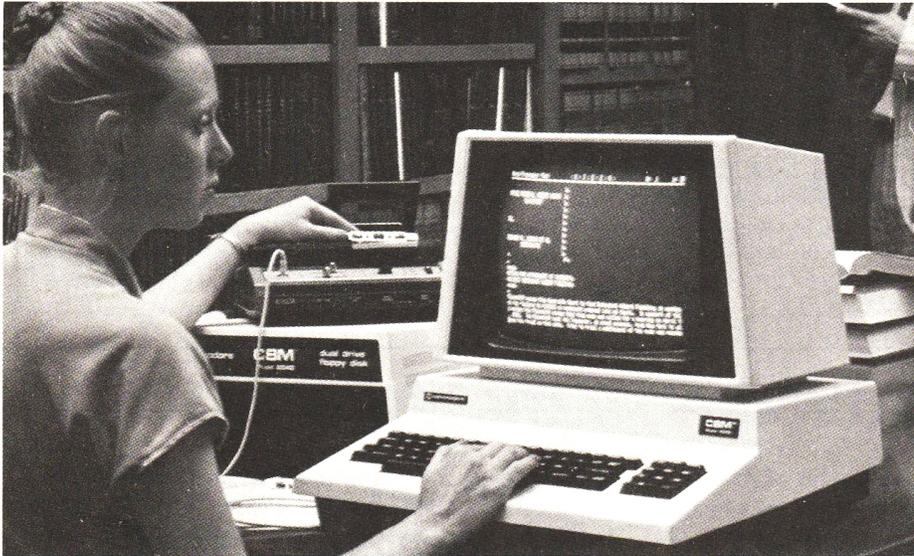

COMMODORE NEWS

VOL. 1, NO. 1

FALL 1980

THE OFFICE OF THE FUTURE... FROM ONLY \$5,000



Completion of its new 8000 series product line, which now includes the CBM 8032, 80-column microcomputer and the CBM 8050, 1 megabyte discs, confirms what key industry analysts have been saying recently; that now Commodore is poised in a very attractive position to lead in the rapidly emerging office market for microcomputers.

As the No. 1 microcomputer in Europe, Commodore has been

drawing upon programming talent from around the world to advance a series of software packages for "Management Systems" that will realize to owners much of the enormous potential the 80-column screen and 1 megabyte disc capacity offers.

These are features previously only found on traditional minicomputer systems from \$10,000 and up and demonstrates a technical lead by

Commodore in microcomputers. This has been made possible by close technical cooperation between the Commodore Systems Development Group and its own semiconductor companies. At the heart of these products is Commodore's own MOS Technology 6500 microprocessor which has been combined with the concept of "intelligent" peripherals first pioneered by Commodore in its PET® series of microcomputers. The currently popular VisiCalc planning program and "Wordpro" word-processor programs have been upgraded from the 40-column Commodore PET microcomputer versions to the large screen 80-column CBM models and have gained dimensions in the process. In addition, the new "Management System" releases include "OZZ"—the information wizard, "Wordcraft 80"—a professional feature wordprocessor package, and a tax planning and stock portfolio package. Many independently available packages are also being written for the 8000 series and include all the popular business areas such as Accounting, Payroll and Inventory applications.

"O.K., I've bought a microcomputer. What do I do with it now?"

In this article, directed at first-time users, Matt Sperber, Director of Marketing Services, looks at ways in which a company can find new ways of exploiting its PET®/CBM™ microcomputer.

Perhaps one of the questions that I am most frequently asked is—"All right, so I've got a microcomputer—what can I do with it now?" Let me add, unless anyone thinks that PET owners spend \$5,000 - \$7,000 on a computer system only to wonder what to do with it afterwards, that the majority of PETs are bought by people

with a specific purpose in mind, like helping with a company's payroll, stock control or accounting.

The main question is usually trying to establish, "Having bought all this latest electronic technology in order to solve problem X—what else can I do with it?"

One useful start point is the local computer dealer from whom you bought your original system—he will have been asked the same question before by other first-time users and will be able to point you in the right direction. But your local computer dealer may not have an in-depth

(continued on page 2)

Microcomputer—continued from page 1

knowledge of your specific business and problems which relate to your microcomputer system.

On the other hand, to buy this kind of advice from outside consultants could cost another \$10,000 - \$50,000; or to put it another way, if spent on hardware would buy another 2 - 10 business systems complete with computer, disk unit and printer. Clearly, the most cost-effective solution for your company is for one member of your staff to spend some time learning about microcomputers and to act as a kind of "internal consultant" within the company. The only question that remains to be settled is on the choice of staff member to take on the added responsibility; however, since you were the person responsible for the company acquiring the computer in the first place, the answer is obviously *you!* So where do you go for further information?

Having established close contact with your local dealer, one of the best investments you could make would be to join the Commodore PET Users Club which publishes a newsletter dealing with latest products from Commodore and independent suppliers, application articles, and many technical articles designed to assist you make the most of your PET. It's definitely worth joining for an annual subscription of only \$15.00.

Another excellent way to start is to study some of the extensive literature available for the PET. Commodore's own manuals: *The PET Users Manual*, *The Floppy Disk Manual*, and *The Printer Manual*, will certainly repay close study, dealing as they do with the extensive capabilities of the Commodore PET and its "intelligent" IEEE peripherals.

For the first-time user and experienced user, the new book from Osborne/McGraw Hill—*PET/CBM Personal Computer Guide*—provides an excellent introduction to the capabilities of the machine.

For the programmer who wishes to improve his techniques and "go deeper" into the workings of his PET, two books by Nick Hampshire are absolutely invaluable: *PET Revealed* and *PET Subroutines*. Both are now distributed by Commodore and can

be ordered through any Commodore dealer.

The scientist or engineer who wishes to make the most of the monitoring and control capabilities of the PET, will find more information in *PET and the GP/IEEE-488 Bus* published by Osborne/McGraw Hill. The would-be machine code programmer is excellently catered for in *Assembly Language Programming the 6502*, again by Osborne/McGraw Hill. On the subject of the 6502, two excellent manuals are published by Commodore: *MOS—Hardware Manual* which deals with the architecture of the microprocessor; and the *MOS—Programming Manual*, which deals with the 6502's instruction set.

