

CAVERN OF MORDIA

WHERE FANTASY MEETS COMPUTER SCIENCE

by Stephanie Blackett

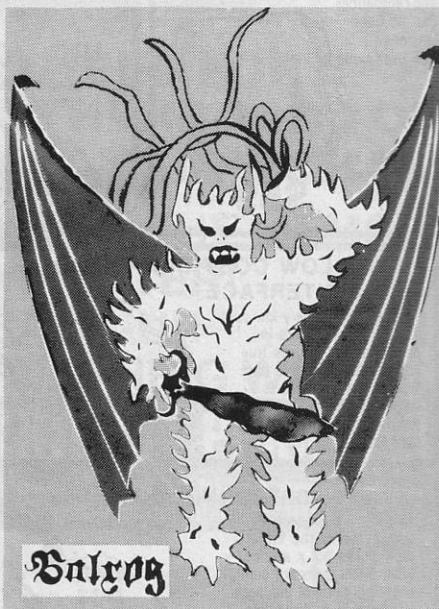
"YOU ARE dead", the screen said. It had taken three days, but I had succumbed at last to the hazards in the sinister Caverns of Mordia.

J.R.R. Tolkien's *The Lord of the Rings* has inspired two University of New South Wales scientists to create a fantasy war game for microcomputers called *The Caverns of Mordia*, a game as sophisticated and brain-teasing as *Space Invaders* is artless and mind-tenderising, and just as addictive.

The game is a lot of fun. I am witness to grown-ups transfixed before the cathode ray tube for hours, days, even weeks, defying Sharnoscet — the Evil Spirit of Mordia — and his monstrous minions.

One does need a home computer, preferably an Apple II, to actually play the game. But the game's manual is an art work in its own right. It is here that the authors, Hans Coster and Tony D'Assumpcao, have almost beaten Tolkien at his own game: fantasy.

Dr Coster, an associate professor of physics, developed the idea, wrote and endlessly elaborated and refined the program — and drew some of the illustrations. Mr D'Assumpcao did most of the drawings and printing. Together they constructed the monsters, hazards, goodies, baddies, equipment and weapons — and their context and histories.



The parts form a story, and a quest:

The adventurer must deliver the Orb of Power, on behalf of the mighty wizard Pallandoin, to beautiful Lady Elleda, who dwells in the mystical land of Locklorien.

Locklorien is under siege by the evil spirit Sharnoscet and will fall unless the orb reaches Lady Elleda.

To reach Locklorien the adventurer must penetrate Sharnoscet's lair, the caverns of Mordia, where he faces many monsters and hazards.

The game had me on tenterhooks. The program simulates each monster, hazard

and combat mathematically. The game is so multibranched that it was impossible for me to predict even the probable situation very far ahead. The program is so complex that it only just fits into the Apple microcomputer.

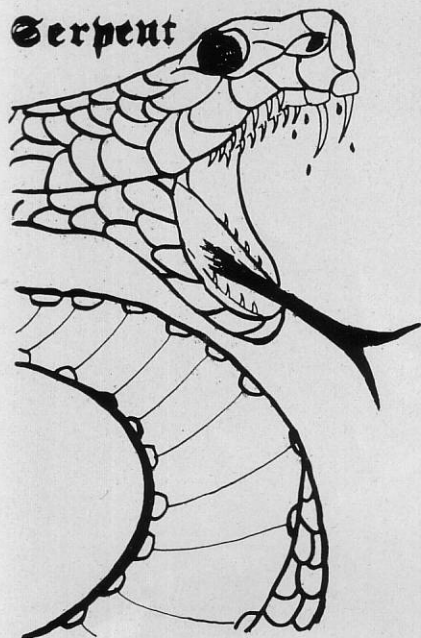
Before entering Mordia, the adventurer is given a net for trapping dragons, a dagger, the Orb of Power, the magic staff, the wand and a lamp. With gold, he can buy at the dwarf trading centres (near the entrance) a gas mask, the double-headed sword (magic) and lymphas (a magic food).

He will eventually find, if he stays alive long enough, flares to blind adversaries, the charm ring, more gold, the dragon ocular for assessing the strength and agility of dragons, and the mithril armour.

Powers Of The Magic Staff

Each piece of equipment has a special use, depending on the monsters and hazards confronted; these are often multiple and interacting. The magic staff, for example, is an artifact of the Great Ones of old: "Although it looks to be jet black at first glance, the staff is not really black as such but more a solid hole into which nothing enters and from which nothing escapes.

"Essentially evil, the staff is also very intelligent. A powerful spell has been put on this prince of the night by Pallandoin, so it is forced to aid you against its will.



However, it can defy the spell on occasion, and if you invoke its power it may lash out against you, thereby causing you considerable damage. If the spell put on it by Pallandoin holds, however, it will eliminate all hazards and monsters in the room."

The mithril armour is made from "the most precious of all metals. No samples of this rare element can be found today, but it is thought that it is a very pure form of platinum crystals which only the elves knew how to work into items of incredible lightness and strength.

"Although never to be found in abundance, there were enough deposits of mithril in the caverns of Mordia to entice the greedy dwarves into mining them. Indeed mithril and gold mining were the mainstay of the economy during the prosperous, if brief, dynasty of the dwarves."

In the caverns live many monsters under the influence of Sharnoscet. As the adventurer descends deeper, the evil grows stronger and the monsters more menacing. Some monsters are found at all levels, their powers intensifying with depth; others of ever greater perniciousness appear at particular levels and beyond.

In the caverns the adventurer confronts orcs, who are belligerent but cowardly; dragons, who are powerful and can strike and breathe fire; trolls, who guard the mithril armour; vampire bats which move around, generally in swarms; balrogs, the

ultimate monster; demons, who curse you and sap your agility and strength; Araneida, a giant spider which lives in tunnels; cave goblins, who try to steal your dragon ocular; and serpents, which bite when disturbed.

With each encounter the adventurer acquires experience, which can be exchanged for strength and agility. The defeat of the monster depends on, and also adds to, experience.

Each species of monster has special characteristics which define its aggressiveness, combat ability, mode of attack, tenacity, strength and agility. The computer simulates these characteristics mathematically.

