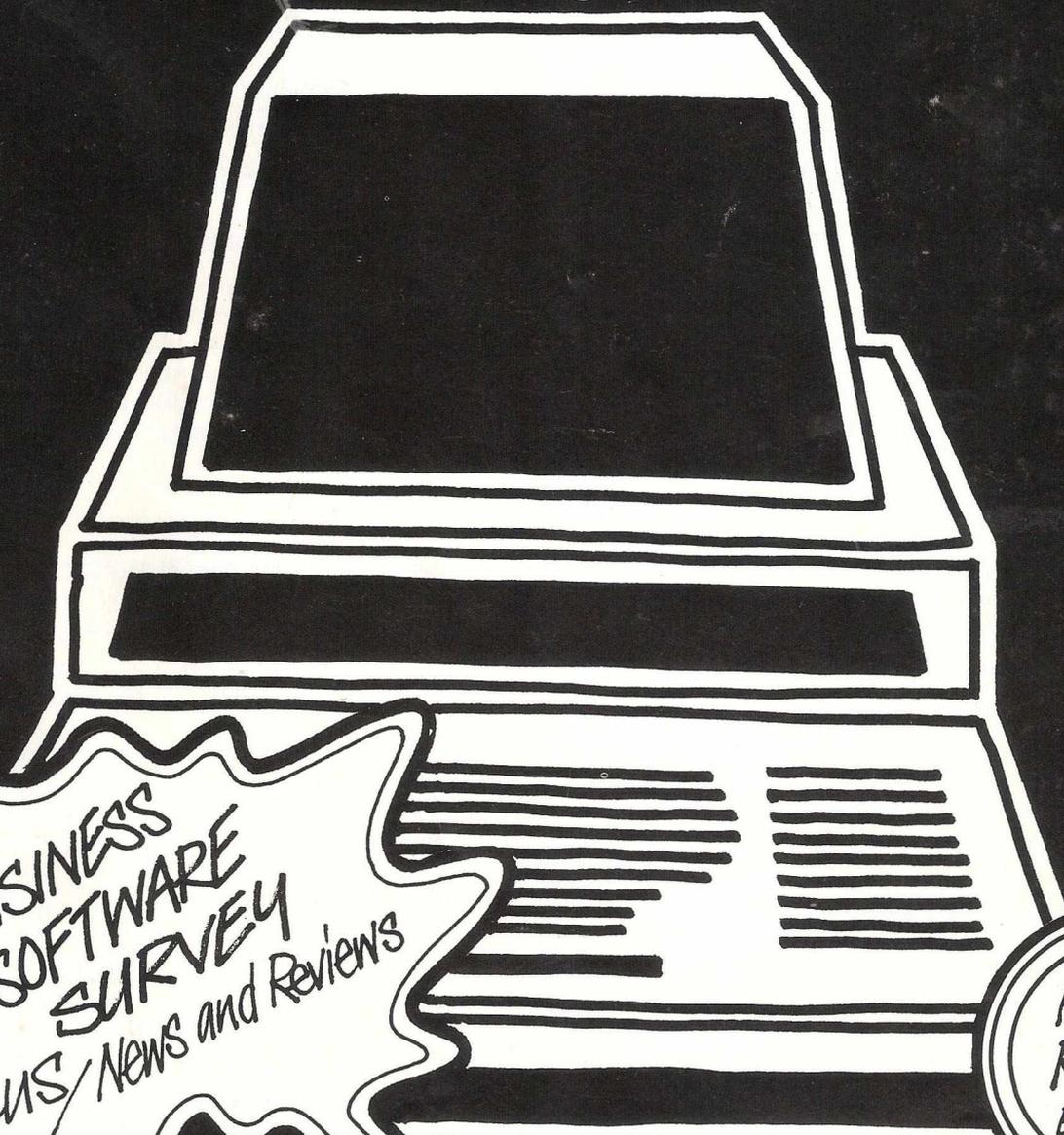


FIRST ISSUE

PRINTOUT PRINTOUT PRINTOUT

The Independent Magazine for Pet Users



BUSINESS
SOFTWARE
SURVEY
PLUS News and Reviews

NEW
ROMs
Examined

December 1979

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PRINTOUT

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EDITORIAL

Welcome to PRINTOUT – Europe’s first independent magazine based entirely on the Commodore PET and related products.

Published 10 times a year, PRINTOUT will become an authoritative voice in the PET field – bringing you all the up-to-date news, reviews of software and peripherals, applications stories, tutorial articles and programming techniques. In addition, we shall be featuring a large letters section, in which we want to publish *your* opinions and programming tricks, as well as answer some of your queries. PRINTOUT is aimed at all PET owners and users, as well as potential PET buyers.

One year’s subscription to PRINTOUT costs just £9.50 (overseas: £14.50) for 10 copies delivered to your door. If you want to keep in touch with what’s going on around PET, send us a cheque with the completed form below.

Contributing to each issue we have some of the best writers and programmers in the business. We are, however, always on the look-out for interesting articles; if you have something worth publishing, please contact our Editorial Office.

This first issue has been sent free to over 5,000 PET users – please show it to your colleagues. People we have spoken to all say that Europe has a need for a PET magazine – and that PRINTOUT’s format should fulfil that need – we hope you agree.

RICHARD PAWSON – Editor

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**How PET Works:
Part 1 Video Logic
Review of Compu/Think
Disk
Review of Commodore
Word Processor
Report on Computer Shows
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GET YOURSELF IN TRAINING

WITH AN OFFICIAL COMMODORE TRAINING COURSE

Now you can learn to use your Pet Computer (or Commodore Disk Unit) the professional way. Commodore's newly formed Training Division is running a number of intensive courses around the country. The courses are practical, with small informal tutorial groups, and a Pet between every two students. Full documentation, with manuals and exercises, is provided, and may be kept for future reference.

Each course lasts for two or three days, with optional on-site accommodation in top class Trust House Forte hotels; this is to be recommended, in order to make full use of evening tutorials.

PRIMARY BASIC teaches fundamental programming skills and is split into three sections: Computer Concepts, Programming Procedures, and BASIC Language, which run in parallel over three days.

DISK PROGRAMMING teaches students to design disk-based systems with the use of both Sequential and Random Access files. The syllabus, which includes an overview of hardware, operating system and user techniques, is taught over one and a half days; a working knowledge of BASIC is the only pre-requisite.

Below is a list of courses for late 1979—along with a booking form. Your dealer will have details of the 1980 courses (including Advanced Basic) as they become available.

Date	Course	Venue	Price with Accom.	Price without Accom.
Nov. 22-23	Disk Utilisation	N. Stafford, Stoke	£125	£100
Dec. 3-5	Primary Basic	Excelsior, Glasgow	£225	£175
Dec. 6-7	Disk Utilisation	Excelsior, Glasgow	£125	£100
Dec. 18-21	Primary Basic	Post House, Coventry	£225	£175

All courses start at 10 a.m. on Monday or Thursday. Primary courses end at 3.30 p.m. on Wednesday. Disk courses end at 12.30 p.m. on Friday. Prices are inclusive of VAT.
For details of future courses and booking forms, apply to your dealer.

NEW—MASTER LIBRARY SOFTWARE ON DISK

GD 001—COMMODORE ASSEMBLER DEVELOPMENT SYSTEM

For those of you with Disk systems and an interest in assembly language programming, this product is the most important arrival of the last several months. Finally, there exists a definitive industry-standard Commodore Assembler. It may have been a while in coming, but just look at some of the features that make it worth waiting for:

- 1 The package is comprehensively documented, and comes in the standard Commodore Disk Software multi-ring binder.
- 2 The whole package is written in assembly language and runs extremely efficiently.
- 3 The system includes a screen-based editor very similar to the BASIC editor, but with the additional functions of Find, Change, automatic line renumbering, repeat key, block delete and all the DOS SUPPORT commands.
- 4 Both source files and the KIM/TIM/MDT format object files, reside on disk for full flexibility of operation.
- 5 Two loaders are supplied to enable the user to load any RAM location.
- 6 The source code of the editor and loaders is included. These well documented programs reveal most of the current ROM entry points required to drive the PET and its peripherals from an assembly language environment.
- 7 EXTRAMON 7.5, a powerful new machine code monitor, has been included in the package. With this monitor it is possible to execute machine code in a

controlled fashion, thus drastically reducing the time typically taken to debug assembler programs.
Order No. 998

£50.00 + VAT

GD 010—LISP

Lisp is an interpretive language designed at MIT for research into the field of artificial intelligence.