RECOMMENDED FOR FURTHER STUDY

General

STRATHCLYDE BASIC COURSE

- Commodore

PET/CBM PERSONAL COMPUTER GUIDE

- Osborne/McGraw Hill

For the Programmer

PET SUBROUTINES

- Commodore

PET REVEALED

- Commodore

Advanced Programming

ASSEMBLY LANGUAGE

PROGRAMMING THE 6502

- Osborne/McGraw Hill

PET AND THE GP/IEEE-488 BUS

- Osborne/McGraw Hill

MOS PROGRAMMING MANUAL

- Commodore

MOS HARDWARE MANUAL

- Commodore

THE PET® REVEALED

CONTENTS

180 Pages of Solid Information

• SECTION 1. The PET System Hardware.

Basic elements—CPU—Memory—Input and Output—Video circuit—System memory map.

• SECTION 2. The 6502 Microprocessor.

An overall view—The accumulator and arithmetic unit—Processor status register and flags—Branching and Jumps—Addressing modes—The Index register—The Stack register—Interrupts—Data modify instructions—Machine code on the PET—Hand assembling programs.

• SECTION 3. The PET operating system.

Routines from PET Basic—Variable memory map—Basic tokens—Program storage format—Overlays—Data storage—Numeric and string variables—Arrays—Garbage collection—Adding commands to Basic—A trace program debugging aid.

• SECTION 4. The User Port.

User port connections—Video output circuit—Parallel user port—The 6522 VIA—User port memory map—Programming the user port—Handshaking on the 6522—Serial I/O—I/O port expansion—Communication between processors—KIM to PET data handshaking—Summary of 6522 registers.

• SECTION 5. The IEEE port and the 6520.

The 6520 and its registers—The PET keyboard—Modifying keyboard functions—Cassette unit—Merge—IEEE port—IEEE connections—IEEE signals—IEEE commands—IEEE to RS232 conversion—IEEE bus handshaking—The video display—Double density plotting.

\$19.95

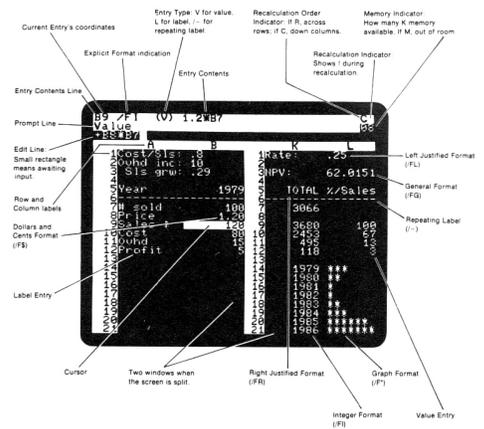
COMMODORE Announces VisiCalc™

Commodore recently announced the availability of Personal Software's VisiCalc program developed for its line of 32K microcomputers. With this software, and either the 2040 or 8050 disk drive, the user can put VisiCalc to work generating financial studies, profit models and a score of other applications with only a fraction of the time and effort of a manual operation. The VisiCalc program generates a giant, two-dimensional electronic sheet. On this sheet, you can record values, calculate them with pre-determined formulas, and report them to a printer. Actually, it is very much like a calculator with two exceptions: (1) it stores the figures for review, and, (2) if you decide to change a value, it remembers the formula and automatically recalculates the answer.

For example, if you want to project your annual sales and costs under a manual method, you would lay out

twelve months across a spread sheet and then fill in the lines and columns with your projected figures. Many of those figures in a given month such as phone bills, inventory and travel expenses, could be calculated as a percentage of monthly sales. Each time you wish to change one of those figures, you would have to first recalculate it. Under VisiCalc, you would simply enter the formula for the calculation in the appropriate column and, each time any one of the entries was changed, the entire column would be recalculated.

VisiCalc is available for both the 40-column and the 80-column Commodore systems. The 80-column system gives the user the added benefit of doubling the number of columns displayed on the screen compared to conventional 40-column screens found on most micro-computers.



VisiCalc has unlimited possibilities for use in business, engineering, and even personal use. Many users find that VisiCalc alone is justification for owning a personal computer.

Commodore Compatible Hardware

The computer peripheral market is flocking to the Commodore line. A host of new devices have been developed to interface with Commodore systems and more are appearing on the market almost daily. Here are some examples:

• CASH REGISTER SYSTEM

Commodore's business system has been modified with a register keyboard and a cash drawer. The system will handle point of sale transactions, end of day accounting and inventory control. The device is also available in a restaurant system. Available through:

BASTROP MONROE CASH REGISTERS
2303 FORSYTHE AVE.
MONROE, LA. 71201

• HIGH RESOLUTION GRAPHICS

This device, the MTV visible board adaptor, plugs into the PET expansion connector. It provides a 64,000 dot array 320 wide by 200 high. Each dot can be individually controlled. The device allows for software switching between the high resolution and standard graphic modes. Available through:

MICRO TECHNOLOGY UNLIMITED
P.O. BOX 4596
GALAXY WAY
MANCHESTER, NH 03108



• X-Y PLOTTER

The unit consists of a plotter, drawing surface and power supply. The plotter is encoded at .01 inches per pulse with .005 inches per pulse optional. The pen speed is 2.5 inches per second and the pen holder will hold a stylus 7 to 11mm in diameter. Source code is available in both basic and assembler. Available through:

SYLVAN HILLS LAB
BOX 646
PITTSBURG, KS 66762

• MULTI-USER INTERFACE

The device links up to 8 Commodore computers to one disk unit and printer, without changing your existing software. All systems have access to both the disk drive and the printer. Available through:

NEECO
679 HIGHLAND AVE.
NEEDHAM, MA 02194

The Commodore Management System: WORD PROCESSING

WORDCRAFT 80



Most businessmen accept that the cost of producing typed paperwork is becoming a significant item in their office expenditure. And the rapid acceptance of Word Processing machines is a direct result of the escalating costs of typed material.

However, there are many areas of business that cannot consider the major investment required to install dedicated Word Processing equipment: smaller organizations, departments

only employing 1 or 2 secretarial staff, laboratories, branch offices, etc.

WORDCRAFT 80 is a professional Word Processing program that converts a very low-priced microcomputer system into a full-fledged Word Processing machine. The microcomputer system is the Commodore CBM using an 80-column screen and twin floppy disk drive unit with a capacity of 80 to 100 pages of text.

