows you to control Grubby's flight around a mysterious landscape of flying islands and caverns. A net of Psi power must be avoided or deactivated for Grubby to move around safely, and the little devil blows balloons at any alien life-form foolish enough to get in his way.

The little details, such as Grubby's facial expression, the imaginative character set, and the unusual sound effects, combine to give Grubby's Day Out a refreshing originality. More of the same, please, Blaggy.

Program: Grubby's Day Out, CIB
Supplier: Harems Consultants
Price: £7.95
Graphics: ★★★★★
Sound: ★★★★★
Control: ★★★★★

Helicopter

Another cheap-and-cheerful effort from Mastertronic, this time a shoot-'em-up of frightening proportions.

Skynet starts prominently with a loading screen which qualifies as the best I've ever seen, showing the apocalyptic combat helicopter in flight. The game itself starts off slowly, but rapidly becomes a real joystick-ringer if you play on the higher difficulty levels. Your mission, should you

choose to accept it, is to transport supplies from one side of the landscape (which is about five screens across) to



your base. To do this you must guide your chopper through hails of fire from enemy tanks and boats, while watching out for submarines you can depth-

charge. On finding a supply pod you must land, pick it up and return, dropping it on the supply zone. This leads to your radar bases being assembled piece by piece, and once they're finished you move on to a more complicated screen with more enemies.

There are nine levels of difficulty, joystick or key options, good sound effects and excellent music scoring explosions. Absolutely no safety whatsoever, I'm glad to say — a sort of Defender variant in which the tanks, boats, saucers and fighters

come thick and fast, and you just have to shoot the hell out of them.

Nothing's been overlooked here — there's even a fast loader, a little history that you don't expect when you pay £1.99, and screen shots on the screen so you know exactly what you're getting. Snag it up.

Program: Skynet, 64
Supplier: Mastertronic

Price: £1.99

Graphics: ★★★★★

Sound: ★★★★★

Gameplay: ★★★★★

Grandiose hotel

This follows-up the concept to the under-rated Zoo Sale Min to another "matrix" arcade adventure. The characters are depicted in a window at the top of the screen, and the hero's movement is controlled by a joystick. Commands of the main land — get, drop, use, inventory, look, and so on — are entered with the keyboard,

and the computer responds appropriately.

The hero is an intrepid spy who must recover stolen documents from the Grand Hotel before escaping by helicopter at midnight. The graphics aren't as three-dimensional as Melbourne House makes out — not compared with Ultimate's Commodore games, for instance — but they are quite colorful and clear. The program recognizes only 28 words, so there's a good deal of "You can't do that" floating

around. Still, the format of the game is promising and I'd be surprised if it didn't become more popular as time goes on.



since it combines the puzzle elements of adventures with the movement of arcade games. It's a pity that the

program isn't written with more care — the room descriptions are very simple, and apart from the excellent music (sounds like Keith Emerson attempting "Peter Gunn" after a night on the floor) there are a lot of ways in which Grand Larceny could have been made altogether more grand.

Program: Grand Larceny, 64
Supplier: Melbourne House

Price: £7.99

Graphics: ★★★★★

Sound: ★★★★★

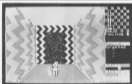
Gameplay: ★★★★★

Heavy, man

Games of Dawn is the last — an arcade adventure set in the lands of dream, featuring a bold traveller facing the perils of the subconscious.

Each of the 64 screens is a room, and the route you follow is shown on a chess-board map. Your armoured knight must use his sword to fight evil bats and dragons, but can only fly from some of the rooms.

As with most text adventures, there are useful editors which can be picked up and added to your inventory,



then recalled and used at the appropriate time. There's also a life force indicator, current

score readout, compass and randomized maps.

What's most interesting is

the design of the rooms — not particularly high-resolution, but some quite weird Escher-like scenes which can leave you feeling quite peculiar.

A good effort, and a real sign, if more proof were needed, that Virgin has entered into one of the most interesting software houses relying on their own efforts rather than on bought-in imports.

Program: Games of Dawn, 64
Supplier: Virgin

Price: £7.99

Graphics: ★★★★★

Sound: ★★★★★

Gameplay: ★★★★★

Eight in one

Cave Fighter is a conventional ladder-platformer's effort, in which there are eight levels with six caves in each. Each level is loaded into the computer after the last has been completed, so in effect you're getting eight Vic games for the price of one. It's certainly an ingenious solution



to the problem of the unexpanded machine's limited memory.

avoid going off platformer games which you must avoid. You are armed with a laser gun, but this doesn't kill them, it just causes them to reappear in another part of the cavern. You automatically fire in the direction the joystick is pointing, and the height of your jump is controlled by the length of time you keep the fire button pressed down.

Your only aim is to escape from the caverns before you

energy runs out, so there's not much variety to it. But Cave Fighter should keep a few Vic owners satisfied, and reassure them that some software houses at least will respond to the demand for new games.

Program: Cave Fighter, Vic 20
Supplier: Bubble Bus

Price: £5.99

Graphics: ★★★★★

Sound: ★★★★★

Gameplay: ★★★★★

SOFT HITS

Scramble, scramble

Flight simulators are a popular field, and to make a success of any new effort requires some sort of originality. Microsoft's idea is to use the famous wartime Spitfire fighter as the subject of the simulation.

The cockpit simulation is incredibly detailed, with the full range of controls, virtu-

ously animated. The map screen is also good, and you use this to track down and intercept enemy fighters. Remember, no radar! The actual pilot's view is a disappointing one, with jerky animation of the horizon and very poor detail on the enemy planes as they appear in your rear-view mirror or across towards you.

The actual combat sequences are quite good, with loops, rolls, spins and dives all possible. The sound of enemy

jets breaking into your footage is quite un-serving, and an actual jet noise over-



weighting bit is trying to lead — inevitably you'll crash the first few times, putting an end

to your glorious career as a fighter ace.

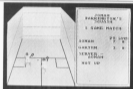
Full save options and a completion compile the package, which offers probably the best chance you'll get of becoming a Group Captain. VC, DDF, DFC, in the safety of your own living-room.

Program: Spitfire 40, 60
Supplier: Microsoft
Price: £12.95 disc, £14.95 disk
Graphics: *****
Sound: *****
Gameplay: *****

Urgffff!

All apart from freeze-framing AI thought all the possible whimsical sports, from underwater hang-gliding to football, had been converted into computer games. Of course I'd forgotten the big game, Squash. Don New Generation hadn't. This version is very good, with the two players for one versus the computer represented by International Soccer-like sprites wearing around a realistic squash court.

The program automatically selects forehand or backhand shots for you when hitting the ball, so all you have to worry about is the timing. The ball is



very smoothly animated and makes a pleasant CHUNE when it hits the wall, or a PING if it hits the "tin", signifying a foul shot.

For those of you unfamiliar with the game, the manual

gives a good explanation of the intricacies of hitting balls against walls.

There's a selection of difficulty levels and user-definable keys, plus an excellent attempt at speech

synthesis called ReproSound, which allow the famous Jonah Barrington to announce the scores. On the preview copy, the first time round the voice worked fine, but on subsequent games it had slowed to half speed, as if poor Jonah had ruptured himself, and came out more like "waaaaaa hrrrrrr" than "one love".

PS — someone should tell NewGen that "yellow" is spelt with two Y's, not three. But who am I to carp at mere details. A goodie, and worth looking out for.

Program: Jonah Barrington's Squash, 60
Supplier: New Generation
Price: £7.95
Graphics: *****
Sound: *****
Gameplay: *****

ET go home

This one's an excellent idea, and could have been a great game if the graphics had been a little more distinguished.

Blogger, hero of Allplan's two notable games, is off to Hollywood to steal the only copy of Steven Spielberg's latest thriller (you can estimate

from this the level of humor involved).

The film studios are represented in a 3-D perspective view similar to that of Air Attack or Action of Impossibility, but with very little detail. As Blogger moves around the swarming screens, he has to avoid energy barriers and various film stars, while looking for the objects that will help him to defeat them.

There are 12 film sets to explore, before Blogger —

back his way in the 13th room where the film is kept.

Blogger Goes To Hollywood



is OK but really no more — it's a good idea which hasn't been sufficiently thought through.

Mind you, as a bonus the package includes an order form which enables you to send off for a free Blogger T-shirt and badge, so even if you aren't that taken with the game you'll have something for your money.

Program: Blogger Goes To Hollywood, 64
Supplier: Allplan
Price: £9.95
Graphics: *****
Sound: *****
Gameplay: *****

Aardvark

Once again we venture into the haunted realm of Thurg, searching for the severed parts of Spoth, protected from the mouse Woodbeak only by the embowered Vord monks of Gropo. You folks, it's arcade adventure time again.

Ardvark's effort features small spindly figures rather than the large detailed efforts



of Allplan, but the overall effect is to give a much better illusion of size to the 3-D per-

spective backgrounds.

There are 13 dungeons to go through, with 129 different rooms, and hazards as diverse as zombies, spiders, ghosts, and little sound things.

Each dungeon presents a different challenge as you negotiate the mazes, towers, platforms and corridors, and the names are good fun in themselves — for instance The Eternal Plains, The Pits of California, and The Skyline

Crypts, which sounds like Sutherland Flowers on a wet Wednesday.

Rather good fun to start with, but the excitement might not linger.

Program: Realm of Impossibility, 64
Supplier: Aristonsoft
Price: £9.95 disc, £14.95 disk
Graphics: *****
Sound: *****
Gameplay: *****

Sir Arthur Penstemon (SAP) to his friends was one of those men who could never resist a good story and a bit of excitement; so when somebody told him about the legend of Osiris, he was unable to contain his enthusiasm and set off immediately to see what he could discover.

That's how he came to be in a chamber deep in the bowels of the earth. The walls were covered in hieroglyphics. He moved to take a closer look and saw if he could make some sense of the ancient drawings. As he did so, the flagstones beneath his feet seemed to give a little and two huge statues slid across the only apparent exit, blocking it completely. He remembered something in the legend about living the eye of Osiris guide your way. He searched the room and soon noticed something in the corner that looked hopeful. Sure enough, halfway up the wall was an eye. "If this is a clue to the exit I'd better jump to it and find the answer before I use up all the air in here."

For an experienced adventurer like Sir A., the secrets of the way out didn't seem very hard to find, and he soon had the statues sliding back to their previous positions either side of the now open

walls of very beautiful Egyptian hieroglyphs. "There's only one way to make the right choice", he thought, "do what I always do on these occasions... toss a coin". He did so and set off in search of the way out. Sir Arthur was rather perturbed by the fact that he had nothing to ward off the multitude of scorpions, mosquitoes and Guardian Spirits that delighted in attacking him at every opportunity, and he hoped he would find something along the way that would help keep the beasts at bay.

A doorway appeared. He entered, and almost at once had to jump over a couple of boulders that were washing down the stairs towards him. There was a chest at the back of the room alongside another eye symbol. "I hope this is going to be worth all the trouble", he thought as he made a dash for the chest avoiding more rocks as he ran. "Now that's more like it", he said to himself (there was no-one else to say it to!), removing the whip from it's hiding place, "someone must have known I was coming". He left the chamber as quickly as he could, glad that he had found a weapon in the way of which he was expert, but also feeling a little weak from the bites and stings of the



ENTOMBED

Descend into the Stygian depths of the Egyptian catacombs in *Ultimate's* latest puzzle. Chris Wilcombe acts as torch-bearer...

airway. "I'm glad to be out of there", he thought. Little knowing what lay in store for him just around the corner. He moved to throw a last glance at the room he had left. It wasn't there! "Let's hope I don't need to go back that way" he mused.

