USING YOUR COMPUTER

OFFICIALLY APPROVED BY COMMODORE

C⊂ commodore COMPUTER

USING YOUR COMPUTER

Information about silicon chips and microcomputers appears in the press every day. Manufacturers talk about new this, faster that and all at a lower price than ever before. But when you evaluate it all, it is evident that a computer is only a tool. Its value, is only in the use to which it is put. That's what this catalogue is about – the uses of Commodore computers.

Introducing Commodore Approved Products

When products are as good as Commodore's, others want to participate. Some companies would say "No, thank you. We'll do it ourselves." Not Commodore. We have recognized the value of letting others in on a good thing. When someone wants to develop an idea for use with our computers, Commodore doesn't say no. Instead we answer, "Wonderful! How can we help?"

This approach has put Commodore at the forefront of the microcomputer business.

Applications are the key and by encouraging other people to develop applications that complement our own, Commodore are able to offer a wide variety of uses for our computer systems. They are prepared not just by computer specialists but by specialists with expertise in the field of the applications.

This catalogue tells you some of those applications. The ones included are considered by Commodore to be 'tops' in their field. They've been awarded the Commodore Seal of Approval. Before a product receives approval it is rigorously tested to ensure that it performs all that you, the user, have a right to expect from it. It must be as strong, fool-proof, dependable and as user-friendly as we know how to make it. The testing is conducted by Commodore personnel and by experts in the area of the application. Only when it has passed all these tests can a product earn the seal that is shown on the cover of this catalogue.

Approved products generally come under one of three catagories: hardware, software or accessories. "Software" is the name given to the set of instructions that tell the computer how to perform specific tasks. These sets of instructions are also called "programs". You may know or want to learn to program and plan to write your own software. These days it is common (and usually much less costly) to buy a "ready made" program to do the task you have in mind. This catalogue is full of them. One is sure to suit your needs.

CONTENTS

"Hardware" is the name given to the computer itself and to devices that are attached and work with it. These are physical things which you can see and hold. The hardware extras that can be linked to your Commodore computer are numerous. The approved hardware products are also described in this catalogue. Many of them make possible whole new areas of applications. Have a look.

"Accessories" are all the 'extras' that make it even easier to use your Commodore computer system. Included are furniture, supplies, books and much more.

Our free enterprise approach works and we have over one hundred Commodore approved products to prove it.

About this Catalogue

Above you will find a list of the contents of this catalogue to help you find the applications you might be interested in. In addition at the end of the catalogue there is an index. If you have a specific idea of your application, you may be able to find it there more easily.

Some general information about the application area and some of the products is explained at the top of each page. The rest of the page contains the details about all the related products. The company which market the product is given at the end of the description so that you may contact them if you want more details. Of course, your local Commodore dealer will be able to help too by demonstrating and supplying the product to you.

A guide to the U.K. retail price, excluding VAT is given with each product. The cost of the computer system required to operate the product is NOT included. You will find these prices on the Commodore price list.

Most of the products in this catalogue are available for both Commodore 4000 and 8000 models. (Many are available for earlier models too.) Sometimes programs for the 8000 series will carry out more functions or handle more items than the same program on the 4000 series. Where the product is not available on both 4000 and 8000 systems, the model for which it is available is indicated.

Finally if you do not see your application in this catalogue, do not hesitate to contact either the Commodore Information Centre or a Commodore dealer. The number of products approved by Commodore is constantly increasing and it could be that what you require is being developed. New uses for Commodore computers are becoming available all the time.

If you want to know how a computer can help you – look to Commodore. We're microcomputer experts.

Information Management:
a system of storing information with the ability to retrieve, report and update all or selected parts of it.

Every organized activity, whether business or social requires records to be kept and accessed. In the past this meant mountains of paper stored in costly filing cabinets. Locating one statistic often meant long searches through many files.

Now record keeping can be computerized. Not only will the storage space be reduced to a small fraction of the previous volume but the speed of locating information and creating reports is amazing.

The information need not be stored or handled in a format prescribed by the program. These software packages for Commodore computers permit the specification of a file and record design that best meets the requirements of the application. The ability to sort records into a specified order or to search for individual records or groups of records meeting certain criteria is available. Revisions and updates can be easily accomplished. Arithmetic and totalling functions are also built-in.

Reports are an essential part of organized activities. They provide a means of monitoring progress and a basis for making plans. These

THE MANAGER

A sophisticated set of programs for the storage, retrieval and manipulation of information. The user is able to establish formats and specify record patterns and composition thus tailoring the Manager to suit his particular requirements.

The operator can start new files, retrieve old files, revise information, generate reports and statistics. Files can be modified, summarized, sorted and rearranged. The Manager can be linked into wordprocessing programs so that information can be extracted from the records.

☐ Record formats completely user defined.
☐ Field lengths of up to 79 characters.
☐ Up to 120 data fields over two input screens.
☐ Record storage – record lengths of 253 characters maximum.
☐ Number of records up to 16,000
☐ No limit on number of datafiles.
☐ Multi-key sort with up to 16 keys.
☐ Arithmetic capability with 99 registers for intermediate results.
☐ Link to Wordpro and Wordcraft wordprocessors programs.
☐ Ability to sort in ascending or descending alphabetic or numeric order.
☐ Up to 20 selection criteria per report.
☐ Multiple reports can be defined for any datefile.
☐ Ten levels of breakpoints with or without subtotals.
☐ Output to 80 or 132 column CBM or ASCII printers or to diskette or screen.

Price £275.00
8000 SERIES ONLY

Commodore
Business Machines
0753 79292

DMS DATA MANAGEMENT SYSYEM

An easy to use records management system designed for use by clerical, management and secretarial personnel. DMS creates and stores records, sorts them into order and searches for batches of records which meet various selection parameters.

It is ideal for personnel, stock agency, patient, student, parts, contracts, client records etc.

☐ Records can be up to 1000 characters in length.
☐ Batches of records can be retrieved using up to 8 selection criteria.
☐ Amends and updates records and sorts by date/numeric/alphabetic criteria.
☐ New files can be created from the main file or separate files of information merged to create new files.
☐ Links to Wordpro and Wordcraft and has an in-built mini wordprocessor for letter writing.
☐ Links to Visicalc for data analysis and accepts data for storage.
☐ Open ended linking facility to link DMS with user-written software.

Price £290
8000 SERIES ONLY

Compsoft Ltd
0483 898545

SILICON OFFICE

Silicon Office is an integrated, simple to operate information management system. Inherently flexible, Silicon Office allows you to design your own record cards, invoices, reports, standard letters etc. Worked examples in the reference and training guides help you to tailor Silicon Office to your specific needs.

☐ All features of the system reside within the computer, so it is quick and easy to perform tasks which require a combination of wordprocessing and access to your data files.
☐ Built-in communications enable you to transfer information between one Silicon Office station and another, via telephone lines.
☐ Programmability means that frequently used sequences may be stored away, for subsequent recall and automatic execution. Also program chaining and 'Goto' and 'if . . . Goto' abilities.
☐ Calculations accurate up to 14 decimal places. Numerous arithmetic functions and complete calendar arithmetic.
☐ Screen-based system. The wordprocessor supports page widths of 20 to 125 characters and allows you to 'rule' multiple columns of independent text.
☐ Full access to stored data files and arithmetic functions is available with wordprocessing.
☐ Up to six data files (thirty on Hard Disk) may be in use at one time, facilitating easy linkage, cross-referencing and transfer of information from file to file.

Available for 8096 systems

Price £790
(£990 22 Mb Hard Disk version)

Bristol Software Factory
0272 277135 and 0272 277117

information management packages include useful functions for creating reports about the facts on file. Sorting and selecting options are available so that reports may include all or only specified information. The stored information can be linked to word

processing packages (see pages 5, 6 and 7) to enable standard letters to be personalized or for the preparation of debt payment reminders, etc.

The list of applications for information management is endless. For example, an estate agent can keep records of all the properties he has for sale and produce reports of those available or address letters to the sellers. Personnel records might be stored and lists by length of service produced or searches carried out for people with specified skills or mail labels generated. Social clubs could store membership records and by linking to a word processor produce personalized renewal notices using the selection criteria to identify those which are due.