When a monster is encountered, there can be a variety of outcomes depending on whether the adventurer decides to attack or run, who strikes the first blow, the monster's characteristics, his present constitution, the weapon the adventurer chooses to fight with, the adventurer's own strength and agility, and the equipment he has acquired.

"In combat the dragon frequently strikes with his long tail to deliver a first blow. His most frightening feature, however, is his ability to breathe fire when provoked. It is precisely this devastating power of the dragons that enabled them finally to oust the dwarves from the caverns of Mordia. Fighting with their traditional axes, the dwarves could not cope with the long-reach fire-breathing attacks."

Indication Of Suicidal Tendencies

Balrogs are the most pernicious monsters. Engaging a balrog in combat without enough experience, strength, agility and the right equipment "is a sure indicator of suicidal tendencies on your part".

Cave goblins, however, are a complete change of pace:

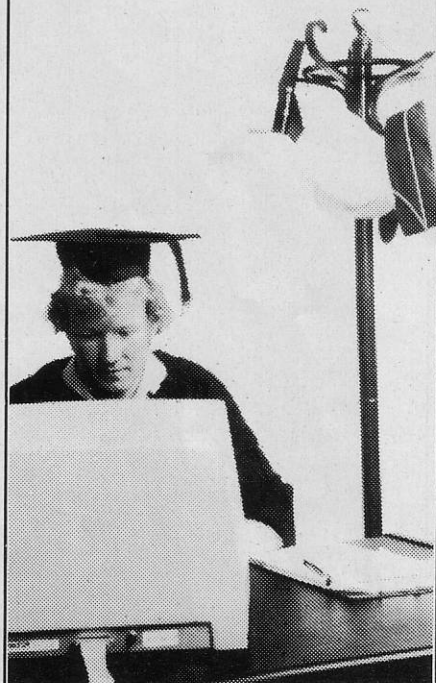
"These rather anaemic creatures are the descendants of the firece goblins that were the earliest known inhabitants of the caverns of Mordia."

The goblins were driven deeper into the caverns when the dwarves began mining mithril. Many were slain and more died of starvation.

The last goblin king used his dwindling magic power to forge the dragon ocular, which allows the adventurer to determine the constitution of any dragon he meets.

"The few cave goblins that remain, their physical and mental strength greatly diminished by generations of harsh conditions and inbreeding, do not pose a direct

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threat to adventurers. However, stealth and furtiveness make up for what they lack in strength.

The cave goblins are undetectable because they are nearly invisible and move silently. They also have excellent senses of smell and hearing. Their eyes can see in the infra red, so they can detect others by their body heat; being cold blooded, they are not themselves subject to detection by this means."

They are master pickpockets. "They will always seek to retrieve and hide the dragon ocular when it is discovered. They can therefore indirectly hasten the end of an adventurer foolhardy enough to enter the sinister caverns of Mordia."

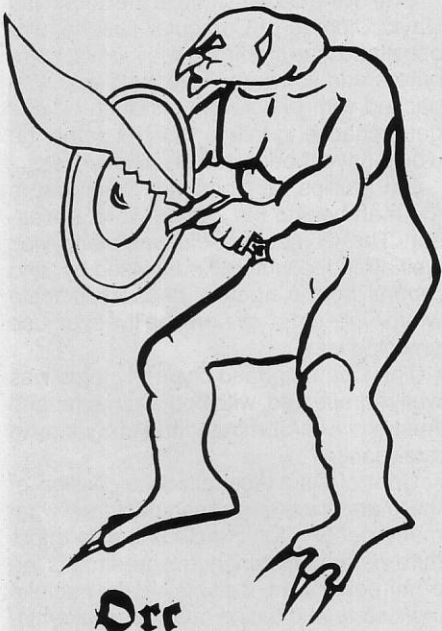
The adventurer faces other hazards: poisonous gas, holes in the ground, draughts that blow his lamp out, tremors and giant spider webs.

The skill in the game lies in making the right decision — or at least a safe decision — in each predicament. The choice is so wide and the ramifications of each decision so far-reaching that the game has the feel of chess, with fewer restrictions and more imaginative alternatives but less vision of what may lie ahead.

Dr Coster wrote the original program for fun, with his children, Adelle, 12, and Leonard, 13, in mind. The family is very fond of Tolkien.

He was one of the first people in Australia to have a personal Apple II. He bought it in 1978 to do scientific work at home. He also used these machines in his laboratory and realised their amazing capabilities.

The programs being written for the Apple II were not using it to its capacity, as seen from the gymnastics he could get it to perform in his lab.



More Than Frivolous

It became a challenge then to explore its talent for fun and games.

And he had a higher-level motive: computer games are far from mere frivolous entertainment, he said. They have contributed to science.

"In the past few years, software know-how has been accelerated by game playing programs involving strategic concepts which can be applied to more serious scientific work.

"Game playing has been an incentive for research in software which parallels the use of computers in scientific experiments."

Computer hardware has become smaller and cheaper, but the real boom in the application of computers to science and to games, Dr Coster says, has taken place in the software, which has outpaced the hardware.

"The Apple hasn't changed much in the last three or four years, but what can be done with it has changed enormously."

Over a year the adventure of Mordia was elaborated, becoming more and more complex in the integration of events. Friends — adult and child — flew in and out of the Coster house like blowflies to play in Mordia, some settling in front of the Apple for days or longer before they flew away.

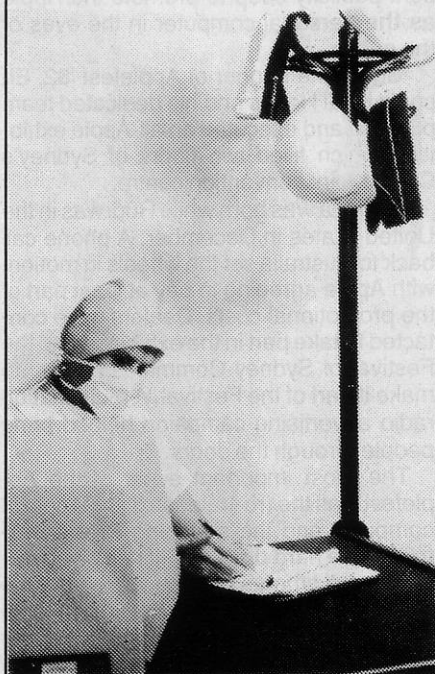
Copies of the early program "floated around" at the University of New South Wales, Dr Coster said. His students played it in the lab whenever they thought they could get away with it. It even made its way into schools. Leonard's maths teacher had a copy he'd received from someone in Liverpool.