Chris here was unable to decide which way to go along the corridor. Both directions looked alike, just long passages lined by

cooey-crawlers that parolled the corridors.

He came across a recess in the wall and went over to have a closer look. SAP had hoped that he might find a secret passage, but it was not to be. Just then, he noticed a large black bird flying along in his direction carrying something in one of its claws — a sacred Kalkh rattleman. As the bird passed by his head and made a grab for it, it disappeared! Strangely, he felt a new lease of life seep through his body, so he decided to continue on down the corridor in search of a way out.

After making into a few dead-ends (more than a few actually) he came across another doorway. He went in. No boulders

this time, only an obelisk, a statue and the most enormous beetle you could imagine guarding the exit on the far side of the chamber. It didn't look at all friendly but, on the other hand, at least it did not seem to want to chase you here away. Sir Arthur studied the room carefully. There were the usual markings on all the walls and on the obelisk and there was a shelf high upon one wall that had something perched on it. He tried to dislodge whatever it was, but it stubbornly refused to leave its resting place.

He leapt over the beetle, pulling itself in a small step on the way, and found himself in a corridor (quite short) with the same beautifully painted designs on the walls,



Use the magic whip against the cooey-crawlers



Answer to the mystery



GAME: Entombed
MICRO: CBM 64
PRICE: £9.95
SUPPLIER: Ultimate

but this time in different colours. In situations such as these it's difficult to know which way to go or be left the choice, as usual, to the toss of a coin. SAP, as usual, set off in the opposite direction hoping it at he had made the right choice. Another door, another room. He walked towards the far side where he had noticed a familiar sight, but almost immediately found himself transported back to the doorway by a Guardian Spirit who seemed to appear from and disappear into one of the Sarcophagi. Fortunately, the roomy-like creature seemed none too bright and our hero, always one for being in the right place at the right time, was once able to roam freely about without any more spiritual intervention. It didn't do him any good though, as he discovered nothing new which, quite frankly, surprised him not a little. He returned to the corridor feeling drained after his exertions and wishing that the energy bandier would leave him alone for a while... but they didn't. He passed on, putting his feet first forward and was soon rewarded with another opening.

"Things can only get better", he thought, "... or worse", as he stepped inside to be confronted by the one thing he really hated... snakes. They weren't afraid of him or his whip though, and he soon felt their anger at his intrusion. Despite his fear, SAP rose to the occasion and made a dash for the centre of the chamber where a small chest was resting under the watchful eye of the slithering guardians. Inside was a



Avoid the serpents to gain the edge

clue to the location of the magic torch, which didn't seem to make much sense at the time, but "perhaps it will later", he thought.

He began to get a picture of the layout of the labyrinth fixed in his mind and so was soon able to find the only passage that the bit cart he hadn't yet been along. He was right, and went forward to discover another chamber of statues, the same wall paintings and an exit on the far side. There was, of course, something blocking the way. In one corner of the room he eye could see an object that required closer inspection. He was unable to make out what it was. He couldn't open it, although it seemed to have some sort of catch on it; nor could he move it, despite trying all kinds of incantary that he had learned was often necessary in these circumstances. "Perhaps I could play a ruse on it", he mused, remembering the middle

in the snake pit. He decided on the thought of having to go into the "vipera den" again, but go there by moon, and everywhere that he had been for that matter. Sir Arthur felt sure that the way out was from this room, just as he was sure that, should he get out, there would be many more dangers in store for him before he finally saw the light of day once more. But he also knew that he has missed something along the way. The Guardian Spirits kept away from the alcoves... were they afraid of something? And what was that on the shelf?

If only the statues could talk! One intruder here grinded his teeth, went back to square one and prepared to do battle, yet again, with all the caution that had dogged his path right from the very start.

"Ah ha!", he exclaimed, "now if I....." ■



The guardians of the portal



The deadly serpent awaits



Prayed in the snake pit with a magic torch to complete your journey

It's not heavy - it's a Brother

COMMODORE users are always finding that the choice of printers is difficult. The MPS-800 is slow, and short on facilities, and at £229 is too expensive for many users. Most of the other Commodore printers are either more expensive, or offer fewer facilities.

One alternative is to go for a non-Commodore unit such as an Epson, Fuji, or Star. The problem here is that the final print quality and the range of facilities provided — such as sheet feed, tone decoders, bidirectional printing and so on — are excellent, but the cost of the interface and possible operating difficulties have to be taken into account.

The Brother HL-5C is an attempt to overcome some of these problems, and to offer an affordable printer system without complex extra hardware or software. The HL-5C is directly compatible with the 64, Vic 20, C16 and Plus/4, having the same serial socket as that found on the MPS-800. For instance, it prints on special thermal paper, or on ordinary paper if you insert a ribbon cartridge.

The unit weighs 1.6 kg, and the dimensions are 26x17x6 cms. This means that the HL-5C will fit easily on any desk surface, and takes up about half the space of a conventional printer. Its operation is the printer is almost silent.

Power is supplied by four batteries or a 5V power adaptor. The special thermal paper used by the printer is supplied on a roll, which fits onto two feed arms assembled to project from the back of the device. Connect up, switch on, and you're ready to go.

The manual is very much like that of the MPS-800. There are eight DMP switches



which control the warning buzzer, line pitch and so on; and controls on the front for line feed and on-line/off-line selection. Everything else is software controlled, and is fully explained in the manual.

After a section on ASCII codes, the manual covers the use of files and peripheral controls. Secondary addresses are covered next, along with print and control modes which allow the use of reversed characters, double width characters and user defined characters. There are several useful example programs in the manual, and technical details on the interface connections and circuitry for those who are interested.

The head is nine pin, printing in an 8 by 1 matrix. Maximum print width is 80 columns on the A4 width roll or sheet paper, and normal print speed is 30 cps.

On the whole the HL-5C is a neat, portable, efficient machine with a good deal to recommend it.

Thermal paper printers are obviously not as good as printers using a ribbon cartridge, and the cartridges can only be used once (printing about 10,000 words) and are fairly expensive to replace. Obviously the machine isn't suitable for heavy-duty business work, but for normal program listing or simple correspondence it's an attractive alternative to bulkier, more expensive devices. ■

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The winners of the New Generation contest in the May issue are J R Winstanley, whose prize is a satisfying holiday at the Puffins Cove Activity Holiday Centre; and Henry Ratnesingh receiving

copies of *Shout the Rapids* or *Cliff Hanger* are T Whitehead, Tadworth; M Graham, Cuck; C L Wood, Wycombe; J Winbyll, Billingham; A Wood, Leeds; N White, Gt Yarmouth; D Gamble, Drighlington; J W Smith, Salford; M Griffiths, Rochford; A Newton, Ripon; P D Moore, Portsmouth; T Davies, Winstanley; E Watson, Ballingry; D J Roberts, Stranorlar; M McConnell, Dunsfermling; P G Lupton, Edinburgh; S J G Bryson, Birmingham; M Simon, Tadworth; D Perin, Bradford; E Mason, Hove.

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Meeting the mouse

John Coakane looks at SMC's Magic Mouse and finds himself converted to WIMP's — and getting some help with his sprites

SIX MONTHS ago I knew virtually nothing about mice. Sure I'd read the reviews of Apple mice and seen some of the fun as other manufacturers rushed to produce their own, along with some dubious sounding techniques for producing something called windows. So what? A mouse conceptually seemed to me to be nothing much more than a new fancy kind of joystick, the window software an interesting but rather useless way of cluttering up the screen. I was wrong and I now regard WIMPs (Windows, Icons, and Mouse Programs) in a completely different light.

A good mouse-based system is much easier to use than a conventional keyboard-only one. It seems that as humans are not as well adapted to the technological age as we sometimes assume, we still perform better when faced with pictures than when trying to interpret words. I suppose it's a little like the difference between looking at a map and reading a verbal description of a town centre, they both have their uses but the map tends to be much more useful if you are not to get lost.

Mouse systems are much like sophisticated menu-driven software. You start off with something simple and select items until you get exactly where you want to be. As you move the mouse the movement is detected by the computer and translated to the screen where a pointer (an arrow or sometimes a small hand) moves with the mouse. Move the mouse forwards on your desk and the pointer moves up on the screen. The mouse also has from one to three buttons on the front, just where your fingers naturally rest. Move the pointer on the screen to a picture of a floppy disc and press one of the buttons and the system will immediately list the contents of the disc.



This may sound trivial but it is one hell of a lot quicker than using the keyboard.

There is much more to a good mouse system of course, but you get the idea. Mice are quick and easy to use. The icon system, which provides those little pictures of discs or pocket calculators recognised by the system as components of a menu, makes life easy. You can process much more information on a screen of icons than trying to use words. Windows are used to produce rapid changes in the screen display, for example to give flip-down extensions to a particular icon entry on a screen menu. For example, select the calculator icon and a working image of a hand-held calculator will flip into screen to be removed again as soon as you get fed up with it.

Iconography

But let's get on with the review. The Magic Mouse is a package for the C64 which gives you not just the mouse itself and the vital software to run the thing with your own software but also an art package, a sprite designer, and an icon for user-defined graphics designer. Of these, I found the sprite and icon designers to be the most useful. It is normally a pain in the neck to try and set up sprites, especially with the multi-colour option there to confuse things. Sprite designing using a mouse is much more straightforward. A large screen image gives you your chosen pixel positions, which you can alter one by one, whilst a small side-screen shows the full-colour sprite as it would appear when used.

A high-resolution art package should be just what the doctor ordered for the C64. This one allows you to create 16 bit-mapped pictures which can be used in your own programs, or just displayed. Resolution is 160 x 200 pixels. Magic Mouse gives you most of the usual options, such as line thickness and type, colour, a fill routine, and so on, but these options are



held on a separate screen from the picture-screen. A screen dump option for Commodore and Centronics printers is included, and there are tape and disk save routines. The software gives you a full sixteen colours and uses some clever software to match the low-resolution colours used by the C64 to the high resolution picture that you are working on.

The mouse itself is rather large and I found it less comfortable to use than others. The three buttons though have a good positive feel, and the lead which plugs into joystick port two is nice and long, although I was unhappy trying to use the thing on my already cluttered desk!

SMC's Magic Mouse is the first such product for the 64, although there are others on the way including one from Commodore themselves. Use of the mouse itself and the way that the software works must be left to personal preference, so make sure that you have a go with any system you're interested in before you buy. ■

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Lingo bingo

Don't feel that your 64 is restricted to operating in Basic — it can learn new languages more easily than you can! *Tony Harrison-Smith brushes up on his* **COMAL, FORTH, ADA, LOGO and PASCAL**

MANY 64USERS, craving the drawbacks of Basic, would like to see a new language, but not quite a "low level" language such as machine code. In this article we'll look at alternatives like Ada, Forth, Logo, Pascal and Comal. Forth, Pascal, Ada and Comal are all compiled languages, which means that they convert the program which you write to a set of machine code; this allows the program to run a lot faster. The article can only give a brief preview of the languages, but it should be enough to show the advantages of each.



FORTH is the most unusual of the languages reviewed in this article. The language was developed by Charles Moore in the early 1960's, as a language for controlling radio telescopes.