These are just a few of the possibilities. Many more are in common use such as patients records, investment portfolios, sales leads, job costings, repair records, sports standings, etc. Whatever your information processing requirements, there is a package below to meet your needs.

THE ADMINISTRATOR

An easy to use, user defined program for all types of information storage and retrieval. It allows records of unlimited lengths and facilitates full mathematics, serarching, sorting and reporting. Record and reporting formats can be set up by the user.

☐ High speed retrieval.
☐ Full reporting facilities.
☐ Full batch processing suite.
☐ Alphanumeric record names and full indexing.
☐ Number of transactions per record limited only by disk size.
☐ Labelling and mailing facilities and links to wordprocessing packages.
☐ Calculations, percentages and decimals up to 5 places.
☐ Analysis and statistics.

Price £495.00
8000 SERIES ONLY

Stage One Computers Ltd
0202 735656

PETAID

File management program with record handling for personnel, stock, medical, mailing, accounts, insurance applications. Full mathematics on each record with searching and reporting. The system allows direct enquiry via any alphabetic field on the record. A 'browse' feature allows movement up and down the file for selecting and printing. Simple and speedy filing and retrieval by alphabetic or numeric record name. Full links available with wordprocessor for automatic mailing etc.

☐ Up to 508 characters.
☐ Alphanumeric record retrieval.
☐ Can access any record on most fields.

☐ Full reporting facilities and fully user defined.
☐ Analysis and statistics.
☐ Searching, indexing and sorting.
☐ Common records on same file (if required).
☐ New file can be set up from old file.
☐ Wordprocessor links.
☐ Labelling and Mailing features.

Price £250.00

Stage One Computers Ltd
0202 735656

COMBIS

Combis is essentially a computerised card index.

☐ 2,000 records can be stored per disk.
☐ The user can define up to 10 sections (fields) within a record and up to 24 characters per field.
☐ A single key sort facility makes it possible for the user to sort records into alphabetical or numerical order.
☐ Selective searches can be made using up to 10 specified parameters at one time.
☐ Numeric comparisons can also be made.
☐ Can be linked to Wordpro.

Price £150.00

Merchant Systems
01-583 6774

OZZ

☐ Allows creation of information layouts.
☐ One key field for sorting.
☐ Search on key field or any part of record
☐ Maximum record size 252 characters.
☐ Uses one or two disk drives.
☐ Full system, maximum record size, permits 2880 records per file.
☐ Up to 10 data files per set of disks.
☐ Can do calculations on information in records.

Price £300.00
8000 SERIES ONLY

Commodore
Business Machines
0753 79292

Word Processing: a means of entering, storing, editing and transmitting text.

A word processor is the secretary's best friend. No need to type a letter or report many times because the boss had second thoughts. It is simple to change words, phrases, or paragraphs (or to correct misspellings) on the word processor. No need to type identical documents over and over to send several clients personalized copies. These word processors can be linked to data base systems (see page 4) or to its own list of names and addresses. Type the letter once, store it, make the link and the various names are automatically inserted as the letters are printed.

The word processor is the boss's best friend. The efficency introduced by the system will allow staff to take on more work or assume new responsibilities. Better quality letters and documentation can be produced in less time than before, and the correction facilities will enable anyone to produce perfect letters themselves even if they can't type.

WORDCRAFT

Wordcraft provides a fully featured solution to the needs of a busy office. Wordcraft turns your Commodore system into a very accomplished word processor, as good as many dedicated word processing systems many times the price.

☐ 5 status lines on the screen show position on page, left and right margins, tab settings, page number, name and date of document, disk file name and free characters in the computers memory.
☐ Text creation and editing by character, word, line or block.
☐ Standard paragraph selection for document assembly.
☐ Automatic merging of mailing list and standard letter.
☐ Search and replace facility.
☐ Standard tabs, decimal tabs, indentations and centre lines.
☐ Emboldening, overprinting, underlining, half line spacing, proportional spacing, subscripts andsuperscripts are all available (subject to printer type).
☐ Detailed index of documents filed on disk.
☐ Page numbering.
☐ Program complete with training documents recorded on disk, training and reference manual.

Price £425.00

**Dataview Ltd
0206 865835**

WORDPRO-PLUS SERIES

Wordpro turns your Commodore computer into a sophisticated wordprocessor with the same features found in other professional word processing systems costing thousands of pounds more.

Wordpro offers exceptional text editing, document storage and typewriter quality printing as well as the benefit of increased productivity inherent to wordprocessing. It includes all the entering, editing, memory and printing features important in wordprocessing.

There is a range of packages, Wordpro 1 to Wordpro 5-Plus, available for all Commodore computers.

☐ Display a directory.
☐ Right justification and alignment.
☐ Automatic page numbering.
☐ Insert variable text to main text.
☐ Global search and replace.
☐ Ability to link files.
☐ Pitch selection (8/10/12/15 characters per inch).
☐ Variable line spacing.
☐ Pause function.
☐ Math functions.
☐ Superscripts and subscripts.
☐ Decimal tabulation.
☐ Begin printing from any page.
☐ Simultaneous input/output.
☐ Automatically saves tabulations.
☐ Independent headers and footers.

Price £275.00 Wordpro 3 Plus
£395.00 Wordpro 4 and
5 Plus

**Professional Software
0707 42184**

UNIVERSAL TYPESETTING PROGRAM

The Universal Typesetting Program (UTP) turns any Commodore computer running a Commodore-approved WP program, into a powerful typesetting terminal. The UTP utilises easily-memorised codes which you insert into your text wherever you want a change in typesetting parameters. Disks are then sent to Commodore-approved typesetters, where a programmable interface creates phototypesetter-compatible disks. The interface automatically incorporates all the commands necessary to drive Compugraphic optical (Editwriter) or digital (8600) typesetters.

☐ All normal functions of sophisticated typesetting equipment accessible through mnemonic codes.
☐ Codes stored on disk in a series of translation tables, which is the software loaded onto the programmable interface.
☐ Codes converted into typesetter-compatible commands by the typesetting company, passing word-processed encoded text through the programmable interface.
☐ Comprehensive descriptive manual, describing three levels of operating capability: standard formats, advanced and professional.
☐ Selection of standard formats, to enable popular typographical lay-outs to be achieved with minimum of coding and of typographic knowledge.
☐ Facility for creating user's own shorthand codes, using word processor's global search routine to replace these with full UTP codes.
☐ Clear description of how to code multilingual, mathematical and technical characters and symbols.
☐ Simple description of how to carry out functions, such as global and selective reduction of inter-letter spacing.

Now word processing is a friend to the publisher as well. Manuscripts can be typed on the Commodore computer system and then reviewed, edited and revised. When the text is finalized, it can be linked to a typesetter thus producing camera-ready copy at a fraction of conventional costs and without errors being introduced.

Commodore word processors are used in many businesses. Solicitors find them invaluable for preparing legal documents. Making a few changes to a standard document eliminates long tedious retyping. If a client requests minor changes of wording, the revised document is produced while he waits. Insurance firms issue personalized correspondence regarding claims or policies. Reports to directors are produced with ease and accuracy.

Manufacturers of many types of equipment generate technical literature and user manuals on word processors. The "locate and replace" facilities make it easy to keep these documents up to date. Authors of all sorts of literature do their writing and/or rewriting on these systems.

Schools, ad agencies, newspapers, magazines etc. link together several word processing computers and a single storage device (see page 22). This allows an editor or teacher who is on the network to easily review all the writing being done.

Any situation using written communications can benefit from word processing. Make your selection from those below.

☐ Page make-up routines possible by second (post-galley) pass through interfacing system, as alternative to scissors-and-paste.
☐ Successful use of UTP codes virtually eliminates time-wasting proof reading chore, and cuts typesetting bills by upwards of 40%.
☐ Silicon office, Wordcraft and Wordpro WP programs are UTP-compatible (other programs made UTP-compatible dependent upon demand).

Price £240.00
8000 SERIES ONLY

The Electronic Village
01-994 6477

PHOTOTYPESETTING SERVICES

Randall Typographic supply a phototypesetting service.

☐ A publication that is properly typeset looks professional and authoritative.
☐ A typeset page is more legible and the evenness of the spacing encourages the looker to read it.
☐ Typically, typesetting takes up 40% less space than typewriting. This results in a reduction of paper and consequently, paper costs, storage, postage and freight.