Consider these features:

1. Page layouts of up to 117 characters wide by 98 lines deep.
2. Screen displays finished format of document, no wrap-around.
3. Handles tabs, indentations, decimal tabs and columns.
4. Automatic centering and right margin justification.
5. Headers and trailers on each page as well as automatic page numbering, even book-fashion (alternative left- and right-sided).
6. Character, word and paragraph deletion and insertion.
7. Block movement of text from one page to another.
8. Automatic merging of standard blocks of text to form documents.
9. Merging of standard letters with name and address files.
10. Handles single sheets or continuous stationery.
11. Half line movement for subscripts and superscripts.
12. Character string search.
13. Identify and/or replace Automatic underlining and boldening of text.

WORDCRAFT is compatible with many of the "daisywheel" printers and is fully supported by a nationwide Dealer network as well as comprehensive operating manuals.

WORDCRAFT 80 retails at \$395; a complete system with a letter quality printer would cost between \$5,000 and \$6,000. And, of course, the system can still run the many business computing programs that are so readily available for the Commodore Microcomputer System.

Available from Commodore dealers:
RETAIL PRICE **\$395**

OZZ. THE COMMODORE INFORMATION WIZARD

THE INFORMATION WIZARD PUTS YOU IN CONTROL.

The Wizard—OZZ is the first computer program ever to give you real freedom to tackle your problems in your own way.

That is made possible because OZZ is an advanced information system capable of 'magical' transformation allowing you to perform an almost limitless range of tasks.

It has intelligent features that let you decide its working parameters.

You choose what information to store, what calculations to make, how reports and lists are printed and so on.

Even if you've never been near a computer before, the Wizard will help you set OZZ to meet your individual requirements.

OZZ APPLICATIONS.

OZZ is invaluable in any professional environment, be it business, engineering or science.

Some of the fields where the Wizard can help you include:

- Inventory Control
- Management Information
- Mailing List
- Appointment Scheduling
- Medical Record Keeping
- Library Systems
- Accounting
- Invoicing
- Cost Analysis
- Materials Control

OZZ SYSTEM OVERVIEW.

OZZ is written entirely in machine code, directly in the language that the computer understands and not in BASIC or other language requiring interpretation before each operation.

This is important because it allows OZZ to be a far faster and more intelligent program.

SETTING UP FORMATS AND STORING INFORMATION.

A data base editor defines the information to be stored and how it is to be displayed on the screen.

This data base editor is used to draw a 'form' on the computer screen.

From the form you've drawn, OZZ interprets the nature of the information to be stored and opens a corresponding information file.

The form is recorded in the system and you enter information simply by filling in the appropriate 'boxes' on the form.

You can define and record up to ten forms in this way and so create up to ten different information files.

All file management is handled automatically by OZZ. Each file grows in size as additional information is entered, thus using all available capacity to its fullest.

advanced Business Software for the 8000 Series



OZZ PROGRAM SPECIFICATION.

Program language—Machine Code
RAM requirements—32K bytes
Max. No. of files in database—10
Max. record size—252 bytes
Min. record size—1 byte
Max. No. of records in each file—64,000 or to fill disk capacity.
Record structure—User defined
File structure—Direct access/dynamic allocation
Record access—Relative number/keyfield/sequential search
Calculator precision—14 digit max.
Calculator functions—Addition/ Subtraction/multiplication/ division/percent
Calculator program—Plain language
Calculator programmable steps—16 max.
Calculator output—user defined—right justified
Print output—User defined
Max print page length—76 lines
Print headers and footers—Automatic
Max. No. of print formats stored—10
Select/analyze criteria—multiple. Greater than/less than/equal to based on full record mask.

RETAIL PRICE **\$395**

SEARCHING FOR INFORMATION.

Stored information can be found very quickly in either of two ways.

By computer allocated number (relative record number). Or by name (key index).

You can also 'nudge' either forwards or backwards through an information file in numeric or alpha-numeric order.

A fast search facility allows OZZ to 'hunt' through a file for a particular piece of information.

For example, say you told OZZ to search for the word 'BRISTOL'. OZZ will hunt through the file and display on the screen any record containing the word 'BRISTOL.'

CALCULATIONS.

OZZ has a unique programmable calculator that performs arithmetical operations.

This calculator is very simple to use as it is programmed entirely in plain language.

You can enter, for instance, commands like 'INVOICE TOTAL = GOODS TOTAL + POSTAGE.'

PRINTING DOCUMENTS.

A unique document editor defines the content and format of reports, lists and other printed information from the files.

This document editor is a special form of word processor and you can indeed use it as one.

The content and format of the document to be produced is displayed on the computer screen.

You may alter the content and format of the document and insert additional text at will, thus providing total control over the final printed result.

The document editor may be used in conjunction with the programmable calculator to print calculated results. Document formats may be stored for future use.

ANALYZING INFORMATION.

OZZ provides you with sophisticated facilities to analyze the information held on any file.

You can base your analysis on any number of criteria.

For example, a commercial user can produce a list of all customers living in town X with an outstanding balance greater than Y and the total business conducted with them over the past year.

Such facilities are of particular value for management information and experiment analysis.

OZZ. THE MANUAL.

A detailed instruction and reference manual is supplied with every OZZ system.

This manual is written so as to be easily understood, even by people with absolutely no experience of computers, and contains several illustrations and worked examples.

OZZ. ADDITIONAL DEALER SUPPORT.

Most Commodore dealers will be happy to provide you with additional support for a slight additional cost.

This can take the form of providing staff training if required, or pre-setting the OZZ system to meet specific requirements.

OZZ. HARDWARE REQUIREMENTS.

OZZ is designed to run on a Commodore 8032 computer together with a Commodore printer and one Commodore disk unit.

The disk unit may be any current Commodore unit supporting DOS 2.X.

Exact file capacity will depend on the number and type of disk-unit used in the system.

Please consult your dealer for advice on the best configuration to meet your requirements.

COMMODORE SOFTWARE

Our policy is one of continuous development and improvement and although we make every effort to ensure the accuracy of this catalogue we do not accept any liabilities for error or omission.

The programs listed in 'Commodore News' are designed for general application only and no warranty or other guarantee can be given as to their accuracy or fitness for a particular purpose. The Company shall not be liable for any loss or damage arising out of the use of the same. It shall be a condition of every sale and purchase of a program that the purchaser accepts all risk of any damage resulting from the use of any program and such acceptance shall be deemed to have been made when the purchaser gives an order for a program or programs.

Programs are subject to copyright and unauthorized copying is strictly prohibited. We are obliged to carry out an aggressive policy of enforcement against infringement. Your co-operation is appreciated to ensure a good future supply of programs.