The structure of Forth differs from all the others by not using line numbers, the program is built of individual "words" or procedures. The method of programming is the top-down method, where the low level words are first, and only perform one single task. Following on from these are the next level words, which combine several simple tasks to perform a more complicated one. The last "word" in the program will be the controller. This will bring together all the middle level words in the sequence required for the program. Using this method of programming means that Forth is a very

powerful language, as the programmer can tailor it to his requirements. A lot of video games have been written in Forth as it is a very fast language.

The program used for this review was the **C64 Forth+** by Melbourne House Publishers. This is a version of the standard Fig-Forth with added commands. This program, as with most packages, uses an ingenious system to increase the memory capacity of the Commodore 64. The main memory is held on disk with the computer calling in the information as required; this is called *Ram-Disk*. For tape users a section of memory is set aside to imitate a disk drive.

The most difficult art to master when starting with Forth is the art of using the stack and "reverse Polish notation". This means that to add two numbers, instead of entering 3+4 and expecting the answer 9 you have to enter 3 4 + with the operator being entered last. Once you have entered the numbers in the wrong way several times, you will get the hang of it!

All the standard features of these "improved" languages are included in this package including if then/until, loop/until, while/repeat etc. Graphics commands include the switching between multi colour, normal colour, inverted background colour, hi-res graphics and low-res graphics modes, all by single commands.

There is only a plot command for hi-res graphics, but you have to draw, circle, etc should be easy enough to write.

Sound commands are included to



set all the individual registers including control and resonance. The other additional commands read the joystick and paddle ports. Forth also has a built in assembler which uses all

the standard op codes.

With this package error messages are only given as a number, and the meaning of the error has to be looked up, at least until you recognise the usual ones. The manual is not a manual, only a reference manual, so I would suggest that if you buy this package, you buy a good "teach yourself" book on Forth. I found that Forth was more difficult to learn, as it uses different techniques to other languages, but it is very powerful and fast.

▲ ADA

Most computer users know that to make machine code programming easier you use an assembler. Imagine a language that would allow you to write your program in a high level format, for example Pascal or Basic, and then convert it to assembler for you. The language should then allow the machine code program to be loaded directly into memory, and be controlled by the existing Basic in the computer. There is such a program, it is called **Ada**, and the 64 implementation is published by First Software.

Ada was written for use on mainframe computers, originally to write the programs for controlling American guided missiles. The language is named after the Countess



Ada Lovelace, who is considered to have been the world's first programmer. The package includes a 77 page training manual and a disk containing an Editor, Syntax checker, Grammar checker, Assembler and a Disassembler. Also included are several useful routines, and a demo program. The training manual is good, but there is only a contents page not a menu. When you start learning a language, a good menu is vital for finding individual commands.

The Editor allows a program to be written in a high level language before converting to assembler. There are three menus used in the editor, the start menu, write/read menu and the command menu. These menus make the writing and editing of a program very easy. The start menu allows the changing of the colours used for background, header and pen as well as switching on repeating keys if required. The write/read menu allows the listing, writing and editing of a program in memory. The last menu, the command menu, controls the disk drive, i.e. save a program, delete programs etc, and also starts the compiler off when required. Ada will not work with tape drives, only disk drives.

The syntax checker, grammar checker and assembler are all part of the computing operators which converts the program written by the editor to a machine code program. The disassembler is only included for later checking of the machine code programs. The compiler also allows a trace facility to be inserted into the machine code program to try and find any errors in the running of it. The high level language used by the editor is of the standard Basic, with loops and if/then/else and so on, but it does not contain any graphic or sound commands. A very useful feature is that a program can be written in several parts, and all the parts can be called by a program and assembled together.

When I was first told about a package written to control mistakes, I expected a very fast games writing language, and on first impressions I was disappointed. But having used the language and understood some of its capabilities I am very impressed, as it eliminates the tedious of machine code programming.

LOGO

Logo is an education based language. It was developed by Professor Seymour Papert, to allow computers to become accessible to children of as young as 3 years old. The language is a series of very simple commands which can move an object called a "turtle" around a screen. The simplicity of this language allows very young children to draw shapes and patterns very quickly. As the child improves, Logo allows the development of more complicated programs and teaches the student how to think and program in a structured way.

Commodore's 64 Logo package includes a master disk with Logo, and also a student disk with several useful programs and logs.

The turtle can be either a floor mounted stationary unit such as the Valtent device, which draws on large sheets of paper, or as in this package a little triangle shape on the



computer screen. To move the turtle around you use commands such as forward 50, which will move the turtle forward 50 units, and left, right and so on. Most commands can be shortened to two letters, such as fd for forward. The pen can be controlled by commands such as penup, pendown and pencolor. If the pen is down, then wherever the turtle goes it leaves a "trail" behind it; this is the equivalent of a draw command on most other file or graph axes. The turtle can be switched off by the command "hideturtle".

Pictures created, and also the programs which control them, can be saved to tape or disk for later use. There are several single word commands to make disk operations easier for the younger user. The screen can be split to show several lines of text and the text Hi-res graphics, or set to all Hi-res graphics by simple commands.

The unit's disk contains procedures for printing pictures to a printer, putting one onto graphic screens, drawing axes and a simple word processor to name just a few.

A very helpful book is the 'Commodore 64 Logo primer' by Gary Ritter and Nancy Wagner. The book is published by Frontier Hill, and is well worth the purchase as it gives several ideas on how to use Logo.

PASCAL

Pascal was developed by a Swiss Professor Dr N Wirth, as a computer language for teaching structured programming. Structured programming is the method based on the writing of programs in blocks. Each block or routine has only one start and one finish, and will always perform a set task. The great advantage of this method is that each block or routine can be fully tested individually and can be transported between programs without any fear of it not working.

The Pascal versions used in this article are the Pascal 64 by First Publishing, and the Oxford Pascal by Oxford Computer Systems. Pascal is a very strict language, in

that there is not the flexibility of Basic, though to many people this is seen as a good thing. Programs in Pascal have to be written in a set pattern from which you cannot deviate. For example, the sub-routines must always be before the main program, and so on.

Pascal programs have to be well planned before they are coded, as the program is compiled before running, therefore any problems or errors mean that the uncompiled program (source code) has to be reloaded into memory, corrected and then recompiled before running again. This method of coding means that the programs will run a lot faster, but the drawback is that debugging and correcting takes a lot longer. Oxford Pascal has the added advantage of having a compiler resident in the memory, so that short programs and routines can be written quickly without the



reloading and recompiling everytime.

Pascal has a lot of advantages over Basic in the power of the language. With Pascal, variable names can be of sufficient length to be meaningful, arrays can have mixed indices and it is possible to write interrupt routines within the program without going into machine code. The sequence of writing programs in Pascal is as follows. The first line of the program is usually the program name as header, though this is optional with these packages. The next lines must declare all the variables used in the program and their type, for example real, integer, etc as follows.

The next lines contain all the sub-routines that will be called. After all the above declarations the main program can then be written.

Hi-res graphics are accommodated with both these packages, with the ability to switch between text and graphics by command. The graphic commands available cover sprites, plot and copies. There is not a draw command, but a draw routine is given in the Pascal 64 manual. The Oxford Pascal does not have the sprite command, but it does have additional commands such as pen, ink paper etc. ■



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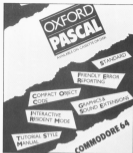
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Several commands are only available on the Oxford Pascal package and they cover envelope creation and vector controls.

Both the packages are very good, with excellent manuals which will allow you to start using Pascal without the need to purchase any other books, though further reading would be advisable to get the full potential of the language.

▲ COMAL

Comal is a language which combines the structure of Pascal with the user friendliness of Basic. The Commodore cartridge of Comal version 1.0 also has Logo commands contained in it for graphics control. The cartridge increases the Commodore 64 to 128K of memory with 64K of RAM. Although Comal is a compiled language, it uses a run-time compiler which means that the program is compiled in memory just before it is run. This method gives the program speed without the need to load and run a compiler program when editing.

On the general programming side, there are several useful editing features such as auto line numbering and renumbering a complete program. A useful editing technique is the use of the edit and list commands. Edit will display the program onto the screen in the normal manner, but the command list will display the program with the loops and procedures indented to allow the ease of tracing a program. When entering a program the syntax of each line is checked as it is entered. Errors are displayed and corrected before each line is entered into the program. This method of checking removes most of the silly errors which crop up when programming. Programs and routines can also be merged using the list-merge commands.

In Comal, variable names can be up to 16 characters long which allows, as in Pascal,

meaningful names to be used. One drawback is that a numeric and a string variable cannot have the same name, i.e. name and name cannot appear in the same program. Loops are covered in Comal by `for/next`, `repeat/until`, and `while/until` as in Pascal.

Procedures are used in Comal the same way as they are in Pascal; they are similar to Basic subroutines, except that they have two major improvements. The first is that they are called by name not by line number. This allows them to be placed or moved

anywhere in the program. Comal differs from Pascal in that the procedures may be anywhere in the program, even nested in the main program block. The other difference to subroutines is that variables in the procedure need not affect any variable in the main program. This is achieved by making a procedure closed.

Graphics are covered by Logo type commands forward, left and so on. Logo commands can be entered directly from outside a program so that graphics can be done by the younger members of the family without having to learn how to program. It-ey is covered by normal graphic commands such as pen, paper, draw etc. The graphics screen can be switched on or off by the "setgraphic" command. In Comal this command does not list the contents of the text or graphics screen, so that a program can switch between them at will.

Sound is covered by single keywords to control envelope, voice and so on. A very useful book about Comal is the Comal Workbook by Len Lincoln. This book, published by Prentice Hall is the Comal bible, with details of all the Comal commands in an easy to read style, and offers many useful routines for use in programming.

As this article has shown, there are several languages for the Commodore 64 which will make the use of its capabilities a lot easier. Forth and Ada are very fast almost assembly type languages, and Logo is a very good introduction to computing for younger people. Pascal is a far more structured language which is used in a lot of higher education areas. Comal is a combination of Pascal and Logo with the user friendliness of Basic.

Although Basic is bound to remain the most popular language for the home programmer, it's worth examining the alternatives — the more languages you speak, the better you can communicate with your 64.

▲ **FORTH** Melbourne House, Castle Yard House, Castle Yard, Richmond, TW10 4TT, 01-940 0064

▲ **ADA** First Publishing, Unit 208, Henswood Road, Henswood Park, Pangbourne, Berks, 01397 2288

▲ **LOGO** Commodore, 1 Hunters Road, Welton North Industrial Estate, Croy, Northants, 0536-209115

▲ **PASCAL** First Publishing (as above) Oxford Computer Systems, Hemington Road, Woodstock, Oxford, 0991-612500

▲ **COMAL** Commodore, 1 Hunters Road, Welton North Industrial Estate, Croy, Northants, 0136-201553



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In the land of youth

Fighting off the Gremlins and exploring Ti No Nag, Ken Matthews buckles on the adventurer's sword and bravery sets forth

BRIAN HAWORTH'S name has long been known to many adventurers, due to the success of the Channel 4 (Digital Fantasy) series of *Mysterious Adventures*. Brian has recently joined the team at Adventure International, and now has a very full work load translating Scott Adams' adventures to other machines as well as acting on additions to the *Mysterious Adventures* which are now being marketed by Adventure International. AFI's latest game, written by Brian, is featured this month — **GREMLINS — the Adventure**.