Its associate operators, however, make it almost ideal for many relational database applications.

This version of Lisp is much more comprehensive than the original Lisp 1.5, and has been closely tailored for the PET to include the functions PEEK, POKE, CALL, OPEN, CLOSE, CMD and PRINØ. In all more than 80 different functions are available to the user.

Two demonstration programs are included with the Lisp system, and their explanation in the extremely detailed manual should help even the novice to come to grips with one of the most sophisticated languages in all of Computer Science.

Lisp is an ideal element in any course on programming languages, and of course its intriguing syntax and semantics mean hours and hours of happy tinkering for every dedicated software hobbyist.

Order No. MP999

£75.00 + VAT

Either of these programs will run on a 16K or 32K Pet plus Commodore disk. For further information ask at your dealer, or in case of difficulty:

The Commodore Information Centre

360 Euston Road, London NW1 3BL. Telephone: 01-388 5702

THE CHANGING FACE OF COMMODORE

When the PET was first launched in the U.K. some 21 months ago, Kit Spencer (General Manager of the newly formed Systems Division) coined the phrase – "You've heard of IBM – watch out for CBM!" With hindsight, this statement seems rather more prophetic than was given credit for at the time.

No-one doubted that PET would sell in vast quantities, though the current rate of 1,500 units a month must exceed all the original estimates. What is more encouraging, especially to those who had dealings with Commodore in the pre-PET era, is the considerable back-up service which they are going to great lengths to provide. Having spent the past few months building up an organisation of established computer professionals (Mike Gross-Niklaus and Mike Whitehead being amongst the latest recruits), Commodore are now creating new divisions to handle various aspects of sales and service.

Newest of these is the Training Division, managed by Mike Gross-Niklaus, to provide full customer education on the PET and its peripherals. Two courses are running currently – Primary Basic, an intensive course to provide the beginner with fundamental programming skills, and Disk Utilisation – centred around the operation and application of the Commodore 2040 Disk, including Sequential and Random File Management. Courses are held at various venues around the country and are priced at £100 to £225, depending on the length of the course and the accommodation required. Further topics including 'Advanced BASIC' will be implemented in the new year, but a full list/description of courses available this Autumn is contained in a new dedicated leaflet – available from your local dealer.

Leaflets seem to be spawning at the moment with "PET in Education" and "Approved Products for the Commodore PET" fresh off the printing press. The latter, which provides details of all the attachments and programs currently in the Endorsement Scheme, is a good guide to the compatibility of a product with the PET. Each one has been tested by Commodore and there are several conditions of Endorsement. One is inclined to speculate about the condition that "the product exists", however, since at least one product is described as being "Available late 1979 – price to be announced".

On the software side, Commodore's long-expected move into the disk-based Business Package field has commenced with the announcement of three Business systems – Business Information (£150), Stock Control (£150) and Word Processor (£75). PRINTOUT will be reviewing at least one of these systems in a forthcoming issue, but preliminary reports from the few people who have used them are very favourable. The Word Processor in

particular compares with dedicated systems costing ten times the price and features right-justification with variable margin width, multiple copies of variable-insertion standard letters and storage of up to 300 pages of text on disk. The new Business Systems will only be available through certain dealers who can provide – in Commodore's opinion – service of a high enough standard.

Partially dwarfed by these releases are a number of other programs on both disk and cassette. These in the former category include an overdue "Official Assembler" and a LISP interpreter for Artificial Intelligence enthusiasts. Cassette releases comprise several games, physics tutorial simulations, a number of mathematical/logical aids and a revised Payroll suite.

Commodore is growing fast and rapidly changing its image. CBM is now being printed on computer products, though the name PET will surely never die. Indeed, the only ironic thing is that two years ago, before PET was born, the company was devoting a lot of time and effort into changing the name it was then known by – from CBM to Commodore!

NEW RELEASES FROM ACT

"Over the next few years the world of microcomputers will see a large number of successes, and a large number of failures also. Our aim, at ACT, is to minimise the number of failures by providing our dealers with a range of reliable business systems and all the necessary back-up services."

This encouraging, if somewhat portentous, statement came from Roger Foster, Managing Director of ACT, at their recent launch of PET compatible peripherals and packages.

Having signed an agreement with California disk specialists – Compu/Think, giving them the sole U.K. distribution rights, ACT Petsoft are now marketing the new 800K Compu/Think disk units, in addition to

the existing 400K model. While 800K of store is by no means essential to run a business suite, it represents a major step forward for users with a need for large and numerous files. Steve Magee, President of Compu/Think, who was in this country for the launch, stated that it was a unique design but declined to tell us how it had been achieved.

Several of these units were employed in demonstrations of PETACT business systems at the new training/conference premises in Birmingham. Sales and Purchase Accounting, which have been around for some time, are to be expanded for the 800K disks and re-introduced as Mark II versions. ACT are now drawing on their "10 years of experience in the computerised accounting and time-sharing bureaux fields", to produce a comprehensive Invoicing package and a Stock Control system.

Although the specification was still provisional, the latter program looked good. Up to 7800 product lines can be handled, with 20 parameters recorded on each one – ranging from description, location and status through to various prices/values and the number of periods without issue.

PETACT business systems are priced at £225 to £350 and include a one day customer training course. John Farthing, Sales Director, hopes that ACT's considerable back-up services, including documentation and stationery, will give these systems the edge over others. "Open competition", he says, "is to be expected – not the least from another of our divisions, Petsoft! Their catalogue is being upgraded from simple business routines, to a range of professional low cost software."

Certainly the Petsoft £50 disk-based Stock Control program, written and demonstrated by Matthew Wauchope, represents excellent value for money. While the customer may be forgiven for confusing Petsoft and PETACT, this mild inter-divisional rivalry cannot be a bad thing.



Julian Allason plus two PETS! At the Compu/Think launch

PETSOFT PROGRAMMERS TOOLKIT

"10 POWERFUL NEW COMMANDS FOR YOUR PET!"

The Toolkit is a machine language program which is provided in a 2 kilobyte ROM chip. Just plug it in — no tools are necessary — and your PET's BASIC has 10 new and very useful commands:

- AUTO** Provides new line numbers when you are entering BASIC program lines
- RENUMBER** Renumbers your BASIC program, including all GOTOs and GOSUBs
- DELETE** Removes groups of BASIC program lines
- FIND** Locates and displays the BASIC program lines that contain a specified string
- APPEND** Adds a previously SAVED program to the one currently in your PET
- DUMP** Displays the names and values of all the variables used by your program (excluding arrays)
- HELP** If your program stops due to an error, HELP displays the offending line and where the PET detected the error.
- TRACE** As a program runs, the last six line numbers being executed are shown in the upper right corner of the PET's screen.
- STEP** Executes one BASIC line and stops. Pressing SHIFT executes the next line. The line number is displayed in the upper right corner of the screen
- OFF** Turns TRACE or STEP off

For the new 16K and 32K PETS, the tool kit consists of a single ROM chip which plugs into the left most empty socket inside the PET. Price £55 plus VAT.

For 8K and other 'old ROM' PETS a small printed circuit board is attached to the memory expansion and 2nd cassette ports of the PET. Price £75 plus VAT. Also available for 8K PETS with new ROMS. Please state configuration when ordering.

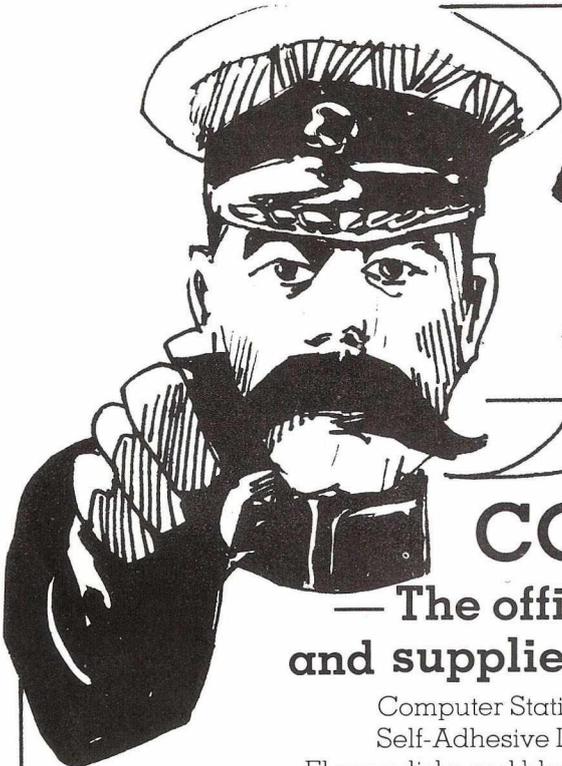
ACT Petsoft Telephone: 021-455 8585 Telex: 339396
Radclyffe House, 66-68 Hagley Road, Edgbaston, Birmingham B16 8PF



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HOTLINE— News and Products

PET gets "The Fever"

The North London Hobby Computer Club which meets regularly for lectures, workshops, program exchanges etc., has just announced its Autumn programme. The Club, which has its own fortnightly PET Users' meeting (Chaired by Barry Miles), welcomes new members with a personal interest in computing.