Dear Advertiser:

If you have a story to tell the computer user world, why not run an ad in Commodore News. Circulation of over 25 thousand and growing! For complete information, contact: **Commodore News Editor, 950 Rittenhouse Rd., Norristown, PA 19403.**

PROGRAMMING AIDS

PASCAL (32K PET/CBM, disk only)

Pascal, the highly-praised structured programming language is now available for the PET. PET Pascal operates either in resident mode with the compiler in RAM or in disk mode with the compiler on disk. Resident mode offers an extensive subset of Pascal and is used for the development of smaller programs, with the advantage of being extremely quick and simple to use.

Disk mode offers all the features included in the *Pascal User Manual and Report* by Jensen and Wirth allowing linked programs of up to 3,000 lines which may be extended further by chaining.

The editor is similar to the BASIC editor with the additional features of automatic line numbering; upper or lower case; switch to BASIC; renumbering; switch from resident to disk mode; find, change and delete all the range facilities; compile (with various options to save, print, display, etc.); execute (in disk mode); hexadecimal to decimal conversion and vice versa; BASIC direct-mode commands; DOS support; plus link facilities.

Features of Pascal include:

1. ALGOL-like block structure
2. Powerful data structuring techniques
3. Recursive calls

4. Runtime error checking
 5. Dynamic variable allocation
 6. Greater program legibility
- While extensions to standard Pascal include:
1. Dynamic specification of filenames
 2. Input of strings
 3. Hexadecimal numbers and I/O
 4. Bit manipulation
 5. Machine language interface
 6. Memory and VDU access
 7. Catchable I/O errors
 8. Random number generator
 9. Program chaining
 10. PET clock interface
 11. Separate compilation (linking)

A manual in excess of 100 pages is included; comprising an introduction to Pascal; a beginner's guide and a reference manual. Finally, the Pascal system diskette includes a few example programs to aid rapid learning. Simply a MUST for the discerning PET programmer.

RETAIL PRICE \$295

ASSEMBLER DEVELOPMENT SYSTEM

(32K PETs, disk only)

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 whole package is written in assembly language and runs extremely efficiently.
2. The system includes a screen-based editor very similar to the BASIC editor, but with the additional functions of Find, Change, automatic line numbering, line renumbering, repeat key, block delete and all the DOS SUPPORT commands.
3. Both source files and the KIM/TIM/MDT format object files, reside on disk for full flexibility of operation.
4. Two loaders are supplied to enable the user to load any RAM location.
5. 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.
6. 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.
7. The package is comprehensively documented.

RETAIL PRICE \$99⁹⁵

ENTERTAINMENT

GALAXY ONE

(8K, 16K or 32K PETs, disk only)

This disk, the first of a new series of game disks, contains all the games on our cassette-based Treasure Troves.

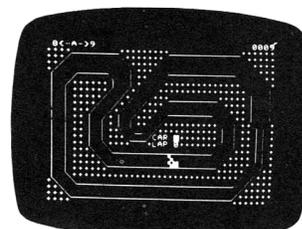
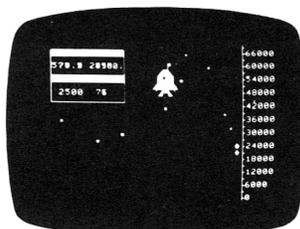
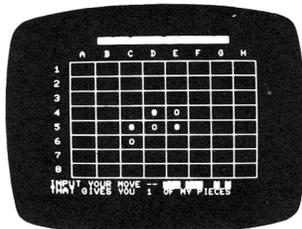
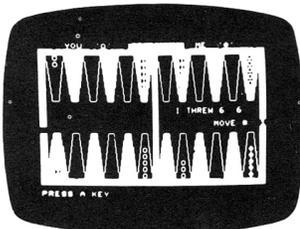
The first six Treasure Troves contain some of the first games to be written for the PET, so Galaxy One provides an opportunity to discover the early history of PET games at an inexpensive price. Disk access to any one of the twenty-four programs means that your favorite game can be up and running in seconds.

Galaxy One comes with a comprehensive manual. No longer will you be stuck half-way across the Galaxy, as the Klingons mass for attack, wondering which button you should press!

Galaxy One contains the following:

- Lunar Landing
- Wumpus
- Jumbo Jet Lander
- Draw Poker
- Concord Lander
- Wrap Trap
- Super 9 x 9
- Black Jack
- Glider
- Awari
- Reverse
- Polarix
- Life
- Rotate
- 3D Tic Tac Toe
- Target Pong
- Galaxy Games
- Off the Wall
- Space Trek
- Formula 1
- Space Talk and Space Flight
- Othello
- Backgammon
- Crypto

RETAIL PRICE \$49⁹⁵



EDUCATION

STRATHCLYDE BASIC COURSE

BASIC is a simple language for programming computers. This program will help you learn how to write programs and use the computer to solve problems in any area which may be of interest to you—whether it be Mathematics, Engineering or Computer Science.

The course consists of several parts:

1. The workbook. You are expected to write various things in it as you work through the course. Use a pencil, and keep an eraser handy—it is one of your most useful instruments.
2. The PET/CBM computer. While you are learning to program, you should have a machine entirely for your own use. It is difficult to master BASIC by sharing a machine or looking over somebody's shoulder.
3. A cassette tape, which contains a number of programs which are run into the PET/CBM and used to help you study the course.

The course is organized as a series of *units*. Each unit consists of some *reading*, one or more *experiments*, and sometimes a quiz when you are sure that you have understood everything in the course up to that point.

To succeed, you need only work through the course steadily, and do all the exercises. Be your own teacher: do not let yourself go on unless you have understood each unit thoroughly. Good luck!

RETAIL PRICE \$19⁹⁵

BASIC BASIC

The thoroughly interactive programs enable the first-time user to get a complete grasp of the fundamentals of BASIC. The course consists of nine lessons with material less formally presented than the Strathclyde BASIC Course, making full use of the PET/CBM's capabilities as a teaching aid.

Like Strathclyde BASIC, the program enables you to proceed at your own pace, only going on to the next lesson when you are fully confident that you have grasped the concepts of the previous one.

Unlike Strathclyde BASIC, all the teaching material is entirely contained within the suite of programs.

Thus, the only equipment the student needs is a PET/CBM and a few hours of spare time.

RETAIL PRICE \$14⁹⁵

Saved Terminal Charges Pay for 25 PETs

Frank Winter, Dean of Sheridan College in Ontario, Canada, has 25 Commodore PET® microcomputers. These are mainly used for teaching remedial Maths. But not all the microcomputer work at Sheridan is concerned with teaching Maths and Science. He recently recorded this interview with Microcomputers in Schools and Colleges.