From *1984's Gremlins* on the home in Adams' new incarnation of "Gremlins, the Adventure" game.

Recent months have seen many game-of-the-book/film titles that have proved to be full-blown attempts to cash in on the financial success of the original production. Happily, this is not true of *Gremlins* — it lives up to all of the noises, and most of the less so, claims made for it!

This excellent little game is remarkable for two main features — the very high quality graphics and the use of animation in some of the scenes.

The plot casts you as the film's hero, with the task of ridding Kingston Falls of the Gremlins which threaten to overrun it. These evil little 'bees' have 'bred' from your cute little Gremlin, Gizmo, who you have allowed to get out, and led after midnight.

The game itself is not large or particularly difficult, but provides plenty of interesting and amusing things to do, with and to various bands of wandering Gremlins. Almost all of the locations feature graphics which show great attention to detail and, unlike some, really add to the atmosphere of the game. Getting objects or performing some tasks often provokes an appropriate response in the pictures, giving

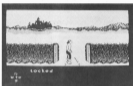
the player a much better sense of 'taking part'. The animation in some scenes is quite funny — especially the blended Gremlin and, for the most part, the Gremlin flasher!

Gremlins is a well written, well presented and very enjoyable game, priced at £10.99, enough to tip the scales in favour of the film yet different enough to provide many challenges to those more familiar with the antics of Stripe and his gang of nasties.

The second of this month's games is a translation of the Spectrum hit — **Ti No Nag**.

The concept of *Gargole's* game is truly original, featuring a quest in the Celtic 'Elbow World' where the spirit of the three Cuchulainn must journey in search of the fragments of the Soul of Calan and, having gathered them, re-unite the fragments and activate the seal to heal the Great Enemy in his timeless land.

The programming of this adventure is nothing short of brilliant, as you will see as you guide Cuchulainn, link hair flopping



1000000

as he makes, through the almost countless screens of *The Land of Youth* to complete the dozens of minor quests necessary to recover the fragments of the seal and coded information to restore the artefact to full power. The high-resolution graphics are unlike anything seen before on the 88.

Mapping

The shade of our hero has no need of food or drink, but as well as the problems of finding the object of the real quest he has to deal with many independently animated and motivated creatures, such as the ever-nibbling little who seek to threaten you at every turn, although some characters can be won over.

The game and its scenery are so vast that many hours are needed just for a preliminary exploration and mapping is a real headache too, as you find new pathways and items, the sense of discovery and achievement is very satisfying.

The background in the accompanying booklet and postcard map of *Ti No Nag* give a package which is excellent value for money and which will provide many, many hours of enjoyable play.

As a footnote, the sequel to *ENH*, *Dun Derock*, is nearly complete and, hopefully, will be released on Commodore and Spectrum at the same time.

Finally, as Barbara Conway is taking leave of these pages for now, I would be very pleased to hear from any of you with advice or problems, comments and suggestions as to what you would like to see on this page. So get pen to paper and let us help you! ■



Does it all add up?

This handy 64-Vic 20 utility program by Mike Hart allows you to incorporate a checksum routine in your own programs, making data entry easier.

AS PROGRAMMERS will know, there is no such thing as an idea that cannot be improved upon. The idea for CHECKSUM came from an appendix to the magnificent book by Martin West, *Programming the VIC*, in which there is a specialized routine which checks that a program has been entered correctly from a listing. This appendix was actually written by one Charles Hawkins, and is entitled "The Automatic Proofreader".

Once my program has been entered and RUN, then a checksum of each line typed in will appear in reverse at the top left hand corner of the screen. This particular CHECKSUM will ignore spaces that you put into the line, and will use direct transpositions of letters; if you type POKK instead of POKE the checksum will still be the same, as the characters will add up to the same checksum. In the majority of cases, however, CHECKSUM will detect if you have made a significant error. Keywords need to be typed in full and not abbreviated to generate the correct checksum.

CHECKSUM is really a utility for software writers. When the final version of a program has been developed, then putting a listing through CHECKSUM will reveal the checksums for each particular line. These checksums can then be put in the form of a table, or even appended as REMs to the end of machine tape for the understanding that they are not to be typed in.

Squeezed

The original PROVERGLASSER occupied part of the cassette buffer, where it was likely to be overwritten since you loaded a new program in on tape. This version has been severely "squeezed" so that it will neatly fit into an area of memory that happens to be safe, and is available on both the C-64 and the VICs. However, it has been written in such a way that it can relocate should it conflict with another favorite routine that occupies the same space. While the original version covered for both VICs and C-64s, this version does not attempt to do so but is written for the C-64 with adaptations for the VIC. It has been tested out on both machines. A disassembly is provided for those who like to see how such things work, and can learn from them!

I hope that you find this utility useful if you wish to ensure that a vital portion of code is correctly entered — typically it will be DATA for a machine language routine, but the same principle works just as well on BASIC programs. ■

```

10 PRINT "CHECKSUM DISASSEMBLY"
20 FOR I=0 TO 255
30 PRINT I; " ";
40 FOR J=0 TO 255
50 PRINT I*256+J; " ";
60 PRINT " ";
70 NEXT J
80 NEXT I
90 PRINT "-----"
100 FOR I=0 TO 255
110 PRINT I; " ";
120 FOR J=0 TO 255
130 PRINT I*256+J; " ";
140 PRINT " ";
150 NEXT J
160 NEXT I
170 PRINT "-----"
180 FOR I=0 TO 255
190 PRINT I; " ";
200 FOR J=0 TO 255
210 PRINT I*256+J; " ";
220 PRINT " ";
230 NEXT J
240 NEXT I
250 PRINT "-----"
260 FOR I=0 TO 255
270 PRINT I; " ";
280 FOR J=0 TO 255
290 PRINT I*256+J; " ";
300 PRINT " ";
310 NEXT J
320 NEXT I
330 PRINT "-----"
340 FOR I=0 TO 255
350 PRINT I; " ";
360 FOR J=0 TO 255
370 PRINT I*256+J; " ";
380 PRINT " ";
390 NEXT J
400 NEXT I
410 PRINT "-----"
420 FOR I=0 TO 255
430 PRINT I; " ";
440 FOR J=0 TO 255
450 PRINT I*256+J; " ";
460 PRINT " ";
470 NEXT J
480 NEXT I
490 PRINT "-----"

```

CHECKSUM DISASSEMBLY									
PC	OP	DR	SR	DR	PC	OP	DR	SR	DR
0000	00	00	00	00	00	00	00	00	00
0001	00	00	00	00	00	00	00	00	00
0002	00	00	00	00	00	00	00	00	00
0003	00	00	00	00	00	00	00	00	00
0004	00	00	00	00	00	00	00	00	00
0005	00	00	00	00	00	00	00	00	00
0006	00	00	00	00	00	00	00	00	00
0007	00	00	00	00	00	00	00	00	00
0008	00	00	00	00	00	00	00	00	00
0009	00	00	00	00	00	00	00	00	00
000A	00	00	00	00	00	00	00	00	00
000B	00	00	00	00	00	00	00	00	00
000C	00	00	00	00	00	00	00	00	00
000D	00	00	00	00	00	00	00	00	00
000E	00	00	00	00	00	00	00	00	00
000F	00	00	00	00	00	00	00	00	00
0010	00	00	00	00	00	00	00	00	00
0011	00	00	00	00	00	00	00	00	00
0012	00	00	00	00	00	00	00	00	00
0013	00	00	00	00	00	00	00	00	00
0014	00	00	00	00	00	00	00	00	00
0015	00	00	00	00	00	00	00	00	00
0016	00	00	00	00	00	00	00	00	00
0017	00	00	00	00	00	00	00	00	00
0018	00	00	00	00	00	00	00	00	00
0019	00	00	00	00	00	00	00	00	00
001A	00	00	00	00	00	00	00	00	00
001B	00	00	00	00	00	00	00	00	00
001C	00	00	00	00	00	00	00	00	00
001D	00	00	00	00	00	00	00	00	00
001E	00	00	00	00	00	00	00	00	00
001F	00	00	00	00	00	00	00	00	00



Playalongacommodore

... or how to turn your Commodore into a video jukebox courtesy of Music Sales

THE LATEST additions to the Music Sales range of products distributed by Commodore, are the software equivalents of a "jukebox" — the Playalong albums.

Ideal for musical beginners, the three packages, Popular Classics, Pop Hits, and Beatles, come on cassette as disk at £9.95.

The package we looked at was Popular Classics, but each of the "albums" follows the same format. They can be used purely for entertainment, to play cleverly-programmed versions of well-known tunes, or they can be teaching aids which will play an accompaniment for which you can learn the melody.

The package contains the software, manual and a music booklet, which contains simple versions of the music on the album. In the case of the Popular Classics package, these include favourites such as *Milk and Honey*, *King*, *The Traveller's Song* and *Dance of the Reed Flutes*.

On loading the software, you have the choice of twelve tracks, each of which has two versions, the full version of the simplified one printed in the music book. You can also select various options such as Single Key Play, Rhythmic Mode or Performance Mode. In Single Key mode, one key you press will play one note of the melody line and advance the accompaniment. This feature allows you to learn timing from the music book.

Rhythmic mode plays the accompani-



ment through and displays the notes in the melody for you to add. You can use the Music Maker clip-on keyboard to play notes, or just press the appropriate keys.

Performance mode lets you play the melody, but the accompaniment won't wait for you to catch up!

If you wish the music can be accompanied by graphics showing which notes is playing, or the current pitch.

Concert or Jukebox mode allows you to

chain tunes together. You can turn the music to other instruments and vary the tempo as you require, but perhaps most interestingly you can connect up a MIDI equipped synthesizer to play the music (since you've invested in a suitable MIDI interface such as that by Adlibtech costing £29).

In Dual mode, all three musical tracks are sent out on one MIDI channel, so one MIDI synth will play all three tracks in the same voice. In Poly mode, the three tracks are transmitted on three different MIDI channels, so you can connect up three MIDI synths to play the three tracks in different voices. Lastly, the most powerful mode, Mono, allows some keyboards such as the Sequential SixSix, Oberheim Expander and some Casios to play the three tracks in different voices simultaneously.

The Playalong Albums are inexpensive, but if you accept the limitation of not being able to write your own music, but the forthcoming Prefixed, Sampler and Process packages are all compatible with the system, and will expand its potential enormously. ■

Product: Playalong Albums
Manufacturer: CBM 64
Supplier: Commodore
Price: £9.95



Every good boy

... deserves fun. Chalksoft makes it child's play to learn music

NOTE INVADERS is a simple and useful music teaching program from the educational software house Chalksoft. It's ideal for younger musicians, as it helps to teach the notes as they appear on the musical staff, and in at the same time a "shoot 'em-up" game which should retain the interest of reluctant learners.



At £9.95 for the cassette version and £11.95 for disk, Note Invaders includes three programs. The first, Invaders, allows you to select a treble or bass staff, then

prints up a note which moves from left to right. Your task is to decide what note it is, and press the appropriate key, A to G. If you choose correctly, your "spaces laser" will destroy the note. You are then awarded a score depending on how long you took to respond. If you choose the wrong note, you lose a life.

The second program, Staff 1, demonstrates the notes on the treble and bass clefs, and puts questions in you which have to be answered within a time limit. The graphic demonstrations are accompanied by appropriate musical sounds.

The third part of the program, Staff 2, provides a test of memory questions, and if you make any mistakes in answering them the whole staff with the right notes is displayed as a reminder.