A rather novel competition, to follow the AGM on 5th December, will be the "Computer Music Disco". A suitable prize plus £50 worth of programs from Commodore, will be awarded to the composer of the best disco music on a microcomputer. For PET entries, there will be music interfaces supplied. Further information can be obtained from Club Chairman, Robin Bradbeer, at the Polytechnic of North London, 01-607 2789.

Insurance Brokers Package

A Pension Package, recently announced by Stage One Computers, demonstrates to a potential client the benefits of a particular pension scheme with both gross and net cost. Life/disability cover can be included, along with variables such as personal taxation code. Designed to run on a 16/32K PET with one cassette deck, the program costs £50 plus VAT.

Being launched concurrently is a BOND SUITE, which diagrammatically shows the situation of a Bond. End possibilities for Higher Investment/Maximum Investment plans can also be shown. Price is the same as PENSIONS.

Specifications of these programs and the expanded range of self-write PETAID business suites can be obtained from: Stage One Computers, 6 Criterion Arcade, Old Christchurch Road, Bournemouth. Tel: 0202-23570.

PET takes over control

For readers itching to control their central heating and burglar alarms (?) with PET, Mektronic Consultants of Linden House, 116 Rectory Lane, Prestwich, Manchester, are offering a device known as "The Communicator". Providing eight Input/Output channels from the User Port, the Communicator comes ready built at £135. Write for more details.

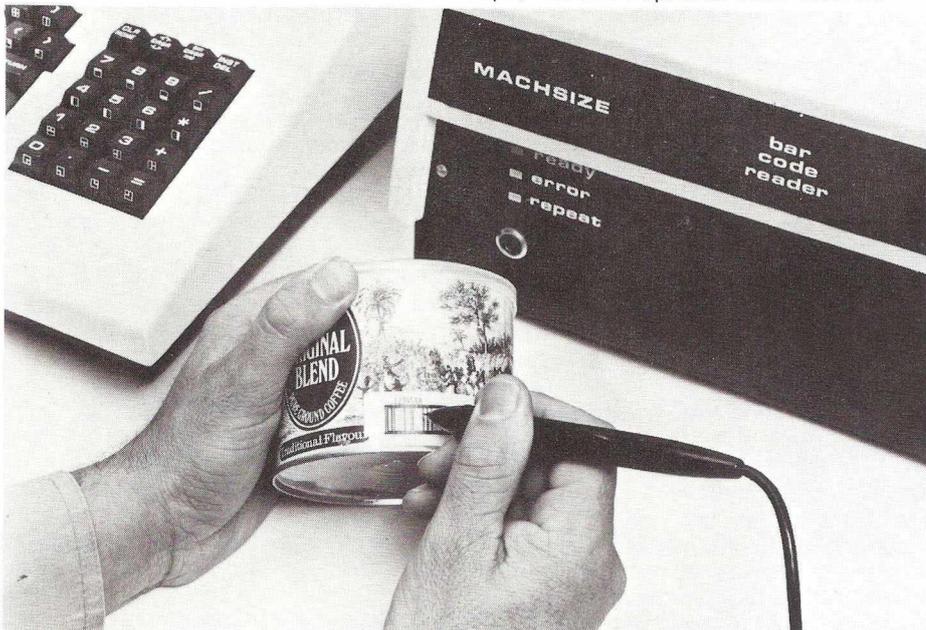
Getting switched on

If your disk system includes printers such as the Teletype 43 or disks like the Compu/Think, you will be aware of the problems caused by switching devices on in the wrong order. Wego Computers Ltd. have designed a box that will switch on up to 5 devices in the right order (and off again!). At £49.95 the unit comes complete with 5 3-pin 2A plugs and neon lights to indicate Power Up. For more information ring 0883-49235.

Bar Code Reader

Bar codes, the blocks of thin black lines often seen on supermarket products, are now being widely used on Stock Control, record systems and point-of-sale terminals. New from Machsize Ltd, is a bar code reading system, comprising a hand-held infra-red light pen and interface, which plugs directly into a PET.

The system converts bar codes into ASCII characters, which may be displayed on PET's screen or passed into a program. The hardware, which looks like a floppy disk unit, contains user-variable transmission rate, parity and IEEE address, and has visual and audible error alarms. Further details can be obtained from: Machsize Ltd., York House, Clarendon Avenue, Leamington Spa, Warks. Telephone: 0926-312542.



The MACHSIZE Bar-code reader in action

READ/WRITE Your Questions Answered

As the name suggests Read/Write will be an interactive column. We want you to write and give us your opinions on PET, commercial programs, services and even PRINTOUT itself! We would also like to know of any clever programming tricks or routines which you have developed. Alternatively – if you are a beginner or are considering the purchase of a PET or peripheral – write to us with your queries. We can't guarantee to answer everything, but we will do our best.

For the first issue we haven't had the chance to print any letters, so we are publishing answers to a few common questions heard around the market.

* * * *

"I have an 8K PET with an Expandapet board added on to the memory expansion port. Is it possible to fit the programmers toolkit onto this board?"

Yes. Petsoft will apparently supply a special connector so that the Toolkit can fit into one of the expansion sockets on this board. They do say, however, that at present the Toolkit cannot be used at the same time as the Compu/Think disk drives. In the near future they will be introducing a switch to provide a Toolkit-or-Disk choice.

* * * *

"I am considering the purchase of a PET and have seen some models with a green screen. Are these standard or must they be ordered specially?"

All new PETs currently being supplied by Commodore have green Phosphor screens. This is in keeping with the current trend (or availability) in VDU Monitors. Green screens are certainly easier on the eyes, though it is not certain whether any more white screened PETs will be produced. For those with the original white screen, an add-on green screen made of optical perspex is available from dealers, price £8.50+VAT.

* * * *

"Can the 5-Volt line on the cassette port be used for driving home-made circuits, such as interfaces or joysticks?"

This is inadvisable, and you should use a separate supply if at all possible. Drawing too much current from the port could damage the PET – and the warranty! Having said that, if you only need a few milliamps, and are very careful not to short anything out, you should be OK.

* * * *

"How can I learn more about PET – the manual supplied has only limited information on the hardware, and I would like to have some more details on several of the BASIC functions?"

We recommend two publications. The first are the TIS Basic workbooks, now available from Petsoft, and secondly the new book by Nick Hampshire – 'The PET Revealed' – which is a Commodore Approved product.



PET MEETS THE WORLD

The Commodore PET Desk-Top Computer can now talk to the outside world. An interface unit named 'Communicator' plugs directly into the user port and provides 8 channels. Each channel may be used for such inputs as switches, push-buttons, thermostats and alarms, or for such outputs as lamps, relays and D to A converters.

The PET 'Communicator' was developed by:

MEKTRONIC CONSULTANTS,

116 Rectory Lane, Prestwich, Manchester
Further information is available on request.

PROFESSIONAL PROGRAMS FOR PET COMPUTERS

Incomplete Records Accounting:

Disk based: for 32K with Anadex, Centronics 779 or PET Printer	£555
Tape Based for 8K with Anadex, Centronics 779 or PET Printer	£345
Tape Based, Screen only version for 8K ..	£145
Payrolls	£25 to £350
Sales and Purchase Ledgers	from £300
Word Processors	£25 to £350
Business Information file	from £150
Stock Control	£25 to £300
Specification for Building Conversions	£300 to £400

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★ ★ LATEST PET PROGRAMS . . . ★ ★

WSFN ROBOTICS £10 Robot control language moves robot turtle using one letter commands.