Mr D'Assumpcao, a keen adventurer, joined Dr Coster in the venture at this point, applying his talent for fantasy and artwork to help produce the manual. And the program became even more complex.

A computer shop then suggested Dr Coster sell the program and manual as a package to a commercial software house.

The game has been on sale commercially in Sydney for only a few months and costs \$59 for the booklet and disk. The booklet is printed on bright tangerine paper which cannot be copied by regular photocopying machines, while the program itself has an elaborate anti-copying formula. □

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A FEST OF APPLES

NATIONAL Apple distributor Electronic Concepts (Elcon) has pulled off a magnificent publicity coup to promote the Apple as **the** personal computer in the eyes of the public.

Under the banner of Applefest '82, Elcon's Rudi Hoess and his dedicated team planned and executed an all-Apple exhibition which filled two floors of Sydney's Centrepont convention centre.

The idea was born while Rudi was in the United States in December. A phone call back to Australia set the wheels in motion, with Apple agreeing to pay at least part of the promotional costs. Dealers were contacted to take part in the exhibition and the Festival of Sydney Committee agreed to make it part of the Festival. A multi-station radio advertising campaign helped bring people through the doors.

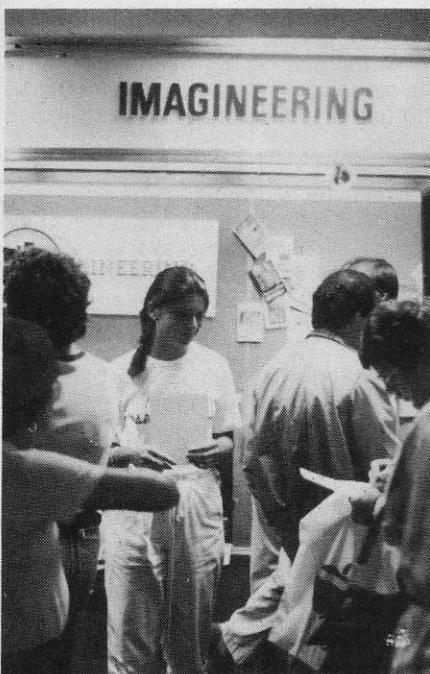
The most important event of the Applefest was the (re-)release of the Apple III computer and the matching Profile five-megabyte hard disk. The III has given Apple a hard time as it strove to iron out the machine's bugs, but according to Apple executive Phil Roybal (here for the show) the problems have been solved.

In the meantime, he said, Apple has been shipping IIIs to software developers and others for more than a year to ensure the software vacuum would be filled.

The Apple III, which we first described in *Your Computer* last May, is designed specifically for the business and professional user. Although it uses the same microprocessor as the II (and can run Apple II software in an emulation mode), it can handle much more memory - up to 256 Kbytes. It has a full keyboard with a numeric keypad and an integrated disk drive.

The III uses an 80 character by 24 line display, a significant improvement over the II. The software is much improved, too, with a proper disk operating system called SOS (Sophisticated Operating System) and Business BASIC, Visicalc III, the Apple Writer III word processing package and other options.

But back to Applefest. Almost 40 exhibitors took part, all selling either Apples or products related to the Apple.



Electronic Concepts was obviously a major exhibitor, with the Apple II, Apple III and even a genuine original Apple I on display (complete with optional cassette interface!).

Among the more interesting of Elcon's products was a 6809 processor card for the Apple, allowing the machine to run a wide range of software including Micro-ware's OS/9, which bears a family resemblance to Unix.

Ampec Electronics displayed the Itoh range of printers, including the 8510, which was reviewed in the December issue. Ampec's Stead Denton recently gave us a preview of some forthcoming machines from Itoh, and we can tell you there is some interesting machinery coming down the track.

ACS Discovers The Micro

The Australian Computer Society was there, busily selling copies of its Small Business Computer Guide. It's good to see that the ACS realises micros exist; but its whole structure will have to change

radically before it becomes any use to the micro user.

Butterworths and the ANZ Book Company were there with their ranges of books, including Sybex and software from Hayden.

Case Computer Systems exhibited its new seven-colour printer. This is a magnificent little device which will run at up to 125 characters per second, is ideal for business graphics, computer aided design and even financial analysis (to see where you go in the red). Priced at just under \$2000, it is sure to be a winner.

City Personal Computers carried off something of a coup. Owner Peter Hatcher had just returned from England with stocks of a new line of peripheral cards from Digitek, including a cheaper PAL colour card with built-in RF modulator and obviously superior reproduction quality.

Another star on the CPC stand was the Multiport — stocks of this new extension adapter for the Apple games port disappeared during the show, and most sales were to dealers! The Multiport was locally designed and built, by YC contributor Bref Ruhl.

One of the busiest men at the show was David Diprose of Computer Galerie, whose stand was crammed with books, computers and software. The stand was also packed with people, so although I didn't get a chance to talk to David, I gather he would have thought the show a success.

Ian Phillips, of Computer Solutions, is the man behind the Zardax word processor. The Computer Solutions stand was well attended whenever I walked by, and reports from a number of users indicate why. One chap swears he'll never use anything else.

The Computerland chain of stores was well represented, with both Computerland Australia and Computerland of Sydney in attendance.

Control Data Australia is a division of the giant mainframe manufacturer; what many people don't know is it also offers third-party maintenance agreements on other equipment. It displayed the use of a logic state and timing analyser in examin-

ing the bus signals of an Apple.

The NSW Department of Education put on a display of how Apples are used in the classroom.

Electromedical Engineering displayed the Sendata range of acoustic couplers (reviewed in our September issue). If you don't have an acoustic coupler on your computer, it's something you ought to seriously consider.