Staff 1 and Staff 2 have options for teachers, so that individuals or classes can use the program. Scores can be kept and emailed at any time.



Note Invaders is just part of a music teaching series which includes *Keyfingers* and *Pitch-bending* programs. For learners of 7 upwards, Chalksoft's programs form an interesting form of learning which avoid the usual pitfalls of repetition and lack of graphic interest. ■

Program: Note Invaders, 64
Supplier: Chalksoft, PO Box 48, Spalding, Lincs, Lincolnshire, PE11 1AZ, 0715
Price: £9.95 tape, £11.95 disk



A change of character

Fed up with the 64's boring old character set? Now you can use sixteen new sets and define your own using Font 64 from Basic Software

WHEN WRITING your own Basic programs, there's nothing more frustrating than being limited to the 64's standard character set. It's not very interesting to look at, and, worse to the point, it gives programs an amateurish look which most commercial software avoids by using specially-defined characters.

Looking at recent releases, programs like Hewlett's *Goldilocks Day One* and Adalgara's *Hyperlevel* are excellent examples of programs enhanced with special character sets. Now you can achieve similarly professional results with a package from Basic Software, Font 64.

The package, supplied on cassette, contains 16 alternative character sets, or fonts, plus the option to derive and store your own sets.

So how does it work? The 64 contains two separate fonts, one for upper case and graphics, and one for lower case and graphics, and any of these can be used in reverse. Font 64 allows you to create your own alternative to font one, but you lose the ability to use font two in the process. After selecting the new font you can decide at any time whether to use the normal or new character sets.

The alternative fonts take up 2K of

memory starting at 2048, and can be called up into a program using a simple POKE. The program on loading moves the bottom of Basic to make way for the new sets, then presents you with a screen, after set, view



set, select font, and read Options one and two both display a list of the fonts available, which include Wide, Insta, Thick, Thin, Greek, Scientific, Inverted, and so on, in upper or lower case. After choosing the set you want to work on, the

full character set is displayed and a grid with an arrangement of one of the characters is printed up. You can then use the cursor keys to rotate any of the characters before sending the set back into memory.

The Select Font option allows you to choose four character sets for your program, and, noting the polar numbers associated with each, reverse or rotate them before storing them.

After quitting the program you can call the new character sets into your own program at any time by using POKE 53272,10, and using shift and reverse to select any of the four stored fonts.

If you wish to save a program including the new fonts, you must go through a short save routine which makes sure the fonts are included in the save, and on re-running the program you must POKE 44,16 before use.

Font 64 can be taped to disk, but isn't sophisticated enough to allow you to perform print-outs of the new character sets.

Font 64 costs £5.00 from Basic Software, 4 Chapel Villas, Dalrymple, Dunfermline, Fife, 0843-627145.

Turning on to Video

Adamsort's Videobasic adds graphics and sound commands to make the creative 64 programmer's life that much easier

CREATIVE users of the 64 often bemoan its lack of commands for graphics and sound. One solution is to buy a Basic extension package which removes the necessity for using cumbersome POKEs. The latest on the market, Videobasic from Adamsort



(distributed by Adamsort), is designed to making sound and graphics a less daunting proposition.

Videobasic uses fifty extra commands, demonstrated in a short introductory routine. Graphics commands include HIREL, to set the screen, MULTI, for a

multicolour screen, X and Y for plotting points, DUMP to dump a screen to a printer (including the MPY-BIG, DRAW, BOX, CIRCLE, BLOCK, FILL, and so on, which are fairly self-explanatory).

There are several commands for sprite development, positioning, collision, detection, and colouring, and LOGO-type turtle graphics commands including COLOR to set colour, FORWARD/TURN to activate and deactivate the "pen", and movement and positioning commands.

Several functions are particularly useful for games — KEY and PADDLE return values from the controller ports, and PEN reads X, Y co-ordinates from a lightpen.

The sound commands allow you to control most of the SID chip's parameters, including notes, waveforms, ADDB, volume, pulse width, filters and effects. Tones can be programmed to run at the same time as your Videobasic program.

Other functions include screen saves, memory management, timers, repeats, STOP disable, and more. It can become

very complex, though most computer BASIC programmers will soon get the hang of Videobasic with the help of the tutorial programs on the disk.

Videobasic's great merit is that it can portate free-standing copies. This means



that unlike packages such as Simon's Basic, it contains programs which can be run by 64 owners who don't have the package. ■

For more details, contact Adamsort at 28 Norwich Avenue, Rushdale, Lancs, 0706-521304.



Bessey means business

Commodore's new general manager, Nick Bessey, hopes to conquer both the home and business micro markets. We reveal his ambitious plans

"I EXPECT to be offering the 64 at its present price right up to the end of 1986. The price actions we have seen earlier this year are not supported by us. We expect the product to re-establish itself".

So says Nick Bessey, Commodore UK's new general manager, and the man who, more than anyone else, will be responsible for re-orientating Commodore's development in this crucial stage of the UK market.

Nick Bessey, at 36, is the youngest national general manager in Commodore worldwide. His experience and reputation sprang from twelve years at International Business Machines — IBM, or "Big Blue" — though this doesn't mean that Commodore will be neglecting the home computer market in favour of the new PC-compatible machines, and the forthcoming Amiga and Unix micros.

Marketing

Whatever field Commodore enters, though, it's clear that marketing is the area in which they will either boom or bust. The quality of the machines has never been in question; poor backup and inadequate understanding of the market has led to the relative failure of the C16 and Plus/4, and the current difficulties of the 64.

As the key strategic behind IBM's retail marketing division, dealing with the "low-cost" products such as the PC, Nick Bessey

is ideally suited to sort out these problems. His experience as a top salesman, and a planning manager in the Canadian, Japanese and Australian markets for IBM, gives him an understanding of the requirements of the international market as well as a good technical grounding — which could not be said for Bessey's predecessor, ex-United Dairies Howard Starworth.

So what are Nick Bessey's plans to revive the flagging Commodore name, in the face of competition from Atari (now helmed by CBM founder Jack Tramiel)? The price of the 64 is not in question, despite the discounts by Lasky's and Best's to discount store stocking it at the present price, falling at 112%, in order to compete with the £149 Plus/4, no-one can make money on the 64 at Commodore's dealer prices. Bessey promises to outline his plans for retailers soon, and justify the price. "A strong restriction is what the thing sells as, to make; the price is what we can afford. The 64 has excellent functions, more software than any other product on the market, and there's a high level of peripherals. I hope to visit the head offices of our 4-5,000 outlets — they have got to hear the story. The High

Street dealers are absolutely right to have been with our marketing profile this year. They're very powerful in terms of market sales, but Best's and Lasky's together represented less than 3% of our volume sales last year. Discounting is very dangerous — it reflects a lack of confidence, and it doesn't move product. I'm sure the people who embarked on it are regretting it."

Inventory

Bessey plans to boost the 64's market profile by including bundled software in the price. But what of the C16 and the Plus/4? "The C16 is an excellent product, but sales are not as high as we hoped. The truth is that the retail price is not wise to determine, but discounting has not resulted in any significant product movement." On the Plus/4, Bessey is less optimistic, although he pledges software support from Commodore. He admits that the built-in software is poor, but suggests that there are possibilities for selling the machine with different default software or in combination with peripherals. Fortunately — from Commodore's point of view presumably, rather than from that of Plus/4 owners — "inventory is not needed".

What of the 128, the C64's successor, which offers the magic element of software compatibility? "It will definitely be available in June. The price will obviously be

above that of the 64... but the price is the only secret I've got left." All the technical specifications of the C128, its hardware and operating systems, have now been released — all that remains is for the machine to be launched.

"Activity in the home computer market is changing. People will go home, and won't be happy to have a home computer which is only a game machine, or has a limited capability. People will also increasingly work at home — there's a convergence in the markets for home and business users. That's why Commodore is in such a strong position — we are absolutely dominant in the home market worldwide."

Jack attack

The spectre of Atari, entering the market with the 1120 model, the 128K, 1800K, doesn't deter Bessy much. "I'm not bothered by a giant deal — because he causes turbulence which has very little to do with his ability to supply product."

On the business machines, Bessy maintains a more positive attitude which reflects his experience. "Our ability to offer — via our central integration — a low priced product, is unique. Because of our distribution network, the products are available anywhere in the country. The initial response to the PC is overwhelming — 400 units in the last week. We took a



The C128 — "the price is the only secret I've got left"

very mature attitude in not announcing until the product was ready. The first PC 20's have gone out, and it's now readily available. The 180K version is only 18% more expensive than the basic IBM PC."

"Commodore's position in the compatible market is well-timed. Most people understand what an IBM-PC compatible can do, but for one price people are afraid to buy more, and use them for more modest applications. The computer age has not yet occurred for whole strata of people in the UK. They're still doing things in a Dickensian way."

Commodore's

other attempt to

lighten this

Dickensian dark-

ness comes in the

form of the Amiga

machine. "I don't

think we will

experience the

Amiga this year,

though. One of the

prerequisites for a

launch now is

volume availability

at the launch date. I

was astonished by

the Amiga when I

saw it — its

graphics are an

overwhelming

strong point, in

terms of quality and

flexibility." With a

ramounced 256K

RAM, 128K ROM, a

68000 processor and

advanced dedicated

graphics chip, the

Amiga should appeal

to applications specialists,

although it would

clearly be an impressive games machine. Price estimates fall somewhere between \$100 and 1800.

So with the 128 taking over the home market, and the PC, Amiga and the Unix 800 machine as the business front, Commodore will have a powerful range of weapons in the 1986 market war.

"People will be very confident in the Commodore name... it's a substantial name. But people don't associate Commodore with PCs, and I'm going to have to address that. That's why we're offering the 128 — you'll be able to do everything you could do on the 64, with more powerful programming applications, 80 column display, and CPU/M — the basis of some very satisfactory software."

Buoyant

"We have had a difficult post-Christmas period in terms of meeting product, because of inventory still out there. In the UK, though, there's a very buoyant business systems market which we are going to enter very aggressively. In '85, we plan very substantial growth, over that of '83 and '84. It will be very profitable too, with the addition of the business systems. There has been some pain felt in recent months, but I feel very optimistic. I would still be in IBM territory. I wouldn't have come unless I felt total confidence in Commodore."

The appointment of Paul White to the position of marketing manager should help to stabilise Commodore's UK operations, in the wake of the departures of Stansworth, Alison Bradley and David Grendall.

"The team will be very well equipped to deal with the aggressive programmes I intend to run shortly. Quite a lot of things have to be improved, service to dealers, how much we reflect their requirements and so on. But one of the things that was established before I arrived was making sure we had adequate profilers."

"I want to be the leader in all the micro markets — home, home professional, IBM-compatible, professional — and I understand I have got my work cut out!" ■



Spreading the word

Two top-of-the-line word processors — *Superscript* and *Visawrite* — tested and compared by Trevor Doherty

COMMERCIAL users have the widest choice of word processors for any home machine. Choosing the right one to suit your needs for home or small business use is important, as it is probably going to be your single most-used piece of business software.

Because a page of text can be much wider than the screen — typically 80 characters or more — any 84-word processor must find a way of entering and editing text on the narrowest 40-column screen and then allowing it to be printed out on wider paper. The two top-of-the-line word processors I am comparing, *Visawrite* 66 (Price, £95.95, disk) and *Superscript* 66 (Price, £95.95, disk) do this using different methods. Both products include a spelling checker; *Visawrite* is also available without the speller, on disk or cartridge.