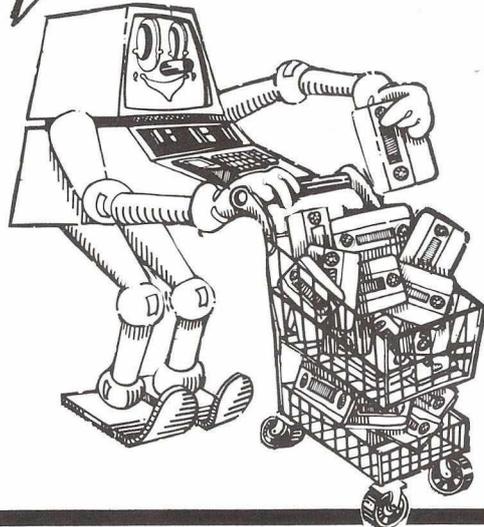
COLOUR PROCESSING £8 How to process E6 and Cibachrome. Calculates development times, filters and filtration.

SALES ACCOUNTING £95 Full facilities for maintenance of Sales Ledger, preparation of a list of outstanding balances and printing of statements. Recommended by Commodore. Disk version (Commodore) £115 + VAT. Send for details.

PURCHASE ACCOUNTING £95 Full facilities for maintenance of the Purchase Ledger, preparation of a list of outstanding balances and printing of remittance advices. Commodore Disk version £115 + VAT. Recommended by Commodore. Send for details.

DISK STOCK CONTROL £50. Full operational stock print-out, total costing of all items in stock and re-order lists. Handles up to 400 items per diskette (Commodore disk) or up to 2000 items (Petsoft/CompuThink Disk). Send for details.

SEARCH AND FIND £5 Location of any program on a tape using Fast Forward.



Plus many more in the new catalogue of PET programs from:

ACT Petsoft

Radclyffe House, 66-68 Hagley Road, Edgbaston,
Birmingham B16 8PF
Telephone: 021-455 8585 Telex: 339396



END OF TERM REPORT

Pet has been in use for some time in the mathematics department of Robert Mays School. PRINTOUT invited Geoff Parkin to give a report on Pet's suitability for use in Education.

After much research into micro-computers, stimulated by a B.B.C. Tomorrow's World programme one day in April 1978, "IT" arrived – financed, most coincidentally by an extension to the school, and the building of a new mathematics suite. There was no doubt at all in my mind that the PET offered the very best value for money at that time, and despite the multitude of frustrations that I have suffered over the past year due to interfacing problems, old ROM difficulties, etc., etc., I still would advocate the PET as being the best value. Today, with even cheaper prices, new ROMs and firms about to supply add-on goodies that will make PET even more competitive than its rivals, there can be little doubt as to its value in education.

At first, like many other teachers I have met since, I felt rather guilty at being able to find the cash to purchase a computer whilst not running any form of computer studies course in the school.

Our minds now rest easy in the knowledge that we provide the opportunity for all pupils to use and see the applications of a computer, and give them all some insight into the technological revolution that is happening in their lifetime.

It took several months to become half acquainted with "the beast". (We are learning all the time – that is half the fun.) My previous experience had been through batch processing on the Hampshire County Council mainframe computer, and early efforts of programming the PET reflected this in the elementary way information was displayed and obtained. One or two commercially available programs were purchased to help learn more about the tricks of the PET. This is where I first discovered how careful one has to be not to waste money on very poorly produced and non-exciting programs. With more and more agents being appointed for some of the well known software firms, it is now possible to see the material you intend buying before handing over the cash. This is a very welcome development. Having learnt the hard way, I can say that most programs currently offered are of good value. We have purchased from firms such as Petsoft, DAMS and Stack, and have received no end of help and freely-given advice in overcoming problems, and in selecting the right programs for the job. All the material I have seen and used has been of good quality with an excellent back-up service.

It was not long before the idea of filing pupils, their subject groups and other information raised its ugly head! A series of eight programs were written specifically for our school needs by myself, which involved the extraction, up-dating and creation of pupil data files. Running in 8K, it proved extremely difficult to keep even a whole year of pupils' information in RAM. Using data tapes was not considered during the run of a program because of the extremely slow access time. All data was to be held in RAM. Eventually these programs were merged

into one, and with a 32K upgrade, we can file a whole year group in RAM and rapidly gain access to any required group of pupils. This may seem an unusual task to some readers, because in most schools, I imagine, lists are only needed once a year or so; my school has a high turnover of children due to an R.A.F. camp being in the catchment area. Pupils leave and join every month, requiring a regular update of teaching group information.

This activity first showed me the problems with the cassette filing system in PET's old ROMs. At this time I had not joined the Users Club run by Commodore, and had no idea of the sort of information being published. To be quite honest, when I contacted Commodore regarding the problems we had started to experience, I rather resented the fact that one had to join their Users Club at £10 per year to receive information about the faults that they had put into their computer. Such corrective information should surely have been available free of charge? However, I did join the Club and received all back issues of their Newsletter, and much information contained therein was most useful. The Independent PET Users Group also helped a lot and their Newsletter contained even more helpful tips. All in all, we learnt a lot from many sources.

By now we had collected, bought, and written many programs (our total to date being over 170), but one particular program caught our attention. The Oxford Systems Associates Course option program, which at the time was available for a Research Machines 380Z computer. The program assists a timetabler to arrange a free-for-all option choice made by pupils into a viable timetable block system. The program holds all relevant information in RAM and displays the result of amendments etc. and helps guide the operator to a successful conclusion to suit the majority of pupils' choices. This program was the final decider on upgrading the PET to 32K, and an expansion memory board was obtained from IJJ Design Ltd. Some initial problems were experienced through a faulty board, but with the considerable assistance of IJJ Design, all was put right and we have been running 32K for six months or so with no problems at all. I set about translating the 380Z BASIC into PET BASIC, and after many weeks of work and much re-programming by Oxford Systems Associates, to get around PET old ROM snags, we had a working and viable program. It was ready just in time to work on our 3rd Year option scheme; no dummy runs and practices could be done, we had to learn whilst doing the real thing! All turned out very well, and time saved was considerable. In the space of one day, up to six complete run throughs were possible, altering the system to account for improving the fit of the pupils to the block structure. Done manually this would have taken weeks, and small errors would inevitably

have crept in. Done on the computer, errors would be avoided as the computer does not overlook any facet of the system. This program is now available through Petsoft under the title "Course Planner" and costs £95. I can recommend it highly.

An obvious progression that was required was a printer. Commodore's early printer turned into thin air, and as the money I had available had to be spent by the end of March or lose it, I opted for an IBM Selectric Printer and interface, being offered at the time by G.R. Electronics. Although this is now discontinued, I have had no difficulties with the system. Although slow at 15 c.p.s. it provides an excellent print quality, and is capable of 170 columns, and more important in a school, it can cut a stencil for duplicating purposes, and can therefore provide multiple copies of pupils' set lists etc., as well as sample programs for the teaching of elementary programming.

The advent of the printer made the availability of the computer to the pupils much easier to organise. At first much time was spent debugging programs on the PET and this prevented others from getting hands-on experience. The printer now enables pupils to debug programs away from PET, and thus allows more time for running, writing and testing programs.

On any day of the year, the mathematics room can be found full of PET enthusiasts at every free opportunity.

The computer is used during mathematics lessons, where it can be most appropriate in drawing graphs, converting number bases, etc. It is used to teach programming at an elementary level to all pupils during some part of their mathematics curriculum, starting at age 11. It seems inevitable that we gain a large stock of games programs and although there are those that would decry their usefulness, I firmly believe that their use is providing all ages and abilities of pupils with some experience of what modern technology can do. It leads, with guidance, to a deeper understanding of what a computer is, overcomes the fear sometimes associated with these advanced technological "beings", and in many cases, stimulates further work on the computer and program development.

Finally, a word or two for anyone contemplating purchasing a computer. Beware, computers are extremely time consuming and addictive! My wife can testify to that! Fortunately my team of mathematics teachers are extremely tolerant of the PET's intrusions into the running of daily mathematical activities. Seriously, any school contemplating the use of a computer in even the smallest of administrative routines must be prepared to allow some form of extra time for the person responsible for its operation.

Buying a computer is not the end of it; further regular finance is required to maintain and develop the system, otherwise it will be out of date by the following month!

Well, my new ROMs have arrived and are installed; I now face the problem of checking and amending 170 programs to run smoothly with them. A large task, and I'd better set to it!

9/10



PRINTOUT SURVEY

BUSINESS SOFTWARE

We looked at some of the eighty-plus programs advertised as suitable for business use on the PET.