Tasman Turtle Popular

One of the most popular exhibits was the Tasman Turtle display of Flexible Systems. The turtle is a small dome-shaped robot, attached to an Apple via an umbilical cable. It can move around, turn, beep and raise and lower a pen. By selectively moving and lowering the pen, the turtle can draw geometric patterns. Programmed in a simple language, the turtle is a fascinating introduction to computers.

Global Computers, of North Sydney, had the Padmede accounting system on its stand. At last we are starting to see useable accounting packages for small computer systems.

Jodi Rich, of Imagineering, had an innovative way of getting his company's name around. He sold T-shirts on the stand, but offered a special price to anyone who would change into one and wear it around the show! Imagineering has a huge range of software for the Apple, including both games and serious stuff.

Roger Walker, of Intelligence Australia,

was demonstrating the MicroModeller financial analysis package, which is reviewed elsewhere in this issue.

Printer manufacturers were particularly well represented: Diablo from Mitsui Computer Systems, the NEC Spinwriter from NEC Information Systems, Olympia and Olivetti electronic typewriters and the Epson range from Warburton Franki were all on display.

Brookvale-based Orbital Music's stand was easy to find — as long as you were within earshot. Its music synthesizer system was generating everything from symphonic string tones to farmyard animal noises!

Six-S Business Advisory demonstrated its business, accounting and word processing packages. As satisfied users of Six-S software, we can attest to the quality of the accounting system; we hear the word processing pack for the Apple III is a ripper!

Zenith Education Software provided demonstrations of its educational courseware, which is finding wider acceptance daily in Australian schools.

Harry Harper, of Zofarry Enterprises, demonstrated the latest version of his Vision-80 video card — and it looked really smooth; we tested its communications features by logging on to the Mi-Computer Club Bulletin Board.

Among other interesting displays were those by NSW Institute of Technology School of accounting, the University of NSW, and the Spastic Centre of NSW. □

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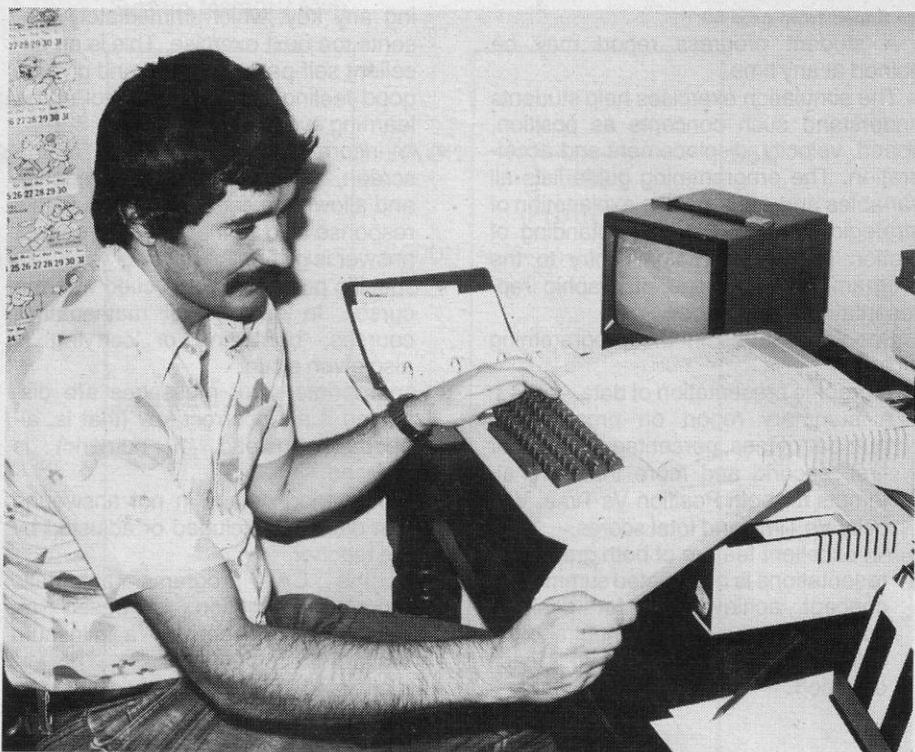
Vector computers can be used for many different applications. Engineers, are using Vector computers for structural design and analysis, word processing and accounts. The University of Sydney have developed a suite of engineering software to run on Vector computers for the engineer. Vector computers are designed to help people. Let Vector Help You.

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War games master Roger Keating at work.

The Desk-Top General

WARGAMES often change the character of the people playing them, Roger Keating said, as he explained what he does for a living.

"Their involvement becomes so intense that they take on the characteristics related to the strategy needed to win.

"For example, in the game Diplomacy, if you're Italy you're non-aggressive because that's the only way Italy can win. If you're Russia or Turkey, you pick someone to be friends with, to serve your own

purposes, but you're basically aggressive".

Roger Keating, 32, works at home in Waverley, Sydney, creating wargames full-time for Apple II microcomputers.

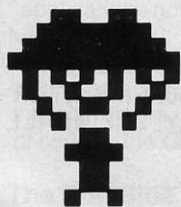
His games are now produced and marketed by an American company, Strategic Simulations Incorporated. They are also sold in Australia — imported from the United States.

Mr Keating used to be a high school mathematics teacher with a penchant for computing. He came to Australia from New Zealand nearly five years ago, taught at Cranbrook School for four years and resigned when he realised he could make a living from his 12-years-old hobby.

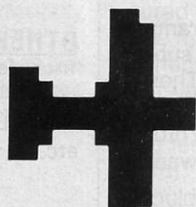
It is no coincidence Roger Keating was an A-grade chess player in New Zealand. It was from chess that his interest in wargames developed.

He has devised three games so far, with a fourth gestating. Each is far more complex than the one before it, reflecting his own development, he says, as he incorporates in each new game what he has learned from the previous one.

His first game, Conflict, is played solitaire. It is "A company-level simulation of a battle between a modern combined



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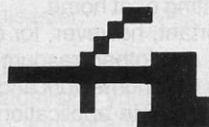
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arms force a well-equipped rebel force," says its rule book.