Q. How long has Sheridan College been using computers?

A. We've been on terminals, I guess, for about two or three years, and one day I happened to get the bill for the three on-line terminals we had. We were using them for prerequisite Maths. We had one dedicated line, a concentrator, and three terminals. When I got the first bill I got such a shock, that I thought, 'There must be some other way of doing this.' I had attended a show in Boston in August of '77 and I looked at the Apple, the Tandy and the PET. The first two consisted of separate boxes with lots of loose wires and I could just see the various bits and pieces gradually vanishing as term progressed, so we ordered two PETs.

They came through in December '77 and I asked a computer science student to take one unit of the prerequisite Maths program we'd been running on the terminals to see if he could have a go at adapting it for the PET. It worked out very well, and I thought 'All right now!' and based on that simple experiment, I cancelled my contract with the terminal company and there I was, left in limbo.

I got four faculty members together to define the outline of the objectives, one faculty member to write the book that we would use, and then I hired two student members, who worked all summer long, from May right through the vacation to program Micro Math and have it ready to go by September. Right now it's four semesters or two years later and with the money that I would have paid out on rental charges for the terminals and phone line, I have completely paid for Sheridan's 25 PETs.

Q. What's the annual throughput of students?

A. It's hard to say. It varies since it's a review program, it averages about 80 a year.

Q. Micro Math was your first application. What other applications are running in Sheridan?

A. Well, once we got that running, that same summer, one of the photography instructors had seen what the PET could do after he had looked through some demonstration tapes, so he took the summer off and started preparing a PET tutorial series on photography. He wrote a couple of programs himself and we wrote

several other photography programs for him. As well as using the PET for photography, we also use it for music, for sight reading and drill practice where our Drama Theatre/Music option have to know how to read music and so on. Of course, we use PET to teach BASIC programming, a large number of students from our Data Processing division learn BASIC on PET, as well as students from Transportation Planning, Research Techniques—even the Secretarial girls learn BASIC programming.

In addition to that they learn Word Processing on the PETs. We also have some of the big machines at \$17,000 each, but the chairman of the Secretarial Division feels that there will be so many of the girls working in business offices which will be using micros that they should be familiar with the microcomputer as a word processing *and* data processing facility. So that's the way forward. Now we use PETs in our Technology Department for control and monitoring of external devices. Another rather unusual example is where we use PET for Art Fundamentals where we establish objectives and we have objective type tests and students are referred back to books if they make mistakes and so on. As well as the use of PETs in teaching, we have all sorts of other uses.

Q. Could you elaborate?

A. The Vice-President uses it to calculate alternative strategies for salaries. Simply because there are so many changing parameters this was a massive pencil and paper exercise. Now on the PET he can change any parameters and get instant feedback either on the screen or on the printer. So he's happier than a son-of-a-gun doing that. Another good example is our finance department where one of the girls there used to hire a person part-time for two weeks to calculate fringe benefits. We wrote a program for her, she does the same thing with a complete hard copy in two hours.

We use PET in our library to regulate and keep track of all our films. Not only will it print out overdue films with the name and phone number of the person concerned, but also at the end of the year it will give us a complete statistical package of the usage of the films, and a complete annotated film catalogue in addition.

Q. What about extra-curricular activities?

A. Yes, well, we have about 4,000 students in the college passing through on further education. So we run courses on Monday, Tuesday, Wednesday and Thursday nights, all day Saturday and one day during the following week. Now we keep Thursday clear on the Oakville Campus in order to run what we call 'learning by appointment' where anybody can just phone up and book a microcomputer at any time.

Q. Really, anybody?

A. Anybody at all: businessmen, students, anybody for just \$3 an hour and then they have access to our programs and we have about 600 programs at the present time. If they're High School students they get in for \$1 an hour. In the last dozen Thursdays we've had almost every computer used by High School students, who keep coming in. They can't get access during the day so they're coming in doing data processing work that they should have been doing at school, in the evening—they're that keen. It's a very active place. It's beginning to get difficult to book time. The biggest rush is during income tax time when we have people coming in to do their income tax with the aid of a program developed by Jim Butterfield.

In fact, the Deputy Minister called me and asked whether Sheridan was going into competition with the big income tax accounting companies. One of the chaps came up from the Ministry for a run through and said 'It's just too bad I haven't brought my figures!' I use Jim's program to do my own income tax.

Q. Your mention of Jim Butterfield brings me onto the question of User Clubs. Is there any tie up between Sheridan College and the local users group in Ontario?

A. Well, it's called the PET 2001 Club and has one of the largest groups in Canada. It has about 200 members. Jim Butterfield comes every week and we have about 100 people that meet in the college. We use a big video projector which will give us a 10 by 12 foot picture on a flat white screen with 600 lines resolution and we have 2 or 3 PETs all set up, so the facilities are very good.

Q. Apart from providing facilities to the PET 2001 Club, do you offer any specific help to other educational users?

A. I'm president of another group called the Ontario Society for Microcomputers in Education, which we call OSME for short. We felt there was a need for some kind of organization. So a chap from Master University and myself got together and we sent out invitations to people in education. Now we have 70 regular members but I guess there are over 200 who come in occasionally to see what is happening. We meet the second Monday of every month. In addition to that we also run a computer users group at college and the flow of people in and out of that group who are interested in microcomputers is fantastic.

Q. Could you tell me about the activities of OSME and the college computer users group?

A. The objective of both groups is to help people share information. As far as OSME is concerned, we find that many

(continued on page 8)

SAVED

continued from page-7

administrators are being called upon by their bosses to line up all the microcomputers available, decide which one their education group will buy and justify their choice. So these people are just desperate for information. Having made a hardware choice they're looking for compatible software. We find that the sharing of software is really worthwhile exercise. We have a session that runs over 2½ hours every month to enable people to demonstrate programs, how they could be used with the physically handicapped or disadvantaged or how they could be used in elementary groups.

There is another group that uses mainframe computers but right now we would like to focus on microcomputers. The other thing we do every time is to run a copy session in both groups. We find that these copy sessions are one of the most popular activities. People come along with a program they have just developed and make copies for their colleagues on one of the computers in the lab and everybody goes home with maybe 10 to 12 new programs written by other teachers.