Updated

Superscript is a neatly updated and expanded version of *EasyScript*, which many people use because it came free with their disk-drive! If you are familiar with *EasyScript* you will find it quite easy to get on with *Superscript*, although I was being caught out by the changes at FIRST. Precision have an upgrade scheme for existing *EasyScript* users.

Superscript retains *EasyScript*'s point-for-point approach to text entry and editing. Text is entered within the 40 columns of the screen and commands added to format the document when printed. You can pre-view the whole document on the screen in its printed format, by scrolling the screen sideways. The big difference compared with *EasyScript* is that *Superscript* underwraps; it doesn't split words at

the end of a line, making editing and reading the document on the screen easier. *Superscript* comes with an extensive manual, the first version being a booklet. An audio learning cassette is included which will take you through the basic skills.

Boilerplating

The basic control key for *Superscript* is **J** which places a menu across the top of the screen. Moving through the choices given shows a brief description underneath; highlight the right one, hit return and the command is carried out; although some choices have further sub-menus. At first this is the easy way, you get familiar with the options quickly, but once you become experienced *Superscript* allows you two faster ways of issuing commands.

Firstly you can use command initials; thus to raise a word — press **F I L E W**. For a number of commands there is a second way; again to raise a word — press **C T R Y - D**, control sequences which would be familiar to anyone who has used *Wordstar* on a business machine. I found myself using a combination of all three methods! Just about every feature I have ever seen in a word processor is included in *Superscript*; search and replace, block move, indenting paragraphs, numeric lists, calculations, merging, *underlining* (the ability to build up letters from standard paragraphs stored on disk) etc., etc. It is hard to imagine anyone ever using all the features. A vast range of printers are supported using printer definition files. You define the printer type, screen colours, paper size and so on, in a "defaults" file which loads at start-up.

Advanced users will appreciate the ability

to add commands by defining your own using keyboard macros assigned to a single key. These can be temporary or permanent, stored in the defaults file. Using these you can type a lengthy command sequence or even type like your name or address with a single keystroke. The spelling checker contains a 30,000 word dictionary and compared to *EasyScript* is much easier and quicker to use.

To spell-check your document, *Superscript* first displays statistics of how many words, unique words, sentences and paragraphs there are. You can then list the words alphabetically or in frequency order if you wish, then go on and correct spelling mistakes which *Superscript* highlights. If you copied the dictionary on to your micro-disk all of this is accomplished without a single disk change. Words can be added to a user dictionary during the correction process.

Superscript is certainly the most comprehensive word processor available for the lot. If it will document, will read *EasyScript* files and link with *SuperBase*, you can get on it quickly, but very few will plumb its considerable depths. If you need a sophisticated and powerful word processor for the lot, this is the ultimate.

Pre-formatting

Visawrite is a pre-formatting word processor where you lay the document out on the screen more or less as you expect to see it printed out. If you are already a typist, this is a very natural way of working; as a writer I find this cumbersome — I prefer to get the words down out of my head quickly, and worry about the formatting afterwards.



Viawrite allows you to type in a document wider than the screen by automatically scrolling backwards and forwards as you type — it means that you can only see half the width of a 48 column document at a time on the screen. A single command centers the document on the screen width allowing all of the text to be reviewed and edited with ease. The simplicity of switching between screen width and document width makes Viawrite work convincingly as a WYSIWYG (what you see is exactly what you get) word processor on the 48 column screen. Until I used Viawrite I was firmly convinced that post-formatting was the only way to work with the restricted screen width on the 64.

Getting started with Viawrite is very due to the excellent manual and the simply learned controls. The main control used is the CTRL key and this is used in conjunction with a easily remembered letter to carry out a particular operation. Thus

you use CTRL to change the screen width. In addition some functions are called by using the CTRL key; with the more common functions, such as insert and delete, having function key alternatives.

The insert, delete and move functions are a delight to use, just like a Wang dedicated word processor. The function keys are used for paging through the document; Viawrite works by dividing the document up into separate pages — this is another feature which typists will love and writers will not. All the features you would expect from a good quality word processor are included including support for the virtually any printer. The 30,000 word spelling checker, which loads separately from disk, allows new words to be "learned" and added to the new dictionary during document checking. It loads and works very fast. Viawrite will read in documents from other word processors including Easywrite, and links with Pegasus to provide an unbeatable

integrated business system on the 64.

For any other better machine, you would be pleased to find a single product as good as either of these, 64 writers are lucky to be spoilt for choice. There are both excellent products. If you were starting from scratch, I would probably recommend Viawrite for most applications. It has more features you could ask for and is particularly pleasant to use. Superscript offers more features and if you are already an Easywrite user, Precision's upgrade of it is very attractive. Both Precision and Via have C328 versions with 48 column capability in the pipeline, and Viawrite on the 128 is based on the excellent upgraded PC version.

Via Software: 9 Maxton Road, Broomfield, Gillingham, 0634-831780
Precision Software: 6 Park Terrace, Worcester Park, Surrey, 01-833-7186

Office in your pocket

Database's Mini Office is the cheapest way yet into wordprocessing, databases, spreadsheets and business graphics.

IF THERE ARE any awards for utility software, this package would be a deserving one. Database's 64 Mini Office is a miracle of economy both in size and cost, since it equates a word processor, spreadsheet, database and business graphics programs onto one tape, and yet costs only £3.95.

Intended only as a gentle introduction to "business" software, Mini Office has managed as something altogether more impressive. It may sound unlikely, but I think that despite the disadvantages of being on tape — although I'm sure there will be a disk version if demand is high enough — Mini Office has something to offer EVERY 64 user. Whether you want to write letters, keep details of collections or other data files, prepare graphs and charts or make complex accounting tasks easier, Mini Office can help you out.

Let's look at the facilities offered by each of the four programs.

Corrections

The word processor allows you to select several or double-size printout on the MPS-801 or 802 before you even start typing — and few expensive WP packages allow that. You can if you wish write in double-size text and print out in normal size — a valuable aid for the past-tense typist.

A display at the top of the screen tells you the time elapsed since you started typing (and at a price of a few pence you can bring up a typing speed readout), the number of words written so far, and the memory space remaining. Corrections to typed text are made using the cursor and DEL key, and you can set the margins, line lengths and tab positions as you desire. Sections of text can be moved using the cursor keys, and files can be saved to tape or disk. Boldface, background and ink colours can be changed.

The word processor is designed to work with a page length of 11 inches, so if your

printer doesn't conform to this standard it will print on the perforations unless it has automatic skip-over. Aside from that, the program is easy to use and has no major drawbacks, its best feature is that it uses an uncomplex control codes, so it's easy to pick up.

The database allows you to set the number of "fields" in your records, define their names, specify whether numeric or



string, and so on. Once your records are entered you can sort them, retrieve them and save them according to a wide number of requirements: for a speed listing, or for specified numeric values, or number-greater than, less than, or between two limits. You can perform a multi-field "sort", put the records in alphabetical order, and replace specific fields at will.

The spreadsheet program allows you to create a "sheet" of a specified number of rows and columns, insert column headings, and define formulas by which the numeric data you insert in the boxes can be combined. For instance, you could work out your monthly household expenses, multiply by twelve to get a yearly sum, add mortgage payments, subtract income and get a total of money remaining at the end of the year. Many facilities for copying and altering sections are included, and the whole thing can be printed out or saved as a file.

Graphics

This file can then be used as input for the graphics program, which will allow you to specify the rows of the spreadsheet information you wish to include, and display three kinds of chart: line, bar or pie. With a suitable printer you can then produce hard copies.

Although no-one would pretend that Mini Office is powerful enough to cope with large-scale business applications, for most users it will probably be a godsend. At the price, it can be justified as a "training aid" for inexperienced users who wish to go onto something more expensive and sophisticated — but I expect more people regarding Mini Office in this way will end up clicking plans to splash out anyway or simply pounds on one sophisticated package, and will stick with this little marvel much longer than they planned. ■

Product: Mini Office
Micro: IBM 64
Supplier: Database Software,
Europa House, 68 Chester Road,
Hazel Grove, Stockport, S82 3NF,
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Spectrum

FAWS of utility comes from T. Skipton of Amnley, Yorkshire

THIS PROGRAM displays the INK, PAPER, BORDER commands of the Sinclair Spectrum. The first listing can be typed in as Basic, and will load as machine code. The second listing was written in assembler using the Champ package. The machine code locates itself at 4051,

but it should be possible to relocate it. To use the program, type as part of some routine
SYNOPSIS: BORDER, PAPER, INK, where each parameter is replaced by a colour - code 0-15. You should then see the values change on the screen.

```
10 DATA22,241,183,134,87,32,241,183,134
20 DATA88,32,241,183,134,87,324,15,178
30 DATA22,32,44,193,165,87,281,18,178
40 DATA13,32,58,193,165,80,281,18,178
50 DATA4,32,58,192,95,78,72,178,185
60 DATA89,141,134,2,58,165,87,143,52
70 DATA288,95,185,88,141,33,288,95
100 FORA=401321049213
110 READB:POKEA,B
120 NEXT
```

```
4000  *S,SHIPTON                                C023 8894                                B05  FRROR
4001  11 JANUARY 1985                          C025 2820C0                               J8R  PAPER
4002  .                                         C028 88                                RT5
4003  *COLOUR,BORDER,PAPER,INK              C029 4C4882                                FRROR  JMP  10240
4004  C000 000                                C02C 0558                                INK    LDA  455
4005  C000 20F187                             C02E 8D0882                                C00  STA  10200
4006  C003 0057                               C031 88                                RT5
4007  C005 208187                             C032 0557                                BORDER LDA  457
4008  C008 0058                               C034 8D2000                                C00  STA  10200
4009  C00A 20F187                             C037 88                                RT5
4010  C00D 0059                               C038 0550                                PAPER LDA  658
4011  C00F 0018                               C039 8D2108                                C00  STA  10201
4012  C011 0010                               C03D 88                                RT5
4013  2820C0                                  J8R  14C
4014  0557                                  LDA  457
4015  C018  C018                             C04  *418                                SYMBOL TABLE :-
4016  0000                                  B05  FRROR
4017  2820C0                                  J8R  BORDER                                FRROR  C023  INK    C00C  B01+R  C032
4018  0558                                  LDA  458
4019  C019  C019                             C04  *418                                PAPER  C030
```

Patterns

FAWS C18 routine comes from David Hiscope of London

PATTERN MAKER is a 64x64 graphics utility. It uses two of the C18's graphics commands, BOX and CIRCLE. On routine, enter 1 for CIRCLE or 2 for BOX. Left to right position of the shape is from 1 to 500. 200. Width is from 1 to 500. Height is from 1 to 200. Angle from 0 to 90. Movement

is from 1 to 10, and time period from 1 to 5000. On completion, press any key to return.