Price for typesetting text captured on CBM word processor with UTP codes; £5 per 1000 words or yard of bromide.

Randall Typographic
01-994 6477

MULTIFONT

Multifont combines with Wordcraft to give multilingual or technical capability when used with certain daisywheel printers.

German, French, Spanish, Russian, Japanese (Katakana), and scientific and legal documents can be viewed on the screen before printing with a matching daisywheel.

☐ Clear 'keyplans' with each multifont set.
☐ Selection of 4 fonts at turn of a switch.

Price £172.00
8000 SERIES ONLY

Cytek (UK) Limited
061-872 4682/3

ALPHA PLUS

Alpha Plus is a 4 set character generator for all models of CBM. It is easily fitted and uses only the existing character generator socket and the second cassette port. It will work with all other plug-ins or extension boards which may be fitted.

Alpha Plus offers two new sets of characters in addition to all the original letters, numerals and graphic symbols on the Commodore system.

☐ Mathematics symbols including: modern mathematics symbols for set notation, Greek alphabet, infinity character, graphics: lines, angles and corners.
☐ Graphic symbols including: electronic symbols, horizontal, vertical and diagonal lines.
☐ Games and education.
☐ Special characters; foreign languages.

Price £50.00

Avon Computer Rentals
0454 415460

Management of Finance: controlling the monetary aspects of a business.

Money – when it comes down to it, that's what it's all about. Making a profit, having cash on hand when it's needed, avoiding unnecessary interest payments, these things are the fabric of a business. Managing all this with speed and accuracy often make the difference between success and failure. This is true of large companies where financial accountability is great and of small companies where capital may be limited.

Quite simply, the best means of managing finance is through good accounting procedures achieved with the speed, accuracy and convenience of a computer. Commodore computers have a range of software in this field. They extend from fully integrated accounting packages to simple systems that resemble single ledger methods.

Stock control is also included. The benefits of easy access to information such as stocks below minimum levels, re-order quantities and suppliers details is

COMMODORE ACCOUNTING SUITE

An open item accounting suite comprised of 6 modules.

The programs are menu driven with an operator 'help' facility associated with each screen display. Each program prints a large number of related reports and lists which can be selected using different criteria ie daily, month-to-date and particular sales area.

COMMODORE PURCHASE LEDGER WITH NOMINAL HEADINGS

Maintains a file of supplier accounts. Invoices, payments and credit notes are posted to each account.

☐ Handles 400 supplier accounts with 100 nominals.
☐ Each invoice may be analysed over 6 nominal headings (plus VAT).
☐ Maintains year to date and last years totals for each nominal account.

Price £399.00

COMMODORE SALES LEDGER WITH INVOICE PRINTING AND NOMINAL HEADINGS

As sales ledger with Invoice Printing above but also handles 100 nominal accounts. Nominal accounts may be used to analyse product sales. Each invoice may be analysed over 5 nominal headings.

Price £399.00
8000 SERIES ONLY
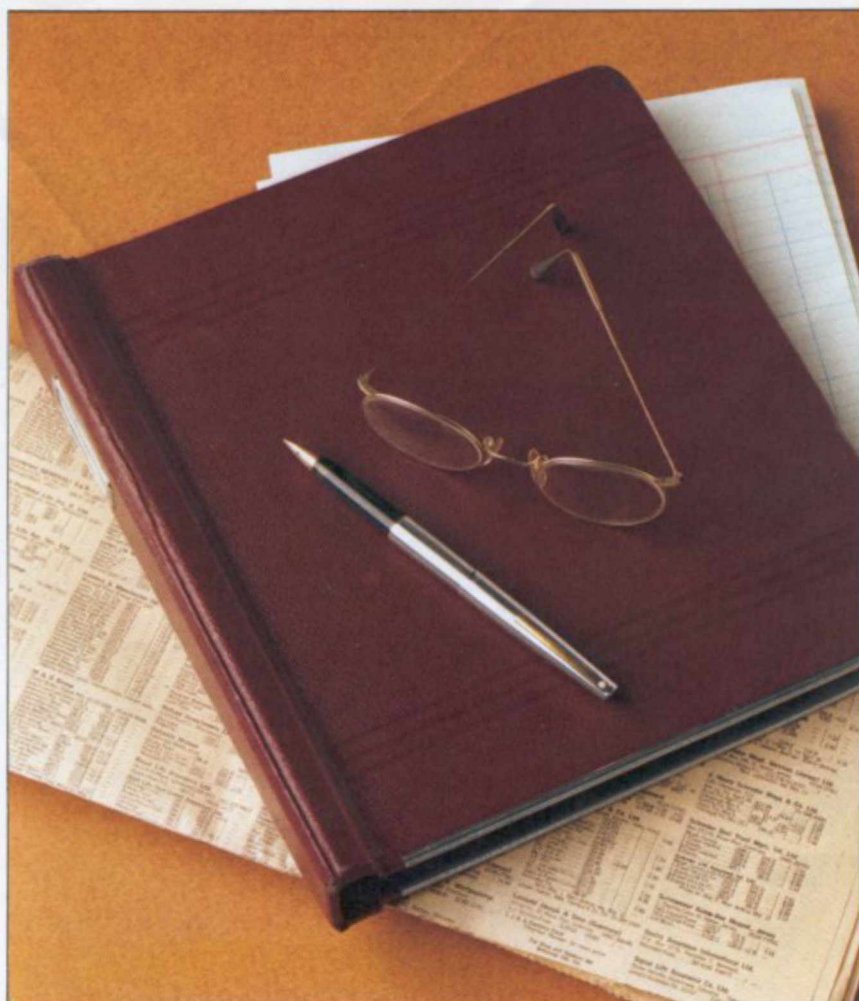
obvious. The ability to calculate the value of goods on hand at any time is also a self-evident asset. In addition you can use such sophisticated options as bar code reading, automatic links to purchase ledgers, etc.

Payroll accounting is an application that really shows the power of computers. Not only can individual payslips be printed easily but the record keeping and reporting facilities are outstanding. Analysis by department, totalling of tax or National Insurance by period and automatic printing of year-end forms are all easy and fast. Coin analysis is as simple as keying in a few items. The computer does the rest.

In the field of management of finance the accuracy of the computer is a plus. Of course the operator can make mistakes as with other methods. However, unlike a calculator, a computer can "remember" everything that has been keyed in. Making a correction involves simply changing the wrong entry. The computer combines the error-correction convenience of pencil and paper methods with the high-speed calculation.

Computerize your accounting with Commodore. The software is described below for general business applications. Some specialized packages for the professions are described on pages 16 & 17.

COMMODORE SALES LEDGER WITH INVOICE PRINTING

Maintains a file of customer accounts and invoices, payments and credit notes to be posted to each account. Full financial details of each invoice are kept on file until the month end following payment.

☐ Handles over 1000 customer accounts.
☐ Invoice allows up to 20 lines per page and may be multi-page.
☐ Customer accounts may be grouped into sales areas for report printing.
☐ Trade and settlement discounts are catered for.

Price £299.00

COMMODORE INTEGRATED SALES LEDGER WITH STOCK CONTROL

Combines sales ledger and invoicing with the Stock Controller to enable files of customer accounts and stock items to be maintained. Following production of an invoice the system will post invoice details to the customer account and reduce stock quantities accordingly.

☐ Handles up to 1000 stock items with approximately 300 customer accounts.
☐ Maintains information on stock levels and outstanding purchase orders.

Price £799.00
8000 SERIES ONLY

COMMODORE INTEGRATED SALES LEDGER WITH STOCK LIST

As Sales Ledger with stock control but without full stock control. The stock list function records sales purchase and current stock levels.

Price £599.00
.8000 SERIES ONLY

COMMODORE STOCK CONTROLLER

Maintains records of stock levels, outstanding purchase orders, stock allocated to sales and free stock. Data on each stock item includes: reference, description, minimum and maximum stock levels, recorder levels and quantity, cost and selling prices and supplier code.

☐ Up to 2500 stock items.
☐ Records all stock movements and allocated 'out' movements to a cost centre.
☐ Prints purchase orders.
☐ Validates current stock using weighted average method.