It was not possible to conduct a full evaluation of all titles; however, we did examine some of the best known programs.

Quality ranged from highly professional to laughable. A small number of programs were so bad that they have been excluded. We were unable to evaluate software from two companies who failed to respond to enquiries.

Conclusions

On the whole price proved to be a fair indication of quality, although we would advise any businessman considering using ledger and payroll packages to have them checked by a professional advisor prior to purchase. Remember: There is no such thing as a bug-free program.

A number of the cheaper programs really provide no more than a basic structure requiring 'tailoring' to meet the individual needs of the purchaser. Since the rates for professional programming vary between £8 and £15 per hour, work of this nature would undoubtedly exceed the cost of the original. Several users reported that they had converted commercial programs themselves with acceptable results.

The comprehensive packages we looked at in detail conformed to a high standard overall. Prospective purchasers with non-standard book-keeping systems might be obliged to amend their own systems, as relatively little customizing is possible with standardized software. Nevertheless, we believe that many of these packages offer outstanding value. One supplier markets substantially the same software on a well-known mini at eight times the price.

Best Buys

The following packages appeared to us to offer exceptional value for money. It is stressed that PRINTOUT has not been able to test them to destruction. Prospective purchasers therefore should satisfy themselves as to the suitability of a particular package to their application.

PETACT Stock Control	£350
PETACT Sales Ledger	£350
PETACT Purchase Ledger	£350
PETACT Sales Invoicing	£350
Wordcraft Word Processor	£325
Computastore Payroll	£195
HB Sales Ledger	£350
Commodore Stock System	£150+
GW Business Program package	£575
Commodore Business Information System	£150+

Title	Price £	Minimum Configuration	Supplier	Notes
Accounts	12	8K Cassette	Petsoft & Dealers	Updates accounts as orders are placed and allows for invoicing against any order.
Ardenstock	15	8K Cassette	Commodore Dealers	Handles up to 90 stock items.
Business Program package	275-575	32K PET & Commodore Disk	Gramma Winter	Invoicing, Accounts Payable and Receivable, plus VAT etc. Specifications vary.
Business Information System	150+ installation	32K PET & Commodore Disk	Commodore Business dealers only	Facilitates storage and retrieval of company records.
Costing	10	8K Cassette	Commodore Dealers	Cost report generating system for up to 200 descriptions and costs.
Cash Flow Analysis	8	8K Cassette	Aztek	Handles up to 30 project cash flows simultaneously.
Commodore Stock	150+ installation	32K PET & Commodore Disk	Commodore Business dealers only	Handles up to 1300 products. Produces audit trail and running balances.
Debtors Letters	12	8K Cassette	Petsoft & Dealers	Tests age of invoices entered and prints out "chaser" letters of varying severity.
Forecast	10	8K Cassette	Petsoft & Dealers	Forecasts trends from daily, weekly, monthly or yearly sets of figures (e.g. Sales).
Invoicing	20	8K Cassette	Petsoft & Dealers	Order entry via formatted screen for automatic invoicing of up to 225 product lines.
Job Evaluation	25	8K Cassette	Petsoft & Dealers	Computes correct weighting of factors comprising job value to prepare correct Job Evaluation formulae.
Mailing List	15	8K Cassette	Petsoft & Dealers	Handles mailing and labelling.
Payroll, Cassette	25	8K Cassette	Petsoft & Dealers	Basic package, update service available.
Payroll, Disk	50	32K PET & Commodore Disk	Petsoft & Dealers	Caters for up to 200 employees per diskette. Full facilities. Update service available.
Percentage Costing	49.50	8K Cassette	Petsoft & Dealers	Handles costing with up to 100 cost factors.
PETACT Sales Accounting	225	32K PET & Cassette	PETACT Dealers	Sales Ledger Package. Links to Sales Invoicing package. Price includes user training.
PETACT Sales Accounting	350	32K PET & Petsoft Disk or Commodore Disk	PETACT Dealers	Disk version handles 1000 Accounts, Cassette version 200 Accounts.
PETACT Sales Invoicing	350	32K PET & Petsoft Disk	PETACT Dealers	Links to PETACT Sales Accounting package. Price includes user training. Handles 1000 accounts.
PETACT Stock Control	350	32K PET & Petsoft Disk	PETACT Dealers	Handles 26 files holding 300 stock items=7800 item capacity. Full Audit trail. User training included.
PETACT Purchase Accounting	350	32K PET & Petsoft Disk or Commodore Disk	PETACT Dealers	Handles 1000 Accounts. Purchase Ledger suite includes user training.
PETAL Analysis	150+	8K & Cassette	ACT Bristol	Management Accounting. Data entry via PET. Tape then bureau processed.
PETAL Purchase Ledger	150+	8K & Cassette	ACT Bristol	PL record/remittance advice, creditor control list and credit transfers.
PETAL VAT Analysis	150+	8K & Cassette	ACT Bristol	VAT analysis. Data entry via PET then bureau processed.
PETAL Sales Ledger		8K & Cassette	ACT Bristol	Statement/Remittance advice, Debtors control list and overdue letters. Bureau processed.
Portfolio Management	9	8K & Cassette	Petsoft & Dealers	Sorts and compares share prices, advising stop loss, alert and take profit situations.
Profit & Loss	12	8K & Cassette	Petsoft & Dealers	Prepares Profit & Loss Account
Rockstock	20	8K 1st & 2nd cassette decks	Commodore Dealers	Suited for when transactions are entered once daily.
Sales Analysis	10	8K & Cassette	Petsoft & Dealers	Handles up to 10 salesmen, up to four departments over 12 months and bar charts results.
HB Sales Ledger	350	32K PET & Petsoft Disk	HB Computers	Monthly balance ledger system handling 800 accounts and 400 postings p.m.
Standard Letterwriter	10	8K & Cassette	Petsoft & Dealers	Personalises and prints multiple copies of any standard letter text.
Stockbroker	20	8K & Cassette	Petsoft & Dealers	Share price watching and yield calculations.
VAT Pack	17.50	8K & Cassette	Petsoft & Dealers	Processes and stores input and output VAT items. Displays VAT return details.
VAT Scheme D	15	8K & Cassette	Petsoft & Dealers	VAT computation for retailers.
Word Processor Commodore	75+ installation	16K PET & Commodore Disk & printer	Commodore Business dealers only	Right justification, variable margins and page lengths. Multiple copies of form letter with variable insertions.
Word Processor Wordcraft	325	32K PET & Commodore Disk & printer	Hipposoft	Screen scrolling in any direction, right justification and standard text processing features.
Word Processor CMC Cassette	25	8K PET & Cassette & printer	Petsoft & Dealers	Line length, left margins, centering and skip. Insertion & deletion of words and lines.
Word Processor CMC Disk	28.50	16K PET & Petsoft Disk	Petsoft & Dealers	Line length, left margins, centering and skip. Insertion & deletion of lines.

Notes:

Prices quoted are exclusive of VAT.

The degree of support offered by suppliers varied considerably, as did installation charges. On the one hand, PETACT Business Systems included a one day's training course in the price; on the other, dealers quoted between £10 and £125 for installation of some of Commodore's programs.

PETS AND PIECES



by
GAVIN SANDERS

What we're about

Welcome, dear reader. (My old Dad said always start like that – it helps make 'em stay with you, he felt.) So, nice to have you, and here's hoping you *will* stay. What's going to be on this page as the months go by? Well, it's easier to say what won't be. Nothing excessively technical, for instance. Lots of column inches are needed for that, and heavy items will be covered elsewhere in this, the first full-scale, professionally produced, and above all *regular* magazine for PET people. Beside which, a still small voice somewhere inside me says I'm not really up to it! What you will get is a collection of random bits and pieces, some PET-orientated, some not, but all connected in some way with what I suspect turns you on as it does me – the computerised, gadgetty, today world of electronics. And I hope this opening statement of intent hasn't lost too many of you already!

Headaches transcended

Saw a fascinating news item not too long ago. It seems the transcendental meditation people at Mentmore Towers (previously the stately home of the Rosebery family, for those who like to know things like that) are into computing, and going further. It's not the biggest of deals thus far – a PET and a Cromenco and a TP link into a London bureau. It's currently for mailing lists but eventually it will analyse, would you believe, cephalographic brain patterns to see if meditation alters them. It's all made my cynical mind twitch a bit, centering on the now popular debate on whether VDUs give you headaches, nausea and Heaven knows what else. And if they do, will the transcendental meditators escape the dread afflictions, or will they turn into Anadin addicts like some of the rest of us? Should I start trying the lotus position before my PET? On balance (sorry!), I think I'll await developments.