As a good example, select options 1,10,10,200,5,0,7,90, to generate a fascinating display of moving boxes which fills the screen with geometrical patterns.

```
10 REM      ** PATTERN MAKER **
20 REM BY DAVID HISCOPE 1985
30 VOLS
40 SOUND 1,600,10
50 SCHLR
60 COLOR 0,1:COLOR 1,5:GRAPHIC
70 PRINT"C08          PATTERN MAKER"
80 PRINT"*** CIRCLE=1 OR BOX=2 ?"
90 INPUT Z:IFZ<1ORZ>2THEN90
```



```

100 PRINT"?"
110 PRINT"← LEFT TO RIGHT POSITION 1-200 ?"
120 INPUT LR:IF LRC1 OR LRC0THEN120
130 PRINT" ↑ UP & DOWN POSITION 1-200 ?"
140 INPUT UD:IF UDC1 OR UDC0THEN140
150 PRINT"× SHAPES WIDTH 1-200 ?"
160 INPUT SW:IF SWC1 OR SWC0THEN160
170 PRINT"◊ SHAPES HEIGHT 1-200 ?"
180 INPUT SH:IF SHC1 OR SHC0THEN180
190 PRINT"◊ SHAPES ANGLE 0-360 ?"
200 INPUT SA:IF SAC1 OR SAC0THEN200
210 PRINT"◊ SHAPE MOVEMENT 0-10 ?"
220 INPUT SM:IF SMC1 OR SMC0THEN220
230 PRINT"◊ SHAPES TIME PERIOD 0-5000 ?"
240 INPUT TP:IF TPC1 OR TPC0THEN240
250 GRAPHIC 1,1:COLOR 4,1
260 SOUND 1,800,10
270 ONZOO TO280,330
280 FOR R=0 TO TP
290 CIRCLE 1,LR,UD,SW,SH,SA
300 SA=SA+2:SH=SH+2
310 NEXT R
320 GETKEY$:IFR=0""THEN40
330 FOR R=0 TO TP
340 BOX 1,LR,UD,SW,SH,SA
350 SA=SA+SH
360 LR=LR+SH UD=UD+SH
370 NEXT R
380 GETKEY$:IFR=0""THEN40

```

Loader

J. WOODLEY of Power's Bar needs this utility for the 64

THIS MACHINE code routine will NEW the program it is part of, then load and run a new one. This is useful when you have to split a program due to lack of memory space. You can use it as part of a security routine, to load the part of a program requiring a password, then load the main routine only when the password is supplied.

LOADER can be added to your Basic programs either at the beginning or the end, but you should only use SYS:8112 when you want to load the next part. The program uses the keyboard buffer (031440) to NEW the old program and LOAD/RUN the new.

```

1 REM BEWARE! THIS PROGRAM NEWS ITSELF
2 REM SO SAVE IT BEFORE RUNNING
5 REM BY J.WOODLEY
10 FORI=49152 TO49240:REMOR: S=S+A:POKET,A:NEXT I
11 IFS=0:11659 THENPRINT"VALUE OF DATA ERROR'S"END
20 DATA169,60,229,169,70,32,210,255,169,69,32,210,255
30 DATA169,87,32,210,255,169,17,32,210,255,169,17,32,210,255
40 DATA169,76,32,210,255,169,79,32,210,255,169,65,32,210,255
50 DATA169,68,32,210,255,169,19,32,210,255
60 DATA169,13,141,119,2,169,13,141,120,2,169,82,141,121,2,169,85,141,122,2
70 DATA169,78,141,123,2,169,13,141,124,2,169,6,141,198,0,96
80 SYS49152:REM USE TO LOAD NEXT PROGRAM

```

Send us your Commodore programs, enclosing a cassette — and a printout on plain white paper if possible, both listing and source code if a typewritten introduction describing the program and explaining how it is constructed. We pay £5.00 for each bug free listing published. We cannot guarantee to return every program submitted, so please keep a copy. If you want us to return your listing you must include a stamped, addressed envelope. If you have any problems with the programs, please write to the appropriate author, Software File, Commodore Magazine, 12-18 Little Newport Street, London WC2H 7PP

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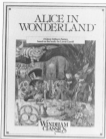
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Serious moonlight

Book: Moonlighting with your personal computer

Author: Andrew J. Wajanan
Publisher: Bradford Press
Price: \$14.95

Reviewer: Trevor Oakley

The book on the jacket, which illustrates a full 84 sets-up with disk drive and printer, says "An insider's advice on how you can earn extra cash". Well, it moonlights with me 64, and would say this book is a good guide to the opportunities available. The book isn't machine specific, but the 84 gets a mention as one of the cheapest machines suitable for serious work.

A range of money-earners are covered, from writing software to consulting, and I found the introduction on the value of recording and referring useful. Some of the facts quoted seem a bit dubious for maybe just out of date.

I wouldn't rely on this book alone to step into a lucrative part-time career, but it does provide a useful introduction.

As Terry Wagan would say "Don't give up your day job!"

C16 makes its play

Book: Commodore 16 Games Book

Authors: Cameron Duffy and Richard Woodford
Publisher: Melbourne House
Price: £5.95

Reviewer: Franjoir Singh

Could more be given where C16's day, there really doesn't seem to be much to write about this book.

Coming soon after the launch of the C16, when there's a great demand for games and little software on the market, this book caters for a wide variety of tastes. The program listings vary considerably: there are adventures, shoot-'em-ups, strategies and logic puzzles. If you have typing in listings, you'll be glad to hear that some of the routines are just forty lines long. Even better, Melbourne House has made

many of the listings, all of which are in Basic, available on a floppy disk (which sold separately).

The other personal problem with games listings is bugs. Melbourne House has included a checking routine in the book which should ensure that there aren't any problems of these kinds.

There are also other bonuses: a sprite routine, a joystick control utility and a menu program which will allow you to join two programs together. These will help you to develop your own programs.

Although some of the program explanations are a little brief, and it may take some time for beginners to figure out what they have to do, overall the book is very good, and I would recommend it to any C16 games enthusiast. Well done Melbourne House — simply speaking, if this book won't impress you, then what will?

Depressed market

Book: Business Programming on your Commodore

Author: Peter Jackson
Publisher: Phoenix Publishing Associates
Price: £7.95

Reviewer: Trevor Oakley

This book is aimed at sales and marketing managers who want to use their home computer for their daily work, without spending a fortune on software. Starting from the rudiments of Basic, the wide-eyed computer innocent is led through such delights as "graph plots" and "forecast" to the dizzy heights of "Sales Trend — The Sales Manager's Package".

The book doesn't actually appear to have been written for Commodore hardware but has been converted from some other machine — "with Mode 4 graphics, the 224 normally available for BASIC...".

My advice to Sales and Marketing Managers — save your money, time and effort and go out and buy some carefully chosen software packages.

Jack attack

Book: The Home Computer Wars

Author: Michael Tomczyk
Publisher: Web Saunders/Computer
Price: £7.95

Reviewer: Christine Dodder

This claims to be "an insider's account of Commodore and Jack Trammie", and maybe it is. For any home-micro-enthusiast this is fascinating — a chance to glimpse something of the workings and personalities of Commodore in the days of Jack Trammie and the Vic 20.

I found the chapters on the conception and birth of the Vic exciting — everything after that was an anticlimax, and I wouldn't be surprised if Tomczyk felt that too.

On Trammie, I found the book less satisfying. Everyone knows the story of how he built Commodore up from a typewriter parts company into a giant corporation, and everyone knows what happens in the end (they all resign or get fired). So instead of Trammie's more from Commodore to Atari coming at a hot time



the idea, it spent much of the last third of the book looking for reasons for the move.

Tomczyk, for four years Trammie's assistant, writes in a gleefully neo-American subject-matter, and doesn't manage to come out as a likeable character. He points the "business in war" metaphor at every opportunity, and overall it's not the kind of book which would have much to offer to the general reader, only to those who are determined to find out more about "the classic struggle" inside Commodore and between the company and arch-rivals like Texas Instruments and Atari.

Pay as you learn

Book: The Commodore of Payroll Book

Author: Roger Patterson
Publisher: IAW
Price: £15.95 / + disk or case, £5.75

Reviewer: Trevor Oakley

If you want to run the payroll for your business on a Commodore 64, then this book is for you.

What the book contains is program listings for a payroll system, details of how it works and a user manual which allows you to put the programs into operation. Details of how to modify the programs, for example, to use for monthly pay rather than weekly are included.

What the program listings are clear and easy to follow, I would recommend purchasing the disk or cassette, rather than typing in over 1000 lines of Basic. The disk and book together at about £25 are quite a bargain for a complete payroll system.

Practical filing

Book: Filing Systems and Databases for the Commodore 64

Authors: A. P. & D. J. Stephenson
Publisher: Collins
Price: £7.95

Reviewer: Trevor Oakley

For anybody who wants to produce a filing system in Basic, this is a book to guide you in the right direction.

Generally, I'm not in favour of books of program listings, but this one is not just that, more a helpful mixture of theory and sub-routines which you can use to produce a working system. Some machine code routines are included to speed up sorting.

Well worth reading to learn the principles of computer databases, as well as the practical programming aspects.

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Honeyed words



Chetah's speech synthesiser is a no-frills unit at a budget price. Nathan Grossetwiler assesses its chances and finds that the Sweet Talker has plenty to say for itself

AFTER OUR round-up of speech synthesisers in the April issue, most of you should be pretty clear on what these digital voice boxes can do and how they work. The Chetah's Sweet Talker doesn't hold any surprises in those fields, but it is surprisingly cheap.

Chetah's latest contribution to the kit hardware market comes in the same case as the B&E Intelligent Interface. It's a cartridge shape which plugs into the back of the kit, with a lead going into the audio-visual port so that the speech output comes out of your TV or monitor speaker.

The Sweet Talker's speech sounds very much like that of other similar systems — not very realistic, since there's no inflection possible. However, the garbling sounds most speech systems make have a charm all their own, so there are no complaints on that score.

Like most other systems, the Sweet Talker operates on a system of allophones. A sound generated by the 580 chip is put through a filter, and the filter modulated to

produce any of the sixty or so basic parts of English speech. These allophones can be combined through your programs into any word you choose — certainly a preferable method to having a fixed vocabulary, though intelligibility suffers.

Unfortunately the Sweet Talker isn't very user-friendly. For a start, the driving software isn't in ROM — you have to type it in, or load it from the cassette provided. Secondly, the Sweet Talker doesn't have any form of interpretation routine; you can't just type in English words, or even letters, you have to type in strings of numbers.

The manual gives the codes for each allophone and explains how to write Basic programs; for instance, to get the Sweet Talker to say "Chetah" you would use 10 DATA 58,19,31,31,15,0,1. These are the codes for the allophones CH, T, H, T, A, A, pause, and. It's a real pain to have to look up the code for each allophone, and certainly explains the user-resistance of real systems like the DA/Trouser/

Curah Speech 04, which has a language interpreter in ROM and can make a stab at any word you care to type in.

The Sweet Talker comes with a demo on the back of the tape, which gives some ideas as to how the unit's speech can be incorporated into your own Basic programs. However, there's no mention of using machine code.

The Sweet Talker doesn't appear to have any more facilities than the alternative basic — there aren't any plans for commercial software exploiting the device, so you may find it a bit of a dead end in that respect. However, if you just want to find out what speech systems are all about, and don't demand all the frills, the Sweet Talker may have something to say for itself. ■

Product: Chetah Sweet Talker
Model: CRM 66
Supplier: Chetah Marketing, 24 May Street, London EC3, 04-623 4908
Price: £24.95



Now you can use your Commodore 64 to write a letter or a report, to compile a mailing list or classify your record collection, to check your bank statement or sort out your family finances (and then translate them into colourful graphics) . . . all for just £5.95.

Quick to learn, easy to use, that's . . .

MINI OFFICE marks a long-awaited breakthrough in dramatically reducing the cost of personal computing.