Price £199.00 4000 SERIES
£399.00 80000 SERIES

Anagram Systems
0403 50854/58153

MICROFACTS ACCOUNTING SUITE

A totally integrated accounting suite, consisting of:–

Open Item Sales and Purchase Ledgers
Nominal Ledger
Stock
Invoicing
Costing

☐ Menu driven.
☐ Totally integrated yet available in any combination of modules.
☐ Multi-company and multi-ledger accounts may be stored on one set of disks.
☐ Up to 5 companies with 5 Sales/Purchase Ledgers per company.
☐ Up to 10,000 records.
☐ Double-entry book-keeping principles maintained.
☐ Discounts taken or allowed on invoices.
☐ Detailed or summarised Aged Debtor Report.
☐ Full Trial Balance.
☐ Profit and Loss Account.
☐ Balance Sheet.

Price £300.00 per module.
8000 SERIES ONLY

MMS Software Ltd
0234 40601

BASICPAY AND SUPERPAY

Two payroll systems to cut the cost of processing the payroll. The program takes no more than 35 seconds per employee for build up to gross/net pay calculation and printing a pay-slip in duplicate. Only two hours each week for a typical payroll of 200.

Basicpay is for small companies who want a flexible low cost system. Superpay is designed for larger companies and is a more comprehensive package.

BASICPAY

- ☐ Automatic calculation of Tax and National Insurance for weekly, monthly, four weekly or irregular payment periods.
- ☐ Automatic advancement of tax week for holiday periods.
- ☐ Automatic coin analysis for cash payments.
- ☐ Option to process all employee payslips automatically.
- ☐ Can produce single payslips.

Price £125.00

SUPERPAY

- ☐ Includes all of the features of Basicpay.
- ☐ Easy to read departmental analysis for up to 26 departments, with up to 20 rates and adjustments.
- ☐ Automatic printing of year end P60's, P11's and P35's.
- ☐ Automatic printing of credit transfers.
- ☐ Tax code changes from Budget measures automatically implemented.
- ☐ Net pay rounding to any amount less than £10.00

Price £350.00

Computastore
061-832 4761

PEGASUS ACCOUNTING SUITE

An intergrated accounting system, Pegasus handles input of ledger entries in a similar way to traditional techniques. Operations are selected from a menu on the screen. The suite consists of 5 modules each of which is available separately, although invoicing requires the sales ledger program. A comprehensive management reporting system is included.

INVOICING

- ☐ Creates invoices and credit notes and posts them automatically to the Sales Ledger.
- ☐ Maintains product details including description, analysis code, selling price and 3 discounts.
- ☐ Maximum capacity 2000 products.

SALES LEDGER

- ☐ Accounts may be open item or balance forward accounts.
- ☐ Maximum capacities for each file: 1500 names and addresses, 8000 transactions.

PURCHASE LEDGER

- ☐ Maintains suppliers details including credit limit and comment facility.
- ☐ Suppliers account status available at any time.
- ☐ Facility to print cheques for payments.
- ☐ Capacities as Sales Ledger.

NOMINAL LEDGER

- ☐ Controls the nominal ledger up to trial balance stage.
- ☐ Creates full profit and loss accounts and balance sheets with headings and narrative to specification.
- ☐ Maximum number of transactions per file is 4000.

STOCK CONTROL

- ☐ Maintains details of items of stock, stock movements, value of stock and purchase orders.
- ☐ Capacities for each file: 2000 stock records, 4400 stock movements.

Price from £1500 for complete suite
8000 SERIES ONLY

Pegasus Software Ltd
0536 520910

MICRO 40/MICRO 80

A fully integrated accounting system which may be linked to invoicing and stock control programs.

- ☐ Supports 800 Sales Accounts and 800 Purchase Accounts.
- ☐ 400 Nominal Accounts.
- ☐ 241000 total postings may be made each month.
- ☐ Open Item Ledger for current month.
- ☐ Brought Forward balances are held for preceding 3 months.
- ☐ Details and Aged Balance available on any named.
- ☐ Trial Balance and Aged Analysis of debtors and creditors.
- ☐ Comprehensive Audit Trail.
- ☐ Profit and Loss Account and Balance Sheet with facilities for budget, variance and comparatives.
- ☐ Label printing for statement and mailing list.

COMINV

- ☐ Invoicing.
- ☐ Sales analysis for up to 10 product groups.
- ☐ Automatic posting to Micro 80 and Nominal Ledgers.

COMSTOCK

- ☐ 4000 stock items.
- ☐ Stock number and description.
- ☐ Quantity in stock, items on order from supplier and customer.
- ☐ Reorder level.
- ☐ Cost, sales price and total sales (year to date).

Price £750.00 MICRO 40
£950.00 MICRO 80
£150.00 COMINV
£150.00 COMSTOCK
£1,100.00 MICRO 80 with integrated stock and invoicing
£1,500.00 MICRO 87 (Hard Disk version)

Merchant Systems
01-583 6774

Statistics:
the analysis, interpretation and presentation of sets of numerical data.

Many aspects of business and science can be quantified and analysed in numerical form. Information is collected or calculated and then displayed in a standard manner that is easily understood and compared. Several software packages to do this have been written for the Commodore computer system.

Graphs and histograms enable quick visual presentation of temperature fluctuations, flow rates, stress loads and other scientific data. Production levels, sales figures, profitability and other business information also can be emphasized by being presented visually.

Calculated values such as standard deviations, medians, etc., are useful figures when analysing many types of data samples or complete data. These figures are commonly used in fields as diverse as sociology, chemical research, and sales analysis.

Whatever your need for analysis or presentation of numerical data there is a Commodore approved product below which can help you.

DATA ANALYSIS/ STATISTICAL PACKAGES
HISTOKIT

An interactive program for the analysis of large sets of data. Draws true high resolution histograms and allows you to choose the range of data and the number of classes to be plotted. Data can be read from disk or cassette, or the user can input data from the keyboard. Statistical analysis of data will give the mean, standard deviation, skewness, variation, kurtosis etc.
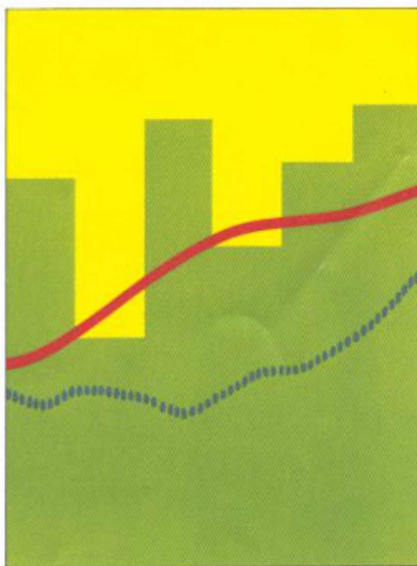
Price £80.00

GRAPHKIT

Versatile, interactive program for handling data, graph plotting, curve fitting, statistical analysis.

☐ Will draw best-fit curves and obtain the curve equation.
☐ Plot data points and curve on various scales.
☐ Check statistical significance.
☐ Check, correct and re-run data to investigate alternative curve fits or modify data.

Price £80.00

MULTIVAR

Multiple linear regression analysis. Data can be input for up to seven variables and analysis of the regression between all of them or their logged values can be made. Gives equation relating chosen variables and interpolates values.

Comprehensive statistical analysis of data includes:
☐ Explains sum of squares.
☐ Reduces proportion of variance.
☐ Partial F.
☐ Multiple correlation coefficient.
☐ Standard error of estimate.

Price £100.00

FUNKIT

An interactive program for function evaluation and plotting. Any function (up to 100 characters) can be entered plus any number of variables.

Variable names can be up to six characters in length, otherwise they are automatically abbreviated.

☐ Wide range of functions.
☐ Automatic checking.
☐ Program can modify: plot the function against the chosen variable and tabulate values of the function for a range of values of the variable.

Price £100.00

Technical Software Centre
0234 750 102

Management planning:

a means of providing the facts and projections required to make sound business decisions.

Planning is the key to success. It helps you to see opportunities as they arise but more importantly it enables you to prepare so that, when an opportunity occurs, you are in a position to take advantage of it. To remain successful, businesses must grow in an organized fashion, not in a haphazard manner.