The second game, Operation Apocalypse, can be played by one or two people in about three hours. It is "an operational-level game made up of four scenarios" each representing a battle on the Western Front between the Allied and German forces in 1944-45.

The third game, Southern Command, for one or two players, was reviewed in YC in January. It is a simulation of the 1973 Yom Kippur War fought between Israel and Egypt in the Sinai; and is historically accurate.

"By playing the game you come to realise what really went on in that battle" Roger Keating said.

He is interested in how Jews and Arabs will react to Southern Command. He explained that the game is carefully balanced so it is skill and not program bias which produces victory for either side.

Friends have told him they think the game is weighted in Israel's favour. Not so, he says.

"I like to play Egypt. The game is programmed to bring down the aggressive player; the computer assumes he doesn't know what he's doing. People who play Israel are usually too aggressive. The people who play Egypt have more chance of winning if they aren't aggressive. The program favours the person who sits back and waits."

The Game — Counter-Attacks

A wargame player must learn to modify his behaviour, Mr Keating says. All his games are ready with a counter-attack when the computer sees aggression based on weakness and not on sound strategy and tactics.

"The more you know about war," he said, "the more you realise that the intelligence of the people in control — the generals and politicians — is just ordinary."

It is important to Roger Keating to know about war. It is a case of facing the reality of today's world.

He disagrees with the arguments of both pacifists and warmongers.

"Pacifist ideals tend to lead to war. They produce a vulnerability that is attractive to a power like the Soviet Union."

Some people turn off as soon as he mentions his wargames. They have not thought things through, he says. They don't want to know.

If I didn't know about war it would drive me crazy," he explained.

The warmongers, including many wargame enthusiasts, expect him to be gungho for war. These are the people who say it would do young people good to go to war — to toughen them up.

They don't know what's real either, Roger Keating says.

Defence spending is vital insurance

against war, he believes. Western countries should spend all they can; otherwise the world won't be here for solutions to be found to all the other social problems.

It is nuclear weapons development that has prevented a large-scale war since World War II.

The Value of Wargames

The US Army knows the value of wargames, he says. He showed me one which he said cost millions of dollars to develop. Some games have Soviet doctrine programmed into them to predict how the Soviet Army would respond in different situations.

"To make a living from computer wargames you must have access to the

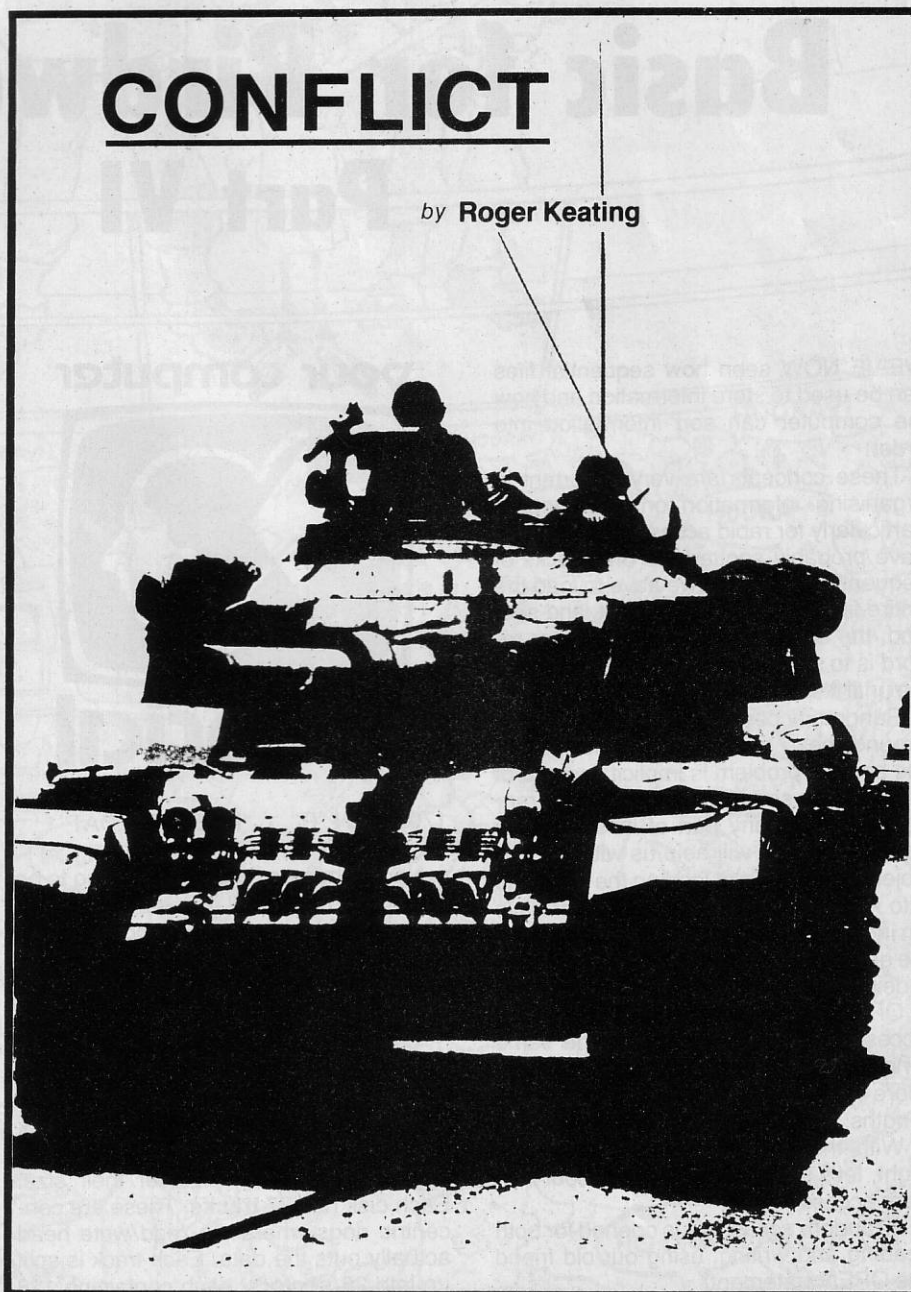
US markets," Mr Keating said. "Only about three companies in the world are producing the same sort of thing I am." He is hoping for a chance to live in the US because the game scene in Australia is moving too slowly. It is developing fast in America.