Nice? Neat? Sometimes

Fecund (now *that's* a word I've been longing to use) programmers seem to abound everywhere, writing really inventive PET programs. The most startling creativity is usually in game programs, but often in others too. But why, oh why, I ask myself, is the programming talent often not matched by a similarly polished approach to the interactive bits? How screen or printer output appear to the user. Upper and lower is an exception rather than the rule (and you'll know just how daunting a screenful of upper-case looks); scrolling up on the screen is common, when blanking and starting again at the top is visually much

better; printed lines that don't use the available 40 characters happen all the time; too many or too few line spaces are everywhere, instead spacing that's economically and visually right; and so on and so on. And I haven't even had a go at the near-total subjectivity that grips programmers when it comes to writing user instructions. Seems to me that the ideal set of instructions should be clear, literate, independent, complete, helpful and easy. Those six words are an acronym for 'cliche' though, so maybe I'm bashing a dead horse. But does anyone out there agree?

Nice? Neat? Always!

While I'm on this subject, and if you'd like to see some programming that's a genuine joy, but you haven't yet subscribed, dig into your wallet when your wife's not looking, and buy yourself a subscription to 'Cursor', the 10-times-a-year cassette magazine for PET. Polished programming, coupled with genuinely superb screen/printer layouts (and loads and loads of creativity to boot), and it's all in 'Cursor' each issue. I know £36 at one go feels like a lot, especially sight unseen, but take my word for it: at £3.60 per cassette, it has to be the bargain of the year.

Load error!

Do you swap program tapes with other PET users? And get program tapes from them? And do those tapes often have more than one program on them? And do you occasionally, frequently, or always have trouble loading them? You do? Surprise! Well, for what it's worth, I have a theory you might like to try. We've all heard about tape head alignment, and that's why tapes won't load. Far be it for me to argue with my elders and betters on this difficult subject. But when I put more than one program on a tape, I *always* bulk erase the cassette first. I have a cheap old bulk eraser, bought years ago, which still works well, and that gets passed across both sides of any and every cassette I'm about to put even one program on, let alone two or three. And do you know, ever since I started doing that, no one has ever said they couldn't load one of my cassettes on their machine. The theory's really simple (and I suspect it may make the technical people wince), but I think the high recording levels used on PET tend to saturate the tape. Though total erasure is supposed to occur whenever a new program is recorded, it may not – especially if the erase head isn't that clean. Thus a few stray data bits from previous programs may well be dotted around here and there, and that's a recipe for instant load errors. If I'm right, then a bulk eraser has to be a good idea. They're available in hi-fi shops, and cost very little. You might like to give it a try. You'll at least have a nice hygienic feeling about your tapes!

Queues will be annihilated

And that's about all for this month, dear reader (see: I'm trying to bring you back next month for more!). Let me wind up with a favourite headline from the Daily Mirror not too long ago. Talking about laser scanners at supermarket checkouts, the Mirror headed the story "Lasers Cut The Checkout Queues". Zap! is all I can say.

Amongst a large number of programs offering good value in the lower price bracket, we selected:

Petsoft Disk Payroll	£50
Commodore Word Processor	£75
CMC Word Processor	£25
Petsoft Disk Stock Control	£50
Commodore Costing	£10
Forecast	£10

Suppliers

Full specifications and the name of the nearest dealer are available from the following software publishers:

Petsoft Ltd. Radclyffe House 66-68 Hagley Road Edgbaston Birmingham B16 Tel: 021-455 8585	Aztec Business Services 29 Royston Way Slough Berks SL1 6EP
--	--

Gamma Winter Ltd. 21b Dryden Chambers 119 Oxford Street London W.1. Tel: 01-636 8210	Commodore Systems 360 Euston Road London NW1 3BL Tel: 01-388 5702
--	--

Computastore 16 John Dalton Street Manchester M2 6HG Tel: 061-832 4761	ACT Bristol Ltd., Graphic House Telephone Avenue Bristol BS1 4BS Tel: (0272) 211733
---	---

Petact Business Systems Ltd. 66-68 Hagley Road Edgbaston Birmingham B16 Tel: 021-455 8686

Hipposoft 9 Littleover Lane Derby Tel: 0332-760127	HB Computers Ltd. 22 Newland Street Kettering Northants
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PRINTOUT

will be pleased to learn of readers' experiences using these or other software packages.

As is now well known, the larger keyboard PETs, models 2001-16 and 2001-32 are supplied with the revised set of Read Only Memory chips. Anyone with an 8K PET who has bought the Commodore disk drive should also have received a replacement set of ROMs.

The new ROMs correct a number of bugs which lurked within the original PET, notably the 255 element array limitation. Another bug, now corrected, related to the cassette file handling. The tendency to miss tape file headers has now been all but eliminated, by allowing a longer inter-record gap between tape files.

Operating System changes have caused the pointers to be moved. This can mean amendment to PEEKs and POKEs in programs written for old-ROM PETs. Combined with a change in the way upper and lower case text are handled, this has caused a major headache for the commercial software suppliers. Petsoft say they have now converted all their programs to run on both old and new ROM PETs. In some cases this has meant having two versions of the program on the same tape; in others they have used a routine which PEEKs location 50500 to see which ROM set is being used. The old ROMs will return a zero. The character set is then fiddled accordingly. Commodore say that they hope to complete conversion work on their own programs fairly shortly.

At power-on the new ROM PETs are in GRAPHICS mode as before. This means that a shifted character will display a graphic symbol on the screen. However, POKE 59468,14 into lower case mode produces capitals when shifted and lower case unshifted – just like a typewriter. This is in contrast to the old ROM PETs which return lower case when shifted, and upper case characters unshifted.

The net result of this change is that programs with lower case text written for the old ROM PET, appear with capitals and lower case reversed – and vice versa! The effect is peculiar to say the least.

The keyboard buffer has now been moved to locations 623 to 632. The number of characters stored in the buffer is held in location 158. This information should be useful to anyone wishing to clear the buffer for a GET command or wishing to generate an automatic Return.

Other bugs corrected include the DFN FN command which was prone to occasional failure, and a number of irritating odds and ends in the SPC and CHR\$ functions.

The protection of memory locations above \$C000 has now been removed, making it possible to PEEK them on the new ROM PETs. Machine language programmers will also welcome the TIM monitor which is now built in.

In redesigning the main board, Commodore have left three additional empty ROM sockets. This offers the possibility of more plug-in facilities along the lines of the Programmers Toolkit. One major software supplier has a machine code assembler/editor nearing completion, to be released in ROM. Alternative languages could be the next step.

The future looks interesting.

DOUBLE DENSITY PLOTTING

by Richard Pawson

PET's graphic capability and high contrast screen make graph plotting a very useful and relatively simple application. By listing the ASCII characters and graphic symbols (including reverse field) available on the keyboard, it can be seen that any one of 256 characters may be placed in each of the 40x25 print positions on the screen to build up a set of points, line or curve representing the graph.

Placing the characters in the correct positions as defined by the function being plotted, can be achieved by several different methods, including the use of TAB(x), and programmed strings of cursor movements. By far the most effective method is to POKE the code for the character required into the byte of memory representing the particular screen position.

Routines to effect this have been widely published in the past. An example of this type of plotting is:

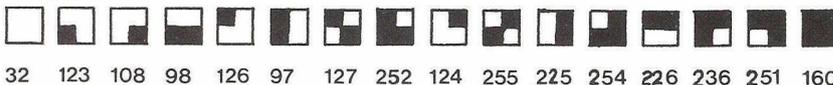
```
10 FOR X=0 TO 39
20 Y=12+12*SIN(X/3): REM YOUR FUNCTION HERE
30 POKE 33728-40*INT(Y)+X, 46
40 NEXT X
```

Whichever way the plotting is done, you are limited to a grid of 40x25 positions—adequate for illustrative purposes but not really good enough for curves.

If you are only really interested in ordinate of a graph—such as on a bar chart, then it is possible to increase the definition by a factor of eight in one direction. One method of achieving this was published in the Commodore Newsletter; the application being frequency analysis of a random number generator.

This article describes a routine which has been developed effectively to double the definition on both axes at once. Although programs which achieve the same result have been commercially available for some time, this particular routine is so small that it can be incorporated into your own programs, quickly and easily. The method is known as "4K plotting" since it divides the screen into 4,000 (80x50) units instead of 1,000.