Q. Do you consider it important to establish facilities where teachers can exchange software?

A. Oh, absolutely. And in addition to that, it gives a person the chance to demonstrate how good this program really is and how well it works. You see, what is important is that these sessions provide program authors with educational feedback. This guy will say, "I find that this works better for me" and the other guy says "Well, I tried that, and it didn't work too well." Then it's interesting to compare why. Those are the kind of things you can't get from any other source. Another useful facility for educational users is a regular newsletter, but we can't afford to do one of our own yet, so we're picking one up in the States and adding our own material onto it.

Q. Are there any links between your educational user group and Commodore?

A. Yes, we get a lot of help from Jim Dionne, the sales manager over there. If we run workshops, he'll donate prizes, or if there are programs which we require for demonstration, there's no problem there. Sheridan College is in fact at the moment serving as a beta test site for the new 8000 series, which we look forward to seeing come into production.

Dear Reader:

If you have a story to tell the world about how you are using a PET or CBM computer for fun or profit, why not submit it for inclusion in the Commodore News. Send it to: **Commodore News Editor, Commodore Business Machines, Inc., 950 Rittenhouse Rd., Norristown, PA 19403.**

Dear Advertiser:

If you have a story to tell the computer user world, why not run an ad in Commodore News. Circulation of over 25 thousand and growing! For complete information, contact: **Commodore News Editor, 950 Rittenhouse Rd., Norristown, PA 19403.**

Commodore PET User's Club

The Commodore Newsletter is an effective method of sharing current information, ideas, programming techniques, hardware interfacing, and cost effective applications relating to the Commodore PET/CBM computers, between PET/CBM owners, users and the manufacturer.

The Newsletter contains articles pertaining to product news, details on current software, time saving tips on programming (with listings), peripherals and attachments, and a Users Directory to other sources of PET/CBM information.

Members are encouraged to submit articles for publication in the newsletter.

The subscription fee is \$15.00 for one year within the United States and its possessions and \$25.00 (U.S. currency) outside the United States. You may backdate your membership to the beginning of any year provided you specify this on your application. Backdated issues will be sent immediately and thereafter you will receive subsequent monthly issues. Backdated

issues for 1979 will begin with Newsletter #1, while backdated issues for 1980 will begin with Newsletter #8.

Commodore Newsletter Membership

Application Form

Date: _____

Name: _____

Address: _____

City: _____

State: _____ County: _____ Zip: _____

Please backdate my membership

to _____ (year)

Please renew my subscription one year

Make check payable to:

Commodore Business Machines, Inc.

950 Rittenhouse Road

Norristown, PA 19403

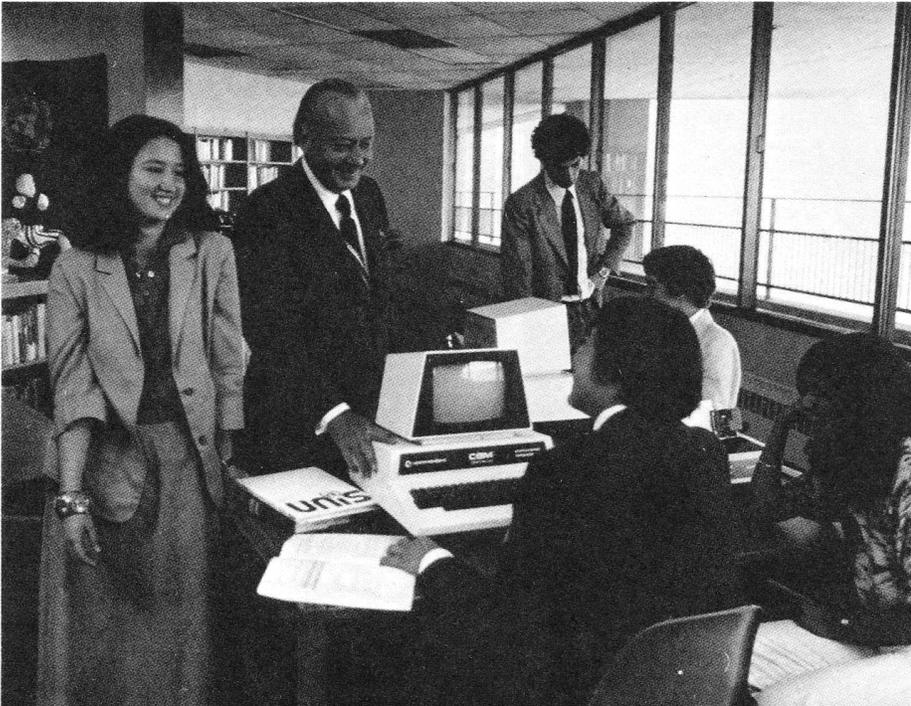
Attn: Editor, Commodore Newsletter

Commodore to Organize Advisory Board on Education

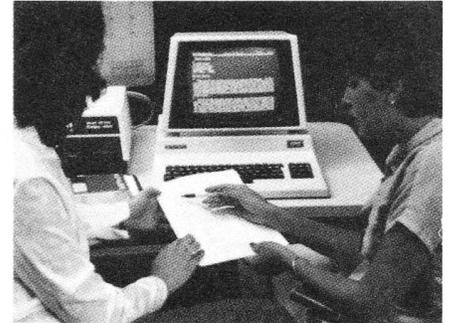
In order to better serve the education market, Commodore is planning to form a National Educational Advisory Board. The Board will be composed of professionals from the university level to the primary school level, as well as private business schools. The function of the Board will be to provide direction to Commodore on how to satisfy the special needs of the education market. Anyone interested in becoming a board member—or anyone who has any suggestions regarding its composition and course—is urged to contact:

*Dr. James McElroy
10 Park Place, Room 235
Morristown, N.J. 07960*

Commodore International Marketing



Commodore is a strong supporter of multicultural activities. Pictured is Irving Gould, Chairman of the Board, presenting several computer systems to the United Nations International School in New York.



In the United Kingdom and elsewhere, Commodore-sponsored training programs help first-time users become "computer literate" to get the most out of their personal and professional computers.

One of our major strengths as a company is our international marketing organization.

The key is our ability to provide strong direct marketing support in each individual country. The success of this "country" concept is especially apparent in our Computer Systems Division. In the United Kingdom and Germany, for example, we are the leading supplier of microcomputers in the "under \$10,000" range and even in Japan, where we compete against the largest electronics companies in the world, we hold a respectable share of the microcomputer market. In the United States, it has been estimated that Commodore has the second largest number of installed microcomputers, and that we dominate the educational market. Both U.S. and international marketing staffs were bolstered this year with the addition of new personnel to support our business development activities.