Keating says he is often tempted to write the odd funny comment into his programs.

"But it doesn't go across," he said. "You don't joke in wargames; it doesn't pay to be funny."

What does one pay for his games? Conflict costs \$40, Operation Apocalypse \$60 and Southern Command \$45.

"Forty dollars is about the right price. People will take money out of their wallets and buy the game — and it covers costs nicely. Sixty dollars is too much." he said. □



Sandys Revisits Sandy's



Dramatic changes in speed, improved documentation, refinements in display, new mailing list sort capabilities, postal group sort and additional printer commands — they're the updates one of Australia's most active programmers, James 'Sandy' Donald, has made to his Apple word processor since we first looked at it. Peter Sandys, who only wishes he was related, examined it...

THE WORD PROCESSING market for the Apple has become increasingly competitive.

There are in excess of 30 programs available, some of which, like WordStar and Spellbinder, require major changes to your hardware — changes which add considerably to the cost of your equipment. While the power of these programs is not in dispute, some of the lower cost packages are more than sufficient for everyday word processing.

Of all the packages I have tried for the Apple, there are only three on my short list — Screenwriter II, Zardax, and Sandy's.

It is significant that the latter two are Australian programs, and I'm not being influenced by national pride — these two have by far the best features of any word processor. What of Screenwriter II? Its main advantages are the software-developed 70 column display, meaning it is not necessary to purchase additional hardware. However when it comes to printing out your document the change

over from the editor to the run off section is extremely slow. Also the editor can be slow in the insert mode.

Zardax I reviewed last month and found it extremely easy to use and exceptionally well documented. I will not repeat myself on the program in this article.

The first major difference you notice with Sandy's word processor is the documentation. James Donald (yes, he is the author, not me) has rewritten the manual and provided a padded brown binder.

The improvement in presentation is at least 200 percent. It is easier to read and gives a greater attention to details and examples. This was one of the biggest criticisms of the program from owners of older versions, and from intending purchasers who felt that if the manual was that bad the program would be also.

However, even though the manual has been improved it has only reached the stage where it should have been when the program was first issued. It has yet to reach the minimum standard expected of a word processor today. There is also an error on the summary card which could make things difficult for a new owner — the control-W command is wrongly labelled as control-up arrow.

It's a bit like Ford introducing a new Falcon which has twice the economy and not bothering to polish the body before the advertising launch.

The only consolation is that obviously James has decided that, because of this limitation, he is still only going to market the program at \$195. With my background in marketing I am not really convinced that this is wise especially as the product itself has improved dramatically.

Faster Than A Speeding FDOS!

The major change to Sandy's is the speed of loading of the program and text files. In a short test I was able to load 16K of a document in four seconds — under the old Sandy's this took 90 seconds! Saving of a program takes slightly longer.

This speedup saves considerable time and effectively increases the power of the program. One previous feature that was handy, the scratch file for large documents, was cumbersome because of the time to load a file. In my test the new version took only 45 seconds to load a 100K document. This one feature in itself is a major argument in favour of Sandy's. For professional people it is essential to increase the speed of loading.

The next change is in the display. The program now has word wrap-around. I found this feature difficult, even annoying, at first but I have now adjusted to its effects and find it quite useful. James has also inserted visible carriage returns into the 40-column version of the program.

The scrolling effect is also different; it seems jump more than before but is faster. I was always impressed by the smoothness of the screen display but this seems to be a casualty of this speeded up scrolling.

The delete-a-line key has a click added to it so that you are more conscious that you are deleting text. This is a nice refinement.

One final thing changed in the editing mode is the control-N and control-V which previously moved up a paragraph or down a paragraph. These have now been modified to move up and down a line. This has been a welcome addition especially for

editing as the previous commands jumped too far and then you seemed to take forever to reach the word or letter you wished to correct.

Mailing Sorts

Sandy's always had a mailer program so that you could insert details into a form letter, a very nice 'free' feature. The one thing that it lacked was the ability to sort this list.

Quietly, around the end of last year (or maybe the beginning of this — it was so quiet) the ability to sort your mailing list was added. I have not tried it out but the manual states you can sort any field into alphabetical order. This then gives you the ability to select blocks of your data to selectively mail without having to use a separate program as in the past.

When sorted the new file is saved with the mail-list name and suffix .sortN where N is the number of the field you sorted the list under. Linked with this is a Postal Group Sort, which will sort a mailing list into the complex NPSP (National Pre-Sorting Plan) postcode order to suit Australia Post. Mass mailings qualifying for bulk discounts need to be presented in this order, as do Category B publications such as newsletters and magazines.

The program has new printer control commands: .SPACE, which can change the spacing of characters in a document;

Software Report Card

Program:	Sandy's Word Processor			
Made By:	Wyland Pty Ltd, Sydney			
Useful for:	Word Processing			
Hardware Req'd:	Apple II			
Ratings:	excellent	very good	good	poor
Documentation				✓
Ease of Use		✓		
Speed	✓			
Functionality	✓			
Support		✓		
Value-for-money	✓			
Extras included:	Mailer, sort, postal group sort			
Price:	\$195			
Review copy from:	City Personal Computers, Sydney.			

.HEADER, which inserts a heading at the top of each document page; and .PAGE No, which sets the page number for the next page. This can be used in conjunction with the .HEADER command.

In summary I am suitably impressed

and believe this word processor, although lacking the polish of presentation of other programs, is exceptional value and worth persevering through the somewhat spartan (although much improved) documentation. ☐

Level 2 Rom ASSEMBLY LANGUAGE TOOLKIT

Interested in writing machine language programs for the TRS-80 Model I or III or the System 80? Whether you are a beginner or an expert a Level 2 ROM Assembly Language Toolkit will save you hours of work and frustration.

The 'Toolkit' Manual
Expert Edwin Paay produced this Rom reference manual. It catalogues, describes and cross-references useful and useable Rom routines that are easily incorporated into your own machine language or BASIC programs.