In today's world the planning process can be particularly difficult because there are so many factors which influence the operation of a business. What is more, many of these variables are outside of the control of the business. Interest rates change frequently, as do exchange rates. freight charges. material costs and so on. It can become a nightmare

FINANCIAL DIRECTOR

A financial modelling system designed for business decision-making. The program is of direct interest to managing directors, general managers, sales and production managers – i.e. to anyone who has responsibility for decision-making.

- ☐ Is powerful and very fast in operation.
- ☐ Is ready for use immediately – no setting up required.
- ☐ Puts real decision power at your control.
- ☐ Models 24 periods (months) with cashflow profit and loss, balance sheets and management ratios.
- ☐ Enables consolidation of models to produce overall company plans.
- ☐ Fully explains all terms and techniques used.
- ☐ Extends from basic instruction to sophisticated modelling use.
- ☐ Enables newcomers to financial modelling rapidly to become expert.
- ☐ Needs no previous computer knowledge.
- ☐ Operates on Commodore 8000 series computers with 8050 disk drive and Commodore or Ascii printer.

Price £750
8000 SERIES ONLY

Dataview Ltd
0206 865835

OFFICIALLY APPROVED BY COMMODORE

knowing where to start when looking at future costs and estimates.

A computer is an ideal tool for use in planning. A planning program enables you to set up an actual or theoretical situation and then, with a few simple keystrokes, change the parameter of the situation and see the overall effect these variables will make. You can push the parameters to the limits of possibility in easy stages. This allows you to see how to optimize your advantages and minimize your risks.

By conventional methods, these calculations would have taken many men days or even weeks. With a computer, several possibilities can be explored in a matter of minutes. Results can be stored in the computer's memory and recalled at a later date for further review.

An important aspect of planning is scheduling the various parts of a specific project. Delays at a particular stage in production may be crucial to the overall timing of the project. This can result in such damaging consequences as cost penalties or loss of orders. One of the programs described below ensures that you are constantly aware of these time constraints and will help you to meet your targets.

A Commodore microcomputer is an ideal choice for this type of application. In addition to powerful programs such as those described below, the computer itself is priced so that the executives can afford to have one specifically for making projections.

FINPLAN

Finplan is a financial planning and modelling package which enables today's executives to simulate their financial strategies. It may be used to see what effect a 12.5% wage increase would have, or whether it is worth investing in the suggested new factory with its additional production facilities. Financial modelling has been the domain of the large computer and its experts, but Finplan provides an easy-to-use tool to all levels of personnel.

☐ Financial plans
☐ Budget (Rolling 3 yr, 5 yr, etc).
☐ Investment appraisal.
☐ Buying strategies.
☐ Man-management.
☐ Production planning.
☐ Discounted cash flows.
☐ Net present values.
☐ Forecasting.
☐ Trending.
☐ Data extrapolations.
☐ Linear regressions.
☐ Inter-related models

Price from £475.00
8000 SERIES ONLY

**McDowell, Knaggs and Associates Limited
0905 28466**

VISICALC

Visicalc is the powerful 'electronic worksheet' that replaces paper, pencil and calculator to help you solve numerical problems. It can quickly calculate and display the results of complex problems. You can ask 'what if?' . . . change one variable and Visicalc automatically recalculates the entire analysis.

☐ Worksheet is 63 columns wide and 254 lines deep.
☐ Recalculation feature allows change of any formula or number and all associated numbers are recalculated.
☐ Replicate feature duplicates entries to other parts of the worksheet.
☐ Window facility splits screen to view separate parts of the worksheet.
☐ Formats and justifies entries.
☐ Prints out worksheets.

Price £120.00

**Rapid Recall
0494 26271/35634/8**

HORNET

A program for Project Planning and Management, Hornet accepts information about all the activities that make up a project. Date schedules, bar charts and resource histograms are produced using Precedence Network techniques (Critical Path, Pert etc.).

Hornet's versatility makes it suitable for all kinds of projects (currently including relining blast furnaces, planning new consumer products and maintaining submarines . . .!).

An optional link to Silicon Office connects Hornet project information to your own recording and reporting requirements.

☐ Easy to use.
☐ Comprehensive specification.
☐ Established techniques.
☐ Fast turn-a-round.
☐ 1024 activities.
☐ Powerful resource management.
☐ Bar charts.
☐ Resource Histograms.
☐ Schedules.

Price £990.00 to £3,000.00
8000 SERIES ONLY

**Claremont Controls Ltd
0669 21081**

Costing: determining and recording the amount to invoice for your services.

In any business, resources are limited and so their allocation must be monitored closely. Proper charging for these resources, whether to other departments or to outside customers, is essential in order to maintain a healthy profit picture. Planning and accurate record-keeping are also vital in ensuring that the optimum use is made of all resources.

In any project, one of the most cost-consuming elements is time. With one of the programs described on these pages, your Commodore computer can help control the allocation of time and other resources. It can also perform accurate costing calculations for billing purposes. Management reports on the utilisation of resources are also possible.

All of these features can assist you in maximising the profit-potential of your business or service. For example if you provide a service to others you can use

JOB COSTING

A package specially structured to meet the needs of any organisation requiring an easy to operate method of accurately recording expenditure against cost centres. A typical application area would be a plant or vehicle hire company.

The 199 cost centres, set by the user, may range from Departments to Sites or Products to Vehicles.

The expenditure to be recorded can have as many as 99 classifications, eg. Wages, Materials, Fuel and Overheads.

Descriptions of both cost centres and the cost categories are easily changed to suit individual requirements, allowing full flexibility in areas of applications.

☐ Full Audit Trail of transactions.
☐ Detailed accounting period tabulations of all transactions by Cost Centre.
☐ Comprehensive Cost Centre report totals by category within each Cost Centre.
☐ Facility to carry costs over from one year to the next; user able to set budgets for individual Cost Centres.

Price £250.00

**Microprocessor Services
0482 23146**

TIME COSTING SYSTEM

A system for recording and costing employee's time spent on particular jobs. The system holds records for up to 1000 jobs. It stores time and costs totals for each employee on each job. Various work types may be defined by the user and any three can be used on each job. Units of time, normally in .25 hour units, may be varied to suit the user. In addition expenses chargeable to the client and the amount billed to date are accumulated.

☐ Work in progress summary by cost centre/partner.
☐ Individual job cost sheets.
☐ Employee periodic and time analysis to date totals.
☐ Completed jobs profit/loss summary.
☐ Client/job index list.

Price £750.00

**Computer
Services Midlands
021-382 4171**

OUTSIDE SERVICES PROGRAM

A specialised program for service companies to streamline the preparation of wage sheets and invoices. Typical applications include: mini-cab companies, delivery services, service and maintenance companies. Each entry comprises: customer, customer reference, price charge, staff member, staff cost, details of job.

☐ Invoicing program totals customer items and prints the bill with a surcharge and VAT where appropriate.
☐ Report summarising all invoices printed at that session is available.
☐ Staff wage slips and a report are printed.

☐ For self-employed staff wage sheets include the option of rental/VAT deductions.
☐ Maximum capacitites:
200 customers
90 staff
9,600 invoices per (3,300 on 4000 series)

Price £220.00

**L & J Computers
01-204 7525**

QUICK COUNT TIME RECORDING SYSTEM

The Time Recording System will provide practising accountants with a comprehensive cost ledger and work-in-process summaries. Other benefits include, staff performance summary, fees listing with comparison of costs, a partners' summary of unbilled work in progress and fees billed.

☐ Reports include:
Detailed Cost Accounts
Work-in-Progress Summary on client basis
Fees Listing with profit/loss reconciliation
Staff Performance Summary
Partners' Financial Summary
Control Totals
Clients Indices
☐ Client reports in reference number sequence or reference number sequence within partner code.
☐ System capacity 10 partners, 70 staff, 1000 clients, 6,745 live transactions.

Price £750.00
8000 SERIES ONLY

**Quickcount Ltd
01-202 5486**

your Commodore computer to prepare wage sheets and invoices. In addition reports can be generated to inform the client of the position with regard to work in progress.

The time costing function is particularly useful for practising accountants and there is a program especially for their purposes.