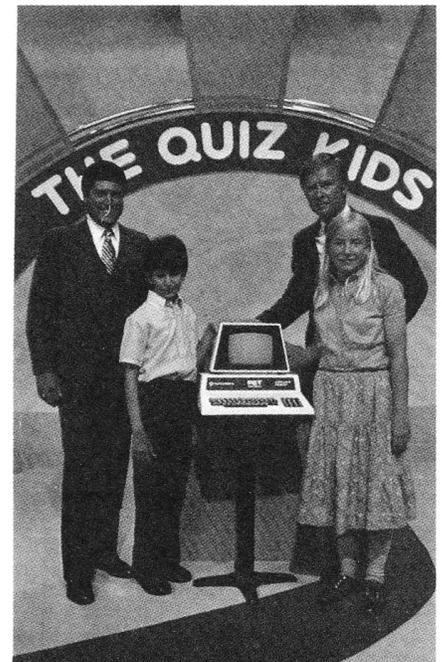
In June, 1980, we converted our private U.S. distributor system to a Commodore owned and operated distribution network which will function under the umbrella of a Computer Systems Sales Division. Seven separate regional distribution centers were in place by the end of June, each headed by a general manager who will provide close geographical support to the dealers in his region in the areas of sales, training, promotion, service and warehousing. To introduce this new concept, we established a "Regional Dealer Support Program" in June

which resulted in the largest single sales month in the computer division's history.

In spring, 1980, we launched a major national advertising campaign in the U.S. designed to promote Commodore's "presence" and highlight our business and educational computer systems. In addition to magazine advertising and television game show promotions, we provided posters and other point of sale materials to all of our Commodore dealers.

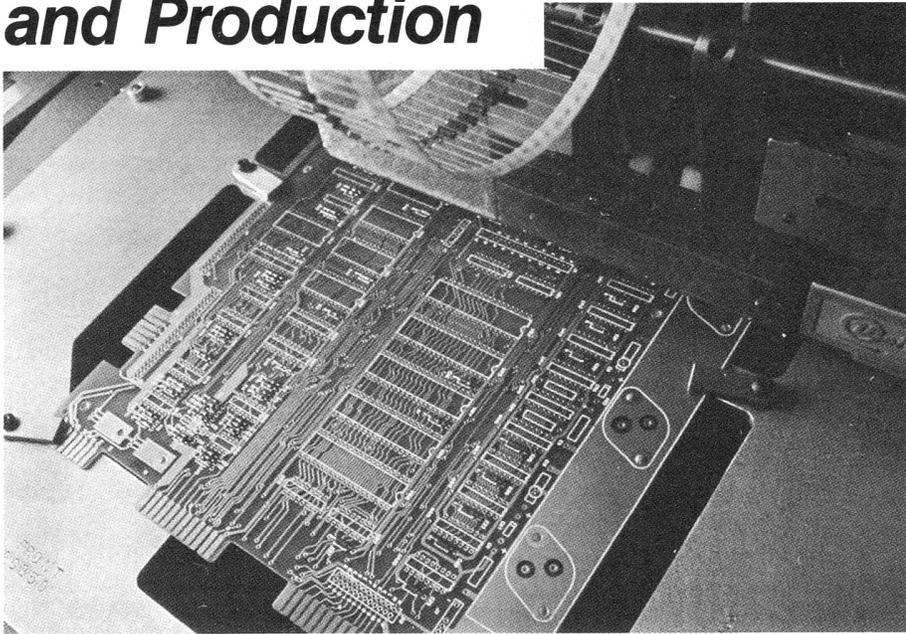
A few of the special events we attended during the year included Hanover Fair in West Germany—the largest industrial exhibition in the world; the National Computer Convention and twice-yearly Consumer Electronics Shows in the U.S.; and the first annual PETFair, staged in London by our Commodore U.K. subsidiary. These special events provided high visibility for Commodore products in the national trade and consumer press, among dealers, educators, and association executives.

Commodore products were sold in nearly 50 countries by the end of the fiscal 1980. We expect to increase our penetration of several more international markets in fiscal 1981 but are adhering to our philosophy of not entering a new country market until we have the production capacity and operations/marketing staff to assure success.

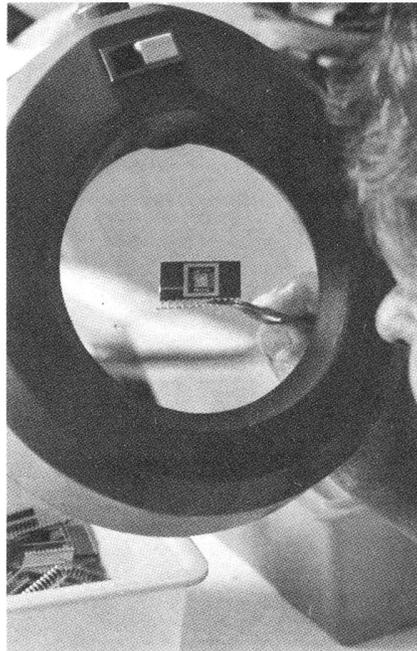


In the United States, the PET and CBM computers were promoted on a variety of television game shows during fiscal 1980, including Hollywood Squares, Name that Tune, The Price is Right and Quiz Kids.

Commodore Manufacturing and Production



As part of Commodore's company-wide capital investment program, new automatic insertion equipment was installed at the company's computer production facility in Santa Clara, California.



Tiny integrated circuits contain permanent (Read-Only) and temporary (Random-Access) memory circuits called ROMs and RAMs . . . the building blocks of modern computer.

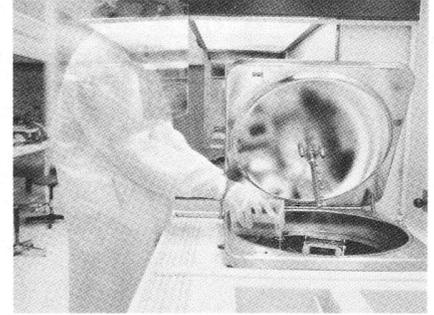
Several major projects were undertaken in fiscal 1980 to improve and expand our production facilities. Virtually every division of the company had been involved in and will benefit from these capital improvement programs which affect not only the quantity of products we are able to produce, but also their quality and complexity.

Expenditures on plant and equipment in fiscal 1980 totalled \$10.6 million and are budgeted at \$13 million for fiscal 1981.