Looking at the graphics symbols, it can be seen that several are made up from quarters of the unit square. In fact, using normal and reversed field, it is possible to obtain all sixteen combinations of quarters. These are listed below, with their PEEK/POKE codes shown underneath.



Given the two co-ordinates (x in the range 0-79, and y in the range 0-49) then two calculations must be performed before the point can be represented by a small quarter-square on the screen.

First we must find which quarter of which screen position is the nearest to the point x, y. Then we need to compute which of the 16 graphic characters to POKE into that position, bearing in mind that one or more quarters may have been filled already and must not be obliterated. The latter is the more difficult problem but can be solved with the following algorithm.

If the four quarters of the unit square are assigned values thus:

```
4 8 1 2
```

then each of the 16 characters can be given a unique number (in the range 0-15) according to the sum of the quarters occupied. The list of characters above has in fact been placed in order of value according to this system. To set a quarter of a particular screen position that position is first PEEKed to find the character already there. Then the value of the desired quarter is added to the character value. This gives the (0-15) code for the new character to be POKEd in.

The rest is just programming; the routine need not be explained in detail. Provision must be made to allow quarters to be switched 'off' as well as 'on'. The routine must also prevent nasty effects from trying to switch 'on' a quarter that has already been switched on. All these features have been incorporated into the program below.

Any program which uses the sub-routine must have the following two lines near the start:

```
10 DIM C(15): FOR I=0 TO 15: READ C(I): NEXT I
20 DATA 32, 123, 108, 98, 126, 97, 127, 252, 124, 255, 225, 254, 226, 236, 251, 160
```

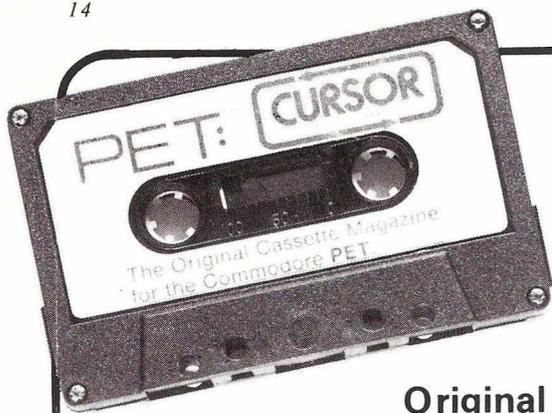
This fills up a dimensioned variable C(15) with the PEEK/POKE codes for the characters. Once having run this, the main sub-routine for plotting can be accessed as often as required. The sub-routine (which is only 4 lines long and occupies approximately 250 bytes) is listed below:

```
1000 XL=INT(X/2):XS=INT(X)-2*XL:YL=INT(Y/2):YS=INT(Y)-*YL
1010 N=(YS*3+1)*(XS+1):P=33728-40*YL+XL:FOR I=0 TO 15:
IF PEEK(P)<>C(I) THEN NEXT I
1020 I=I OR N: IF T=1 THEN I=I AND NOT(N)
1030 POKE P, C(I):RETURN
```

Several points need to be noticed:

1. Before GOSUB 1000 set the variables x and y to the desired co-ordinates in the range 0-79, 0-49.

(Continued)



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- 2. If T is set to 0 then the routine will print a white quarter in the correct position. If T is set to 1 then the routine will remove the white quarter (if it exists) from that position.
- 3. It is advisable to clear the screen before plotting since the routine will hang up if characters other than the 16 specified are encountered in the way of the graph.

Example of application

Although the sub-routine can be used in many ways, the following program demonstrates its effectiveness in plotting a smoother sine wave.

```

5 PRINT "ch"
10 DIM C(15):FOR I=0 TO 15:READ C(I):NEXT I
20 DATA 32, 123, 108, 98, 126, 97, 127, 252, 124, 255, 225, 254, 226, 236, 251, 160
30 FOR X=0 TO 79
40 Y=25+24*SIN(X/6)
50 T=0:GOSUB 1000
60 NEXT X
70 GOTO 70
plus the sub-routine 1000-1030

```

Further applications include Fourier Analysis and Linear Regression as well as drawing/sketching programs. Let us know how you get on with it.

PRINTOUT MEETS PETS GODFATHER!

An Interview with Jim Butterfield

Jim Butterfield, probably one of the best known personalities in the PET world, was in this country recently – theoretically on holiday!. Jim is an incredible fund of information, and User groups around the country have not been slow in inviting him to give lectures. We hope to have a transcript of some of his more exciting announcements in a subsequent issue, but for the meantime the following describes a rather hasty interview we managed to obtain with him.

Printout: Jim, can you tell us, briefly, what is likely to appear on the PET market in the near future?

J.B.: Well, the best news is that everyone is bringing out assemblers. We are going to move from a famine situation to a glut. The new assemblers will be written in machine code and will be much faster than the existing BASIC versions. Editing will be much simpler than before, with several disk-based versions, and at least one that will allow editing and assembling in the same program.

Printout: Who exactly will be marketing these programs?

J.B.: Both Personal Software's and Commodore's assemblers are imminent. Rumour has it that one may well be in ROM – which would be a great help. The other program which is appearing in many forms is the Super Monitor with relocating and disassembling routines, etc.

Printout: That's certainly encouraging for the Machine Language user, but what about BASIC programs?

J.B.: Lots of companies are producing these Toolkits which plug into the ROM expansion area. There are slight differences from model to model but they all add several commands to PET basic – including Renumber, Block Delete and a Find function.

Printout: Last time you came to the U.K., you showed us several unique programming tricks – have you any more this time?

J.B.: I have now perfected a method of un-crashing a new ROM PET from any situation without losing your program or

data – involving some hardware and some software jiggery pokery. First you must connect Pin 5 of the diagnostic connector (on the user port) to ground. Then briefly ground the RESET line of the expansion port, which will put PET back into control of the monitor. Incidentally, it's best to do this with a proper piece of hardware that provides a debounced several millisecond pulse; thus preventing accidental shorting or power-on resetting. Having entered the monitor, there are two possible courses of action. Provided that Page Zero has not been meddled with, you can return to BASIC with 'X' (Return), then 'CLR' (Return). The CLR is important as the Stack Pointer will have been reset to 01. Don't forget to remove Pin 5 from ground.

If however, you have been trying some clever machine code and can't return to BASIC then when the monitor has been activated, type a semi-colon (Return). This is an illegal command so the Monitor will return a question mark. You should then place the Cursor over the Stack Pointer (01) and overwrite it with FA (Return). You will now be back to the Monitor, with everything corrected.

Printout: Incredible! How do you work out these tricks – do you pore over ROM listings for hours on end, or rely on your extensive PET grapevine?

J.B.: Well, I do have a complete set of ROM listings, but my main advantage is that people just can't resist bragging to me about what they are doing with PET. I just combine the various titbits I receive with a little work of my own and pass it on.

Printout: Well, thanks for sharing the latest information with us; we look forward to your next visit.

J.B.: Thanks, and good luck with PRINTOUT. Europe needs its own PET magazine and I shall look forward to seeing your first issue.

* * * *

We haven't had a chance to try out Jim's un-crasher, but understand that it should work in any situation. Let us know how you get on with it.

SOFTWARE REVIEW

PETSOFT

Photography Course

Ratings:

*=poor **=fair
 =good *=outstanding

Title: Photography Course Publisher: ACT Petsoft

Availability: Most PET dealers or by mail order from Petsoft

Price: £12+VAT

Minimum Hardware Requirement: 8K PET old or new ROMs

Instructions: Included in programs

Publisher's Description: "A comprehensive introduction to the world of Photography"

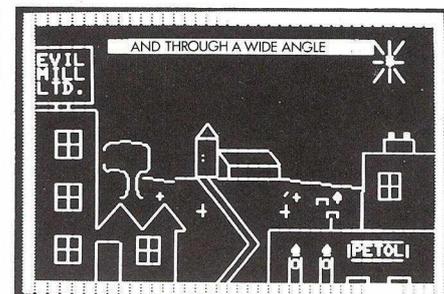
A course consists of eight 7K programs recorded sequentially on a single C-60 cassette. Program No. 1 takes a canter through the early development of photography before getting to grips with the basic camera controls. Program No. 2 makes good use of PET's graphic capabilities to explain aperture settings, exposure calculation and shutter speeds. Focal Length, a notoriously difficult concept to explain, is put over in a moving graphic display. Program No. 3 deals with Focus and angle of view. As with all but the first program, it ends with a Quiz. Those failing the test are sentenced to a repeat of the relevant lesson. Program No. 4 covers different lenses from wide angle to telephoto; Nos 5 to 8 deal in turn with the various different types of cameras, including SLRs, TLRs, plate cameras, half frame and Polaroid.