Programs designed to handle various aspects of costing are detailed below.


CHARGEHAND

A costing system to keep track of purchase, sales or job costs. Analyses data over three main headings ie for any item, within department, or within franchise of a garage business. Works from your dockets or invoices to a picture invoice/docket on the computer screen. Maintains monthly brought forward figures and provides valuable management information.

☐ Multi-job operations.
☐ 24 departments.
☐ 16 cost centres.
☐ Detailed printed analysis.
☐ 5 definable VAT rates.
☐ VAT reports.
☐ Comprehensive error checking.
☐ Monthly brought forward figures.
☐ Month end reports.
☐ Full audit trail.

Price £230.00
4000 SERIES ONLY

The Computer Room
0732 355962
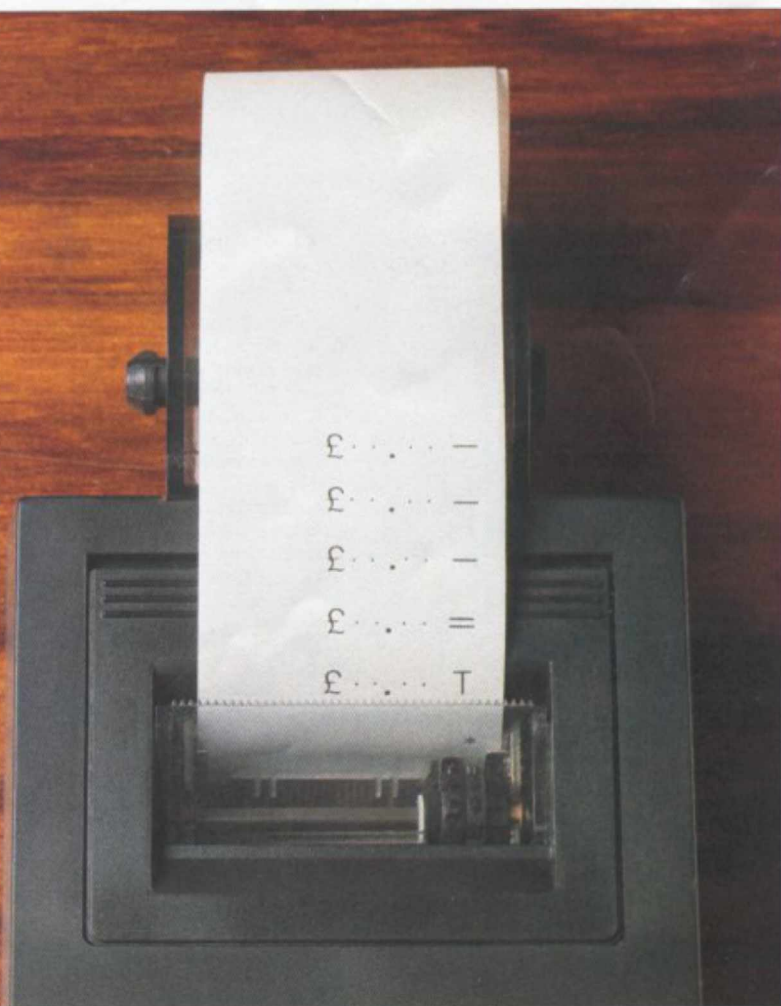
Computers in the professions: tools for the efficient handling of the business or professional offices.

One of the values of the computer is its ability to perform repetitive tasks easily and unfailingly. Nowhere can this be put to better use than in the professional environment. Automating the recordkeeping and accounting aspects of his business releases the professional to serve his clients. He can concentrate on using his specialist knowledge to their advantage knowing that the computer is taking care of the routine areas.

Accounting programs designed for the solicitor, the accounting practice, the contractor and the medical practitioner are described below. Many of the other categories in this catalogue contain programs that may be useful to the professional. Wordprocessors, described on pages 6 and 7, will help with the preparation of letters and documents.
Information processing software, pages 4 and 5, can be used for storing client details and other records.

AUDITMAN

This is the complete accounts production system for the preparation of Final Accounts from Incomplete Records. The input analysis section of the system contains many useful review and control features which greatly assist in creating accurate accounts. Whether clients are sole traders, partnerships or limited companies, and however clients records are produced, Auditman can produce their final accounts.

Numerous features are provided to help the user enter financial information.

☐ Automatic double entry.
☐ Narrative comments.
☐ Repeat transactions or reverse transactions.
☐ Page sub-total verification.
☐ Bank and cash accounts reconciliation.
☐ Check account balance-control account balance.
☐ Recall and display previous transactions list.
☐ Gross and net profit figures with percentages.
☐ Reports available as standard: trial balance, nominal ledger, VAT analysis, bank and cash accounts, audit trial. Some reports may be produced under flexible format control including: Trading account, profit and loss account, balance, directors report.

Price £1,200.00 4000 SERIES
£1,500.00 8000 SERIES

**Computer Services
Midlands
021-382 4171**

DATALEX

Allows full control of solicitors' accounts. Separate office, client and trustee accounts are maintained with extensive checking to ensure compliance with Law Society Rules. Fee-earner time recording and management reporting. Facilities to print ledgers, journals and profit and loss accounts are incorporated.

☐ Will handle up to 2,000 matters including time recording, subject to number of transactions.
☐ Maintains 6 journals for full double-entry book-keeping (Office Account, Client Trustee Account, Petty Cash, Costs Book, VAT Record).
☐ Analysis of bills by practice or fee earner.
☐ Profit and Loss Accounts.
☐ Password control.
☐ Full examination of accounts on screen or printout.

Price £1,785
8000 SERIES ONLY

**Dataview Ltd
0206 865835**

PRACTICE MANAGER

The Medicom Practice Manager is a system for General Practitioners. It maintains the Practice Age/Sex Register, and controls and prints repeat prescriptions. Reports on potential drug interaction can be produced. The system maintains a disease register, gives information for preventative care and regular patient reviews. The system also provides audit facilities for detailed analysis of practice workload.

It is simple to operate and will handle a practice with up to 9 doctors and 25,000 patients.

☐ Patient Registration.
☐ Age/Sex Register.
☐ Repeat script, history, monitoring and writing.
☐ Drug interaction warning.
☐ Patient summaries.
☐ Patient recall, for age group or at risk follow ups.
☐ Items of servicing reports.
☐ Practice address book with selected mailing label facility.
☐ Up to 9 doctors.
☐ Version for 8,000, 16,000 and 25,000 patients.

Price £850.00
8000 SERIES ONLY

**Adda Computers Limited
01-997 6666**
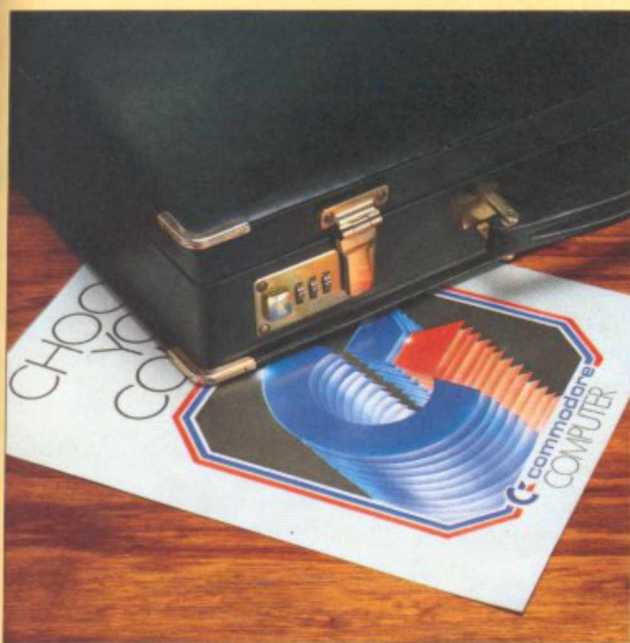
Financial planning and modelling, such as described on pages 12 and 13 might be useful. Time costing, explained on the previous pages, could almost certainly be of value. From this extensive list, it is obvious that Commodore computers offer a great deal to help the professional.

CONTRACTORS ACCOUNTING SYSTEM

An integrated system containing sales, purchase, nominal, subcontractors and contract costing ledgers all on one disk. Full reporting and facilities to produce a profit and loss account, VAT returns, cheques, trial balance etc. are available. Incoming and out-going interim payments are catered for along with Labour and Materials Sub-Contractors, C714 expiry date warnings and C704 annual returns.