The 'Toolkit' Program
DBUG — distributed on cassette and

able to be used from disk or cassette — is a machine-language disassembling debugging program to speed up your own machine-language programming. Invaluable!

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THE Home Accountant

By Peter Sandys

WITH A computer taking pride of place in my study (oops, sorry dear — now the nursery) my financial affairs definitely need managing. In the good old (pre-computer) days when I had money to burn there was no need to keep a check on where or what I spent it on.

Alas, things are different, I have greater need now to keep track of my finances. So I turned to my trusty slave to provide the answers.

I was helped along the way by developing a model on my trusty Visicalc program. I spent hours typing in each day of the week, a column for outgoings, a column for incomings and a column for description. The model would total the difference and subtract it from balance left in the bank. If I made two payments in a day I cheated and entered one a day earlier or later depending on space. I used it for a month and then I gave it away.

Next on the scene was Apple's Personal Finance Manager. This was a great improvement as I was also able to set budgets for expenses.

However, it lacked one fundamental item, the ability to record details of cash payments. So I had to arm myself with a series of deposit forms (courtesy of my local bank) and use these as fake cheques and record these on the system. Also there was no way I could record my savings at the building society. This I had to lump with my cheque account and at reconciliation time remember to add together the balance in the cheque account to the savings and cash. This was fraught with danger as my maths is not so crash hot.

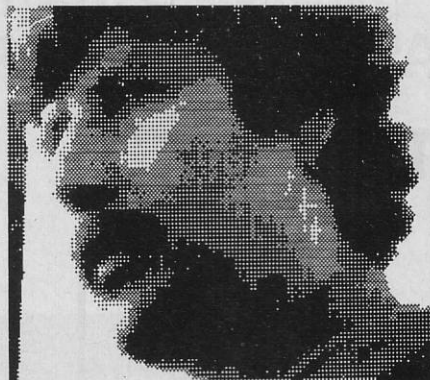
Finally I was given The Home Accountant which, in case you were wondering, is what this article is all about.

The program is designed to help you keep track of all your income, expenditure, assets and liabilities and print out reports. It comes in a handsome padded binder and is well documented. It requires only one disk drive but two drives save you having to swap disks.

The Home Accountant has a number of very powerful features. It allows you to keep up to five separate cheque accounts which can be linked to one common budget. As well you can have five separate cash accounts.

This feature is important for professional people who want to keep certain accounts separate from others. On the same point it is also possible to flag expenditure for taxation purposes.

Another feature of the program is that if



you use a credit card the system allows for keeping a record of transactions and hence the balance outstanding on that card. When you write a cheque (or cash) to pay the credit card account the system will decrease the amount of your balance on both without the need for a double entry. You can also allow for regular periodic payments.

When you first start the relevant steps you need to take are highlighted by the program. If you try to skip a step it will not allow you to, until you have created a cheque account and one cash account. When you create any category you have the option of allowing for a projected figure for any month thus creating a budget. The budget can be altered by a transaction or by an edit module.

Furthermore on the creation of accounts you can have five categories — assets, liabilities, credit cards, income and expenditure. You are limited to 100 individual sub headings under these categories.

When you enter a transaction it is stored with eight fields. Date, Check Number, Paid to, Amount, Memo, Category, Tax, Cleared.

The Home Accountant manages this differently to Personal Finance Manager, in that these entries are listed down the screen and only one entry is visible on the screen at any time. PFM permits you to see more than 10 entries on the screen by using columns. PFM's method would be superior except that with the 40 column screen the amount of information you can enter for each field is limited.

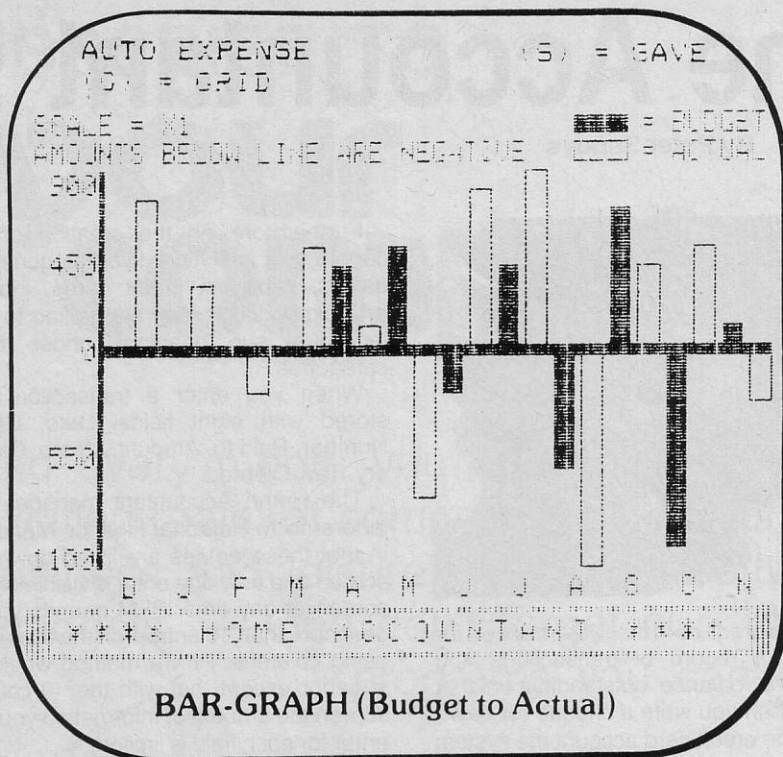
Some nice features of the Home Accountants entry routine are:

THE SPLIT TRANSACTION: With this you can use one cheque payment for multiple accounts. Similarly you can do the same for cash or credit cards.

CATEGORY SEARCH: The program lets you enter the beginning letter of a category and then search through every category until you find the right one to classify the entry. This is invaluable for forgetful (or disorganised) people. Also, if you have a hardcopy listing of the categories you can enter the number of

Software Report Card

Program:	Home Accountant			
Made By:	Continental Software			
Useful for:	Home, Small Business, Professionals			
Hardware Req'd:	Apple II (Printer Preferable)			
Ratings:	excellent	very good	good	poor
Documentation		✓		
Ease of Use		✓		
Speed			✓	
Functionality	✓			
Support	✓			
Value-for-money	✓			
Extras included:	N/A			
Price:	\$94			
Review copy from:	Imagineering			



the category and the program will list the name.