Evaluation

Outstanding graphics, no program faults, and good "human engineering". Insufficiently interactive to match up to the highest C.A.I. standards. Omitted is any discussion of film types and processing. Particularly useful to beginner but unlikely to teach an advanced amateur anything new. A good buy for schools and those interested in learning about the basic principles and techniques of photography.

Verdict:

Not inexpensive, but good value. Recommended***



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BS1000 COMMODORE BUSINESS INFORMATION SYSTEM—CBIS

(On disk requires 32K Pet)

£150

CBIS is an advanced business information system which facilitates the storage and retrieval of virtually all types of company records. Information can be selected, displayed or printed according to the users wishes—normally within a few seconds. Typical uses are:

Personnel Records	Investment Portfolio Diary
Prospect Lists	Mailing Lists
Subscription Records	Address Labels, etc.

Information can be extracted from the files by various methods and according to several criteria. Any character or group of characters within any combination of sub-records can be tested. Multiple conditions of extraction may include Less than, Greater than, or Equal to, specified data. Two standard print-format routines are included (one for adhesive labels), with provision for up to three user-generated routines. Other functions include Insert, Modify, Delete, Recover and Free Records. Access time is typically 2 seconds and upwards; even greater speed can be obtained through direct number access.

BS1010 COMMODORE STOCK CONTROL—CSTOCK

(On disk requires 32K Pet)

£150

CSTOCK is a stock control system which is designed to provide an accurate up to the second stock position for as many as 1300 products. Stock movements are recorded individually on one disk drive, so providing a complete audit trail and running balances on the master file. At any time, an input program can be interrupted and the latest stock position ascertained. The information displayed is:

- | | |
|-------------------------------------|-------------------------------------|
| 1. Stock Number | 6. Quantity on order from customers |
| 2. An alternative number | 7. Cost and Sales Price |
| 3. Description | 8. Re-order level |
| 4. Total quantity in stock | 9. Total sales year to date |
| 5. Quantity on order from suppliers | 10. Unit of sale |

Various reports can be produced (including Stock Taking and End of Period Reset), which highlight stock items below the re-order level. Full statistics can be obtained on the value of stock and provision has been made to link CSTOCK with future BS1000 suites to facilitate invoicing.

BS1100 COMMODORE WORD PROCESSOR 1

(On disk requires 16K or 32K Pet)

£75

The moment you look at the big keyboard PET, one of the applications it absolutely cries out for is for Word Processing. The clear screen and big keyboard means that the PET is a pleasure to use as an electronic typewriter. The disk unit has enough space for the Word Processor program, plus as many as 303 pages of text. Add a Commodore printer or (for high quality typing) a Qume, NEC Spinwriter or Diablo printer, and you have an extremely powerful Word Processing station virtually indistinguishable from dedicated Word Processors costing thousands more.

Written in Machine Code, this package is extremely fast—moving paragraphs, finding requested phrases, inserting lines and characters, and swapping pages to and from the disk. The user is kept constantly aware of his environment by the status line at the top of the screen. The other 24 lines of screen form a movable window on your text file. This system is eminently suitable for standard letters (with variable insertions), official documents and lengthy reports. Here are just some of the features:

1. Right and left justification (with both margins variable) for tidy presentation.
2. Fast repeat control functions, including cursor movements and Insert/Delete.
3. FIND function to show all occurrences of requested word or phrase.
4. Centered headings and variable page length.



All packages come complete with diskette program and several demonstration files, documentation in stiff ring-binder, and necessary add-in Rom. Commodore Business Software is available only from official Business Software dealers. Prices shown include additional Rom, but exclude VAT and installation. For more information contact your Business Software dealer, or, in case of difficulty the—

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PEEKs and POKES

by Inside Trader

Gossip Rumours and other distortions

Jim Butterfield has a cunning Canadian box. It recovers crashes *without loss of data* The curse of the Commodore really works. First the importers of G2 software went bust. Now GRT Corporation, the manufacturers, have filed for Chapter XI bankruptcy status What has happened to Creative Computing columnist Greg Yob's (sic) PET handbook? Or Adam Osborne's threatened opus, for that matter? Rising Phoenix-like out of the ashes of the American PET Gazette, comes COMPUTE MAGAZINE, devoted to PET and other 6502 based computers. Or at least it will be if they can ever read Len Lindsay's handwriting A piece of software offered to Petsoft was turned down on the grounds that it was "too pornographic". Is Julian Allason losing his marbles? (No Ed.) Which well-known dealer threatened to punch the Chairman of a peripheral manufacturer on the nose? Clue: you can't get him off the telephone

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. Sadly missed: PET User Notes (U.S. variety) – seems Gene Beals is too busy with his computer company Last quarter PET sales look set to exceed 1500 a month. Doubting Thomases can check with Customs & Excise Why are those PET programmers Coding sheets printed in pale blue? So they won't photocopy, stupid! One of the PETs leading technical men attends press parties with a minder (18 stone, eats three lunches). Does he know something we don't? Computer Retailers Association sub is £300 p.a. Half a PET or one hundredth Chuck Peddles' salary Three of the High Street multiples have plans to sell PETs (one already is). But is this a Good Thing? And what about Terry Wogan? CBM have shown a select few their new BASIC Pack ROM chip. But with over 10,000

Programmers Toolkits sold, aren't they too late? One software supplier says he sold Startrek to the Ministry of Defence. Invoiced as Military Software Personal Software still furious with IPUG for telling members how to bust the protections in Microchess. It looks like writes next time, lads Banned from the Daily Telegraph: Science correspondent, Adrian Berry's PET – lest the unions get The Wrong Idea Why does Jack Tramiel's calendar have a ring around the end of March? Our spy in Santa Clara reports feverish activity in the development department. Mention of Winchester disks causes fits of coughing One Midlands dealer pirates software. There have been two out of court settlements already and Software Houses are looking forward to a test case. They want to make an example!

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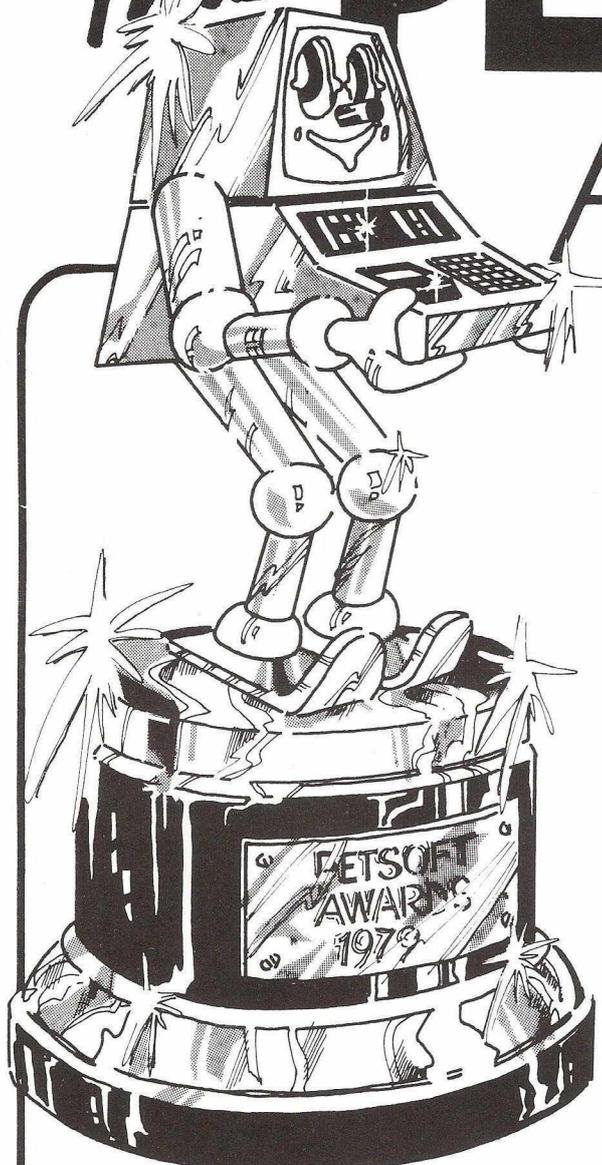
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