- ☐ Fully Integrated system.
- ☐ Contract Costing
- ☐ Open Item Ledgers.
- ☐ Automatic Payment Schedules.
- ☐ Full reporting.
- ☐ Cheque production.
- ☐ Subcontractors Payments.
- ☐ Interim Certificates.
- ☐ Retentions.
- ☐ 2000 Transactions per month.
- ☐ 2000 Accounts per month.
- ☐ Available on floppy or hard disk.

Price £1,100.00
8000 SERIES ONLY

FCG Computer Systems
01-388 7345

CONTRACTORS PAYROLL SYSTEM

A complete payroll system taking into account items such as holiday pay, fares and travel money, C714 Labour Only Subcontractors etc., as per the National Working Rules of the construction industry. Input is transferring information from the timesheets, from which point the system will run automatically, producing payslips and all necessary analysis reports including a contract cost analysis.

- ☐ Contract Cost Analysis.
- ☐ C714 Labour only Subcontractors.
- ☐ Holiday With Pay Stamps.
- ☐ Fares and Travel.
- ☐ Anniversary Prompts.
- ☐ Guaranteed Minimum Bonus.
- ☐ Overhead Mark-up.
- ☐ Ten Additions/Deductions.
- ☐ Payslip Production.
- ☐ Coinage Summary.
- ☐ Full reporting.
- ☐ 350 Employees.
- ☐ Available on Floppy or Hard Disk.

Price £1,100.00
8000 SERIES ONLY

FCG Computer Systems
01-388 7345

OPTI–COMPUTE PROGRAM

A program for ophthalmic and dispensing opticians to facilitate the pricing of spectacles. The program contains all the fees, charges and prices from the NHS statement for the General Opthalmic Services.

Entries consist of a number of single key replies to questions from the screen, in addition to details of the lens prescription. The final display is a facsimile of the price section of the G.O.S.2B form into which the computer writes all the prices, extras, fees, charges and totals ready to copy onto the form. A complete pair of spectacles can be priced in under 30 seconds.

- ☐ Automatic transposition of information to the correct form where an incorrect form is used.
- ☐ Exchange of first and second pairs is automatically carried out where this gives a fee advantage.
- ☐ Revision to prices and fees can be made easily. Alternatively a service is offered to update the program when amendments are necessary.

Price £250.00

Devon Computers
0803 526303

Retail Computing: using modern technology to make your shop more profitable.

A natural application area for computers is in the retail trade. Payments, cash flow, stock levels, accountancy, ordering, mark-up, all of these are part of running a retail business. All of these are also suitable applications for computers.

Several companies that are retailers themselves have put their expertise to work and have developed Commodore approved products in their fields. Some of these, such as the Newsbox and Petrol Station Accounting packages are designed for specific types of shops. Others are more general and would fit into a variety of retail environments.

Included are accounting packages which are delightfully simple in concept. They computerise the

MICRO-SIMPLEX

Micro-Simplex is an accounting program based on Vyners Simplex Cash Book System, used by many thousand of Businesses for nearly 50 years. It provides accounting and control for the smaller business, especially retailers.

- ☐ Simple to operate with Single Entry of information.
- ☐ Automatic calculation of Bank & Cash Balances.
- ☐ Weekly summaries with a full years information available.
- ☐ Any retailer's VAT Scheme.
- ☐ Produces figures for the VAT return.
- ☐ Analysis of receipts over 10 headings, 10 Cash Registers or 10 Businesses.
- ☐ 10 Analysis headings for Purchase of Goods for resale.
- ☐ 40 Analysis headings for Overheads.
- ☐ Accounts for up to 150 unpaid bills.
- ☐ Records Outstanding Invoices and sends out statements.
- ☐ Gives a transaction number for every payment made.
- ☐ Lists all transactions for the Accountant or VAT returns.
- ☐ Gives full Trading & Profit & Loss accounts monthly and at year-end.

Price £395.00 Basic System
£50.00 Unpaid Bills Module
£50.00 Outstanding Invoice Module
£50.00 VAT Return – Any Scheme
£50.00 Trading & Profit & Loss Accounts

8000 SERIES ONLY

Micro-Simplex Limited
0625 527166/527333

CASHBOOK

This program is as easy to use as any cashbook and was designed using the same concept. Entries are input in column form and can be totalled on daily and weekly basis. Daily and final totals can be broken down into net and VAT balances, cheques and cash, debit and credit. Each column is balanced.

- ☐ Each entry is comprised of date, comment, amount and VAT.
- ☐ Debits and credits are printed in their own columns.
- ☐ VAT can be calculated from the gross figure or entered separately.

4000 Series: 35 fields, 80 entries per field.
8000 Series: 40 fields, 80 entries per field.

Price £110.00 4000 SERIES
£120.00 8000 SERIES.

L & J Computers
01-204 7525

THE PET TILL

The Pet Till is an independent unit which replaces the cash register and provides a stock control system in an outlet where a computer and a POS terminal cannot be justified. The system has all of the features of a good cash register and will handle retail sales transactions, unit stock control, purchase order control, stock transfers, sales reporting and replenishment orders.

- ☐ Operator prompts for all transactions.
- ☐ Large display showing transaction lines as they are entered.
- ☐ Price look-up (with description and VAT) on all 10,000 lines.
- ☐ Display of transaction sub-total as items are entered.

- ☐ Cashing-up controls and 'end-of-day' procedures.
- ☐ Refund, Split Tender, Void and No Sale controls.
- ☐ VAT calculation and analysis.
- ☐ Detailed receipts.
- ☐ Audit list of day's transactions.
- ☐ Sales analysis by assistant.
- ☐ Stock monitoring and control on 10,000 lines.
- ☐ Stock, Sales and Replenishment Reports by Supplier.

Price £800.00 4000 SERIES ONLY
(Integrated cash drawer can be supplied by Channel Business Systems)

Channel Business System Ltd
04446 43766/5802

MONARCH

This is a retail control system for hardware shops, fashion shops, sports goods, pharmacies and other retail outlets. It combines an Omron 80B Point-Of-Sale cash register, with a Commodore 8032 computer and a disk unit. The retail control system transfer data between the cash register(s) and the computer.

- ☐ Sales Report.
- ☐ Stock Report.
- ☐ Replenishment Report.
- ☐ Gross Profit Report.
- ☐ VAT Report.
- ☐ Procedures to input receipts into stock and sales and transfers (for multiples).

Channel Business Systems Ltd
04446 43766/5802

accounts books which have been used in businesses everywhere for many years. Two versions of cash register systems are also available.

Put micro-power into your retail business with one of the Commodore systems described below.

PRESCRIPTION LABELLING

A prescription labelling module for pharmacists can be used in conjunction with the Monarch system. It extends the stock control to the dispensary and provides an automatic re-order system. The comprehensive reporting features of Monarch are extended to the dispensary. The package handles more than 5,000 ethicals.

Price £400.00
8000 SERIES ONLY

**Channel Business
Systems Ltd
04446 43766/5802**

NEWSBOX

The complete system for retail newsagents, covering all aspects of news deliveries. In conjunction with Micro Simplex and Stock Man it provides all the controls that a busy newsagent needs. Newsbox eliminates all your various manual records that have to be continually up dated.

☐ Accurate control over news accounts.
☐ Automatic handling of holiday arrangements.
☐ Improved control of news ordering
☐ Point of Sales till facilities.
☐ Price alterations in 15 secs.
☐ Elimination of discrepancy between your ledger and your rounds books.
☐ Bills for monthly accounts.

☐ Clear rounds lists for news boys.
☐ Printed receipts or point of sale recipts.
☐ Up to 2,500 customers, 100 rounds and 1,000 publications (20 publications per customer) can be handled.

Price £1,000

**Systems 200 Ltd
0279 414686 and
0225 314326**

THE POS TERMINAL

The Omron System 80B cash register linked to the Commodore computer provides an effective and sophisticated terminal. All basic ECR functions are built-in, as well as less common ones.