By the end of the year, we had completed about 75 percent of a \$4 million capital improvement program at our MOS Technology plant in Valley Forge, Pennsylvania which manufactures primarily semiconductor devices for sale to outside customers and for use in Commodore products. Improvements included renovation, refurbishing and expansion of the entire plant, and the introduction of new processing technologies which cut our manufacturing costs in half. Significant production efficiencies came from the expansion from "3" to "4 inch wafer" processing facilities. As an indication of the efficiencies involved, a 4 inch wafer may contain 1.7 times more semiconductor chips than a 3 inch wafer.

In 1981, in addition to the programs already cited, we will: construct a new 75,000 sq. ft. building in Norristown, Pennsylvania which will house a U.S. computer manufacturing plant; complete a new 27,000 sq.ft. computer manufacturing facility in Dallas, Texas; begin manufacturing computer products in Braunschweig, West Germany; and explore the feasibility of establishing a semiconductor facility in Europe.

Commodore Research and Development



Special "darkroom" lighting conditions are required by the photo lithography processes used to etch the surface of the light-sensitive silicon wafers.

Commodore invested \$6.6 million (5 percent of total sales) in research and development during fiscal 1980.

These research dollars are particularly well spent since, as a vertically integrated company, we derive multiple returns from each new product we develop. A few years ago, for example, it was MOS Technology's 6502 "Computer-on-a-Chip" microprocessor which gave rise to the now-famous PET computer system. Commodore's success is founded on a strong research and development effort, and we are committed to maintaining our position as a leader in the development of new technologies and the products they inspire.

These important activities—and achievements—are a tribute to our outstanding research staff, which is decentralized into several creative engineering teams within our operating divisions. This decentralization provides us with a wealth of new product ideas from several "independent" sources and enables us to tie R&D activities more closely to manufacturing, process engineering and marketing within each division.



New RAM and ROM memory circuits are checked for technical accuracy.

The Great American Solution Machine.

More than 50,000 students, teachers and administrators solve problems with this reliable Commodore computer.

You're looking at the Number One computer in education today.

In fact, you've probably already used it.

The Commodore.

You know it teaches. Guides. Challenges. Analyzes. Organizes. Simplifies.

But did you know it has capabilities that are far beyond its price range?

You can accomplish tasks with The Commodore at a price/performance ratio that leads the field.

You can also count on The Commodore showing up for class every day.

It's a remarkably sophisticated, remarkably reliable machine. Around the world in

schools—and businesses too—there are more than 100,000 Commodore computers now at work.

If you sense a snag in the flow of knowledge in your classes, we think you should challenge The Commodore.

Compare it against any computer in—or above—its field.

See if it won't raise the level of interest and accomplishment among your students.

And simplify the complex in your administrative duties.

All at a price that makes it stand alone.

For the name of your nearest authorized Commodore dealer, just write to: Commodore Business Machines, Inc., 950 Rittenhouse Rd., Norristown, PA 19403

Call now toll-free. Ask for operator 973:
800-824-7888
(In Calif., 800-852-7777)
(In Alaska and Hawaii, 800-824-7919)



10 things you wanted to know about MICROCOMPUTERS . . .

- 1. What are microcomputers anyway?**

Quite simply—computers, but utilizing the benefits of silicon chip technology which makes it possible to deliver more “computing power for your money” than ever thought possible before the microprocessor chip became a reality.
- 2. What good is a microcomputer to me?**

For doing the company's payroll, or controlling stock, or helping keep track of creditors, or balancing the books, or maintaining a mailing list, or storing business information, or wordprocessing, or using as the world's most powerful programmable calculator, or
- 3. Isn't my company too big/small—to benefit from having a microcomputer?**

We have yet to find a company that is too big, Commodore PET Microcomputers are busy providing solutions for more than 100,000 people all over the world . . . quite a few are helping to run Commodore as well! At the other end of the scale, many PETs are helping accountants, realtors, lawyers—and many other small businesses—operate more effectively.
- 4. Aren't I too old/too busy/simple not clever enough—to learn about computers?**

The majority of our programs are designed to be capable of use by first time users after only half a day's installation by your local Commodore dealer. Some programs, like our accounting packages, require about 2 days user training. Your local Commodore Systems Dealer will be pleased to advise you on what level of installation you require. NO FURTHER KNOWLEDGE OF COMPUTERS IS REQUIRED.
- 5. My Data Processing Manager says many microcomputer manufacturers will go out of business as competition in the industry heats up—what guarantee do I have that Commodore will still be around in, say, five year's time?**

Your Data Processing Manager is probably right. Many small companies are unlikely to survive the increasing competition. Commodore, on the other hand, has been in the forefront of selling and manufacturing high technology products for over 20 years, owns its own Silicon Chip manufacturing facility, launched the world's first microcomputer, has sold over 100,000, and, consequently, has the most experienced dealer network.
- 6. My Data Processing Manager says your program must be poor—decent software costs at least \$10,000.**

Your Data Processing Manager is almost completely wrong this time. Because Commodore programs are sold in hundreds, rather than ones or twos, it is possible to spread their development costs and, consequently, many first-class programs are available within a range of \$400 to \$1,000. Installation and training by your local dealer, depending on your requirements, could double these figures. However, the total cost of installing a Commodore program should rarely, if ever, exceed \$5,000. More specialized programs, such as those in the Commodore Approved List, could cost a little more, and, of course, in the rather unlikely event of you requiring a custom program specially written to your own specification, the cost could well be around the \$10,000 quoted by the D.P. Manager.
- 7. So how much would the complete system cost me including the cost of computer and program?**

Your total bill for a complete system, including computer, disk unit, a suitable printer, the application program and professional installation/training by your local dealer would cost you between \$25,000 and \$45,000.
- 8. What if my business suddenly expands and I need more computing power in the future?**

The Commodore PET is highly expandable. Up to 8 different disk units can be operated within a single system. A wide choice of printers can be operated by the PET depending on the volume of printing required. In some situations (like multistation word processing), you might wish a number of PETs to be able to access a single disk unit (now possible with the aid of MUPET). PET can expand as your business expands.
- 9. How do I choose a reputable dealer?**

Choose a dealer who offers value-for-money hardware; who has the expertise to advise you on the right hardware/software combination for your needs; who can authoritatively guide you through the complex maze of computer specifications and technical changes; and who can offer 24-hour field maintenance or custom programming if you require them. Choose a Commodore Commercial Systems Dealer.
- 10. So how do I find out more?**

Simply fill in the coupon below and send it off to: Commodore Business Machines, Inc., 950 Rittenhouse Road, Norristown, PA 19403—or contact your local Commodore Dealer.