PERIODIC PAYMENTS. It is possible to set up to five automatic transactions. As soon as you initialise a month these are posted.

Reports And Graphs

The program generates a large number of reports and will even print out cheques.

The reports can be printed on almost any field and may be specific to that field (for example, all cheques paid for rent or to a certain party).

Other reports include year's budget, or actual; balance sheet; net worth statement; income and expense summary; category listing; comparative balance sheet (current v previous month); comparative income and expense; and credit card and cash activity reports.

The graphs can be printed if you have a graphics printer. These are bar and line graphs, and trend analysis. If using a colour monitor these can be graphed in colour.

Is It Australianised?

Yes and no. Imagineering has arranged for the date to be changed so that our convention of day first is accepted, and reports are printed out with these dates.

The no applies to the section when you start the system and record personal details of address and postcode. When you enter the state only two letters are allowed (okay for NT, WA and SA); also, you need five digits for postcode. Imagineering advises this will change in the near future.

The Home Accountant is the best prog-

ram I have seen for personal and small professional use. It is logical in its operation and has a lot of detail. There are some criticisms that I have, some concern me and some may concern other people.

The first is the speed. Because of multiple overlays of programs the speed is greatly affected. This is because standard DOS is slow. You can overcome this by first booting an FDOS disk then inserting Home Accountant and entering 'RUN HELLO'. The speed improvement is worthwhile.

Second is the printer support. It will not work with the Epson type II/ printer cards. These are very popular printers and unless they can write a driver for them the program will have a limited market.

The printers supported are Epson with Digitek Printmaster card, Anadex 9501, IDS 440, 445, 460, 560, Okidata Microline 80 (not 82), NEC 8023A, TI810, and Diablo, Qume and Itoh letter-quality printers.

I was not able to test it on the C Itoh dot-matrix printer. Cards it supports are Apple Parallel and Serial, SSM ASIO & AIO II and Mountain Hardware multifunction. I have not tested it on all these cards or printers — these specs were from the manual. Epson and Microline 82 were from personal experience and advice from others.

The third problem comes when you want to delete an erroneous record. These can only be edited, declassified and the balance made zero. This may be of importance to you or maybe not. Also, when you finish with a month you cannot make any further adjustments to it. □

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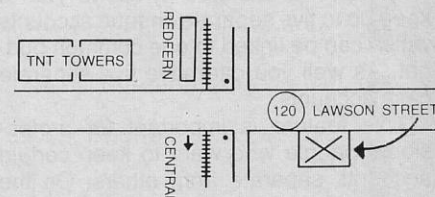
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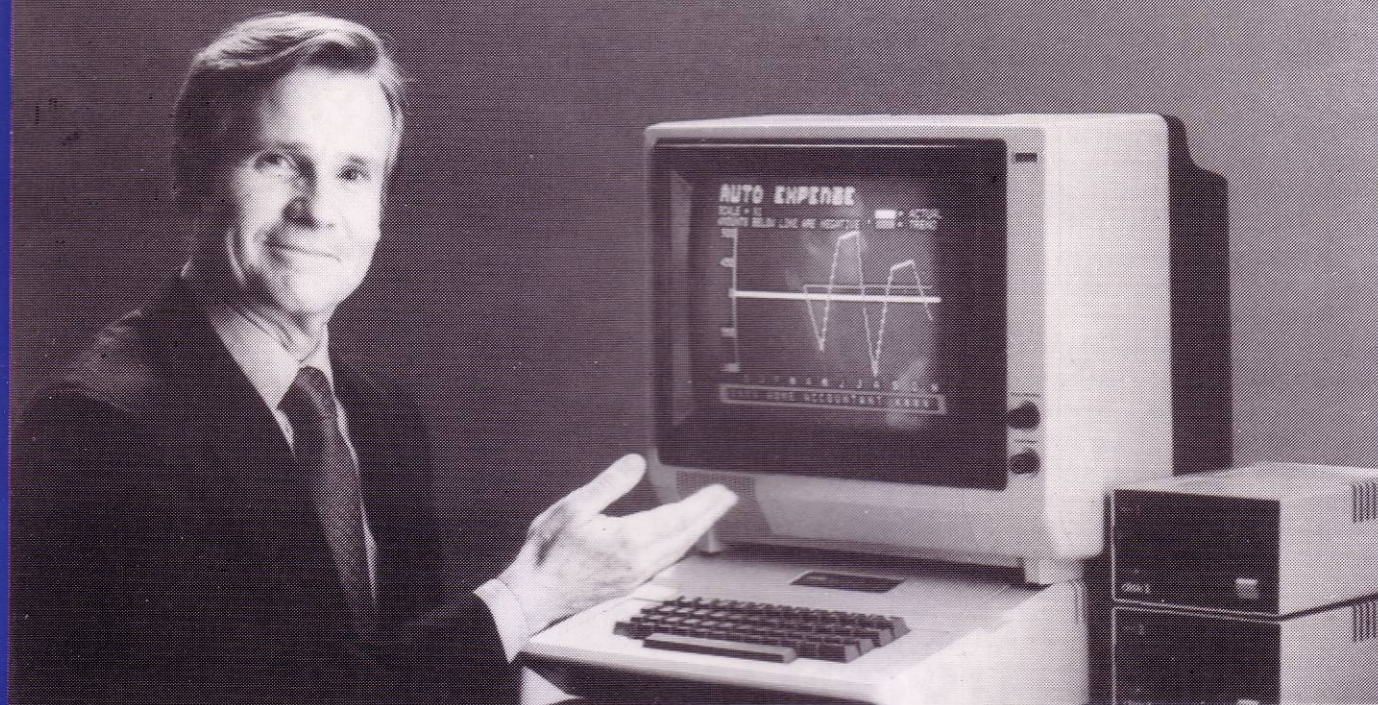
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