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Never before has a word processor been sold for anything as low as £5.95. Not a database manager. Not a spreadsheet. Not a graphics program.

Yet Mini Office contains them all.

So how was it done?

It all started with a suggestion that we should prepare a package to give readers a gentle introduction to the kind of software that businesses were running on their computers.

At that stage there was no intention that it should be an ambitious package. Just a simple program that could be sold at a very low price.

We called in experts to

processing, database management, spreadsheets and graphics had been turned into a full scale suite of programs covering all four applications.

In fact the only part of the brief that remained was our original intention: that the package should be quick to learn and easy to use.

And despite all the extra sophistication that has been written into it, we decided that, as a tribute to our readers, the price should still be kept at the very low figure originally fixed.

How does Mini Office operate?

Using the **Word Processor** is simplicity itself. There are none of the cryptic coded instructions that had to be mastered by people learning the early word processors.

You start by selecting the size of type you prefer - either normal or double-size. The latter is a feature that you

people this could be the first time they can read out a perfectly typed letter without outside help.

Primary school teachers are also expected to make great

use of it again. It can also be printed out.

The **Database** program can be used to store a mass of information. It can be retrieved, in its entirety or just



figures on the spreadsheet can produce a bar chart . . .

use of the double-size function, both on the screen and on hard-copy printouts.

While you are using the word processor three useful pieces of information are displayed across the top of the screen.

They tell you how much time has elapsed since you started using it, the number of words you have written so far, and how many characters you can key in before the computer's memory is full.

At any time you can press a key which tells you your typing speed. This is a most useful function, and can play an important part in increasing your efficiency at the keyboard.

You can also decide the size of the margin, the line length and the tab positions. Text can be moved from one part of the document to another.

At any time you can preview the text to see how it would look when printed out.

As with all the other programs in Mini Office, your work can easily be saved and loaded when you want to use

the parts you require for a particular purpose, wherever you need it.

The operation is so simple that a useful database can be created in minutes rather than days - and you certainly don't need any computer experience to set it up.

The powerful search facility is very easy to use. You can search for a particular word or words or you can order a numeric search - such as telling the computer to find all the numbers greater or less than the one you provide.

You can carry out multiple sorts. For instance, if you have built up a mailing list containing a list of names, addresses, telephone numbers, occupations and ages you can ask the database to provide you with a list of teachers living in Liverpool whose ages range from 25 to 30.

One powerful option allows you to replace anything on the database without having to go through the whole lot making amendments yourself. You could, for instance, instruct it

A unique feature is the double size text option in both printer and edit mode - perfect for young children and people with poor vision.

The word processor - with double size characters

business software programming, tell them what we wanted and set back to await results.

What happened next was totally unexpected. For they all came back with ideas that were to considerably expand our original brief.

In the end what had been planned as little more than a beginners' guide to word

cannot find on any other word processor.

It is particularly suitable for the partially sighted - in many cases giving them their very first opportunity to use a word processor.

This means that you can use a micro to compose a letter, using the double-size mode, and then print it out using normal size type. For those

Now on the
Commodore 64



DATABASE SOFTWARE

to find each reference to "teacher" and replace it with "teacher".

The **Spreadsheet** is our version of the program that marked a milestone in business computing - VisiCalc.

It is often pointed out that this one program alone has helped to sell more personal computers than any other.

Certainly VisiCalc and its derivatives have never been shaken from their position at the top of the list of best-selling business programs.

Yet the concept is very simple - a giant worksheet of rows and columns, only part of which can be seen at any one time, into any position on the sheet you can put numbers, labels and mathematical formulae.

And when you enter any figure its effect ripples through the rest of the sheet, changing any totals as may be necessary.

The Mini Office version is ideal for home finance, provid-

ing you with an effortless means of keeping tabs on your income and expenditure - and enabling you to work out your own budget.

In our Spreadsheet program - as well as in the Database - we have provided



... or a pie chart

a sample file so that you can experiment with it before entering your own data.

One feature we have included which to our knowledge does not exist in any other spreadsheet is a warning device to prevent you

accidentally erasing formulae - a very useful precaution.

The **Graphics** program uses the standard business graphics - lines, bar and pie charts - in full colour. Which is something not always available on far more expensive graphics packages.

The program uses data you have already prepared on the spreadsheet. You have to identify which set of information you require to see in graphic form - such as by indicating which row or column - and then which of the graphs you require.

The graph is then automatically configured exactly as you require it. If you have suitable printer capable of

producing graphics you can also print out hard copies for a permanent record.

Because our original intention was to produce a package for people new to all these applications, we have produced a fully-detailed user to understand manual.

This 32 page free booklet gives clear instructions about how to use all four programs and in itself forms a complete introduction for first-time users.

If you want to start doing more with your micro than just playing games, this package is your ideal introduction to the four most popular applications for professional computers.

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 64 sound/video library.
 Any help £50 per set. Please
 contact: Mike, Master Computer
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 will run. Please write to Arthur,
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 to form a music library.

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 Quest, Coulburn, Aqueduct, 911 15,
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 for the IBM 64. Paul Hittinger,
 No. 6 Corry, Belfast, Co. Down,
 0688 584 584.

FM LOOKING for a Commodore
 64 owner to exchange program-
 ming details and software. I
 have over 40 programs. If you
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 line to: 273 6684 anytime after
 5pm. Ask for Jason.

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 (1541). Will swap for software for
 your drive. Have full of nearly
 800 titles. Write or phone to
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 64 Blank Disks to exchange
 cassettes, discs, files, manuals, music
 and graphics. Please 01-876-8884
 listed for Corry after 5pm.

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 Write Marky Cannon, 58 Great
 West Walk, Wotton, Kent. All
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CBM 64 games to swap. Many titles, please send list to: Nelson Bennett, Botolph Claydon, Suffolk, for Southwold, 5 Humberfield.

SWAP! South Adam's adventure game called Woodco Castle for any other South Adams adventure game for the VIC 20. Write to: Andrew Sanderson, 6 Theopole Road, Kirby Cross, or Triston-on-Sea Essex CO19 8LT.

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Basic pointers

I HAVE COME up against a problem using high resolution screens on the 64. The 16-bit screen memory in 64K up from the bottom of Basic, and my data for the screen seems to be lost, without even thinking of the rest of the program. Could you explain how to move the screen memory, or how to move the Basic pointer above 67?

J J Colver
Basingstoke

Photo
MOVE the start of Basic to \$4000 (16384) using POKE 41,1; POKE 44,44; POKE 64,64;NEXT and move the end of Basic to \$4000 (16384) by POKE 55,4; POKE 66,66; CLR. This will give you 24K available for Basic, the most possible unless your screen data is not put into RAM.

Hex into decimal

PLEASE COULD you tell me if the various listings in your magazine and others which contain hex in data statements, can be entered direct with a machine code monitor such as Zoom or Superzap? J Lee
MPPC 16

YES, YOU CAN enter hex hex values using a machine language monitor, then store the program on disk or cassette. The values in the data statements are normally the decimal equivalents of the hex values though, so you will have to convert them first unless a hex equivalent is given.

Character sets

I HAVE the same problem with both the Vic 20 and the C128 64. Could you tell me if there is a formula for working out how to point the screen RAM at the needed

character set? I also have a 18K RAM pack for the Vic, and though I have the Programmer's Reference Guide for both machines none of the POKEs gives me how to work.

DCJ Pilley
London



TO SET the character definition pointer where 'X' = 0 to 7, you should use POKE 53272, (POKE 53271,X) AND 40400 275. For the Vic 20, A 16K VIC program gets the character set of 57048, and the screen is at 57048. Run this program in upper case mode:
@ FOR I=0 TO 31: POKE 7148 + I, PEEK (57048 + I) : NEXT
@ POKE (568 + 256 * POKE 648,20 - POKE (5686,146) : POKE 56,7168 - 256 * CLR

This copies 64 characters from the ROM character set to 57148 onwards. Now try to direct mode (last page — don't worry about the missing cursor):
FOR I=0 TO 7: POKE 7148 + I, I : NEXT

All the A's will have changed into rubbish, and if you press an A the same thing will be displayed. This is just to show that the routine works!

No dice with disk

I OWN A Commodore 64 and have recently been given a hard-drive Technical Products Corp. DMF2 8" Dual disk drive. Are you able to give me any advice on a suitable interface, and is there a distributor in this country who I can contact for general advice?

P. Nicholls
D. Stephens
Newlyth

I DON'T think that you will be able to use such a drive with the 64, and you will certainly

not be able to use commercial software. CBM drives are "intelligent", that is to say they have ROM or RAM on microprocessors built-in, which means that the computer can often proceed with a program while the disk does its own processing. The 64 initiates commands which are recognised by the disk drive. To use your drive you would need some kind of "intelligent" interface, to simulate the 64's 64 DMG responses — and there's no such product on the market.

Graphics gripe

I AM WORRIED on an adventure program on the 64, and I have a Koolha Pad with which I have designed a few pictures for the game. Each picture takes up so much memory that there isn't enough room. However, games like March of the Penguins have a better way of storing such pictures. Can you suggest any books which will help me with such graphical problems?
K G Zepher
Boscon
Plym

I CAN recommend three books to help you. The first is Graphics Art on the 64, by Eric Allen, published by Sunburst at £5.95. The second is Programming the 64 by Martin Wood, costing £14.99. Sunburst also publishes Commodore 64 Advantures by Mike Carter, also at £5.95, which is a guide to writing and plotting adventure programs.

The answer to your problem of memory for screens is to use fast loading from disk, during the program, since you can store many screens on a single disk.

Double height

I HAD a 64 for some time and have recently started programming. Can you tell me how to get double height letters in Basic, and

recommended a good book for learning further programming?

A. Taylor
Hemel
Herts

THERE ARE three ways of programming double height characters. First, you can create your own set-defined character set. Secondly, you can use options for your characters which can be expanded in the vertical plane using POKE 53271,1. Thirdly, you can copy the character set information from the ROM, but use the data repeated four times for more for larger characters.

You should buy the Commodore 64 Programmer's Reference Guide, published by Commodore themselves, which should explain the methods necessary and give you pointers on many other programming subjects. There are also dozens of books available with titles like "Starting Basic Programming on the Commodore 64", most of which cover the same ground. Pick one written in a style which suits you, and work through it in conjunction with the Reference Guide.

White noise

CAN YOU advise me how to get the noise waveform on video out of the 64's SID chip? I haven't been able to get anything except what sounds like a better form of the triangle waveform. Could there be something wrong with my sound chip? Also, is there a printer for the 64 at less than £100?

G. Adward
Maida Wiltshire
Devon

TO ACTIVATE noise for video I you should POKE 54276,128. There are some algorithms in the PRU which may lead to confusion on this point.

The only 64-compatible printer under £100 is the Alphamax 31, which prints on heat-sensitive paper, although you should be able to find a 320 printer/plotter around £80 if that would satisfy your requirements.

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last day of July. Winners will be announced in the September issue. Normal competition rules apply.

The winners of the Competition in the May issue are CJ Down of Dorset, who receives the Epson RX80 and *Comprint* software from Micro-Cast Systems; and P Martin, Cottingham; PJ Palmer, Sutton; J McLeod, York; AJP Turner, Edinburgh; and N Young, Coventry, who receive *Comprint* interfaces plus £25 discount vouchers against the cost of any Epson printer from Chromascan.

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