☐ 4 cashiers, 24 assistants.
☐ 15 payment/transaction types, including currency conversions, refunds, stock count recording, receipts into stock and many more programmable functions.
☐ The basic terminal has 2KB of internal memory which can be extended to 8KB. equivalent to 450 price look-up codes and 48 preset keys.
☐ Transmission of data to the Commodore computer is either by local transmission, remote transmission via a modem or through a directly connected reader.

Price £1,705.00 Omron System 80B (and interface).
£850.00 CMT80 Cassette Unit (for up to 4 tills).
8000 SERIES ONLY

**Channel Business
Systems Ltd
04446 43766/5802**

PETROL STATIONS ACCOUNTING

A program to simplify the production of monthly ledgers in petrol filling stations. The program analyses daily payment and sales into four ledgers, each ledger handling up to 120 entries.

☐ Invoice Sales
including Goods Value, Analysis of Sales, Parts and Materials, Labour Costs, MOT charges.
☐ Purchases
including Invoice Reference Number, Description and Value of Goods.
☐ Expenses
Overheads: Rent/Rates, Repairs, Telephone, Heat/Light etc.
☐ Retail Sales
Credit Sales, Credit Receipts, Petrol, Oil, Car Wash, Accessories etc.
☐ Reduces book-keeping errors.
☐ Produces audit trail.
☐ Monthly reconciliation.
☐ Analysis of expenditure/income for up to 10 categories per ledger and validation against total value.
☐ Individual customer/supplier accounts can be produced.

Price £250.00

**Micro Associates
021-328 4574**

Variety of Applications:
the ability to be adapted for many different tasks.

A computer is a flexible device. It can be instructed to do a variety of tasks. Commodore computers are not "purpose built," that is they are not limited to one application or even to one application area. As you can see from the extent of this catalogue, the job accomplished by the computer depends upon the software run on it and the peripherals attached to it.

We have repeatedly stated that the applications for Commodore computers are diverse. These pages will certainly help us make that point. One of the programs below is designed to analyse the information produced on a tachograph. This is the device used to keep track of the speed and distance of heavy goods vehicles. Others are intended for use in small hotels. They keep track of the bookings and record the billing information. A third evaluates the performance of boiler plant and generating equipment. And at the other extreme, the fourth, called "Super Cow" is designed to be used for dairy herd management.

SUPERCOW

Management and record-keeping program for Dairy Farmers. It provides information, which could not practically be maintained in other ways, to be used to monitor the performance of the herd and consequently to identify problem areas.

- ☐ Individual cow records and lactation history and veterinary information.
- ☐ Automatic feed allocation for up to 12 groups of cows.
- ☐ Calving intervals: calculations for herd or group and analysis of individual breeding performance.
- ☐ Fertility/conception rates.
- ☐ Group selection and ordering. Groups can be selected on basis of several criteria and therefore the procedure is helpful in pinpointing the cause of a problem.
- ☐ Veterinary analysis.
- ☐ Maximum of 250 cows can be handled.
- ☐ System will operate in farm or dairy environment in spite of damp, dusty conditions.

Price £800.00

Upthorpe
Computer Programs
0235 850747

HOTEL GB2

Front Desk Billing System for the smaller hotel. Saves the hotelier the tedious job of entering all the accommodation and inclusive meal charges every day, the computer will do it automatically. It will account for morning beverages and papers. It recognises the date and adds the charges to each guest's bill. Even if it hasn't been called for days (or weeks) it is updated accurately and ready for immediate bill printing at the touch of a key.

- ☐ Straightforward, understandable bills.
- ☐ Bills ready for immediate printing.
- ☐ Up to 22 service items easily added to bills.
- ☐ Period billing facility.
- ☐ Payment by credit cards, cash or mixed.
- ☐ Guest details easily changed.
- ☐ Trail of operations.
- ☐ Period and Daily Analysis of Totals.
- ☐ Auto Guest Register and Search.
- ☐ Handles non-resident (restaurant) guests.
- ☐ Capacity 150 rooms (or rooms and tables).

Price £450.00
8000 SERIES ONLY

Landsoft
01-878 7044/7047

HOTEL MF2

Combines HOTEL GB2 (guest billing) with a sophisticated Room Availability and Booking program. The two programs are mutually 'callable' from each other. Charts show the availability of individual rooms for up to 400 days into the future. Each chart can contain up to 80 rooms and up to 4 charts can be held and called. The hotelier can set up the charts in the most convenient manner. Bookings or Provisionals can be made and printed slips and copies are produced.

- ☐ Easily readible 'charts'.
- ☐ Charts can be printed out from any date.
- ☐ Charts show 400 days into future.
- ☐ The availability of types of rooms ie single, double, suite for any date and the following 13 days.
- ☐ Bookings or Provisionals easily made.
- ☐ Bookings can be altered easily. A revised booking slip is then produced.
- ☐ Automatic updating.
- ☐ Arrivals lists (can be printed out).
- ☐ Capacity 150 rooms contained in up to 4 charts. Single chart up to 80 rooms.
- ☐ A perpetual calendar is incorporated.

Price £750.00
8000 SERIES ONLY

Landsoft
01-878 7044/7047

That list should make you believe in the adaptability of Commodore computers. This catalogue is full of possibilities for you. Remember that only Commodore approved products are included in these pages. New products are being submitted daily for our evaluation. If, by any chance you have an application that isn't covered here, check with your dealer or ring the Commodore Information Centre. The product you need may be just around the corner.

TACHOGRAPH ANALYSIS SYSTEM

The system is designed to simplify the recording and analysis of information produced on any EEC approved tachograph. The system will automatically check for all possible infringements related to drivers' hours, as set out in Croner's Road Transport Operation Handbook.

Comprehensive management reports are produced. Correct use of the system will prevent drivers being fined (up to £200.00 per offence) and operators being fined and/or losing their operators licence.

☐ Automatic analysis of tachograph charts via a Veeder Root ACE Analyser.
☐ Can analyse information from any EEC format chart including Lucas, Veeder Root and Smiths.
☐ All infringements in Croner's Road Transport Operation Handbook are checked and highlighted.
☐ Comprehensive outputs by driver, vehicle or date are produced.
☐ Driver Activity Report on rolling 7 and 14 day totals.
☐ Charts can be input manually.
☐ Input is almost totally numeric.
☐ One disk holds up to 28 days information, or a maximum of 100 drivers and vehicles.

Price £600.00
8000 SERIES ONLY

Gate Microsystems Ltd
0382 28194

BOILER AND GENERATING PLANT EFFICIENCY PROGRAM

The program evaluates the operating performance of central boiler plant and generating equipment. It compares performance from operating results with the expected design performance. As well as turbo generator plant, diesel generators etc. the program can be applied to specialist applications such as combined heat and power plant, heat pump/solar applications.

☐ The variables taken into account include: dry flue and wet flue, gas losses, final feed temperatures, turbine pressure and temperatures.
☐ Total losses and cost of losses are evaluated for any change in data.
☐ The effect of changes in load are evaluated.
☐ Facilities exist for appraising capital expenditure required to improve plant efficiency.

Price £200.00

Micro Associates
021 328 4574

Communications:
transmission of information between computers either of the same or different types.

Commodore's microcomputers are very powerful and capable of performing all sorts of tasks independently. However some applications require information on one computer to be conveyed to another computer. The link is called computer communications. Many options are now available to do just this.

Communications products fall into two categories. The first permit Commodore computers to exchange information with other Commodore computers. The term for this is called networking. Several computers are linked together so that they can all access peripherals such as printers, storage devices, etc. The hard disk is a perfect example of this. It can store large amoungs of information but is costly. Being able to share it among several computers can make it cost effective.

The second type modifies the information sent out by a Commodore computer so that it is in a form that can be understood by another brand or type of computer. The signals or characters indicating such

KEYNET

Keynet is a networking system for Commodore computers. Up to 250 computers can be linked to a central storage device and the length of network can be as much as 1.8 kilometers.

Keynet is valuable in any situation where access is required to shared information or to a common storage device.

The hardware to run Keynet consists of a printed circuit board for each computer in the network. The network comprises one 'master' and all the other computers are 'slaves'. Any computer can be designated master. All the shared peripherals are attached to the master unit, however each computer can have its own peripherals.

☐ Most Commodore computers can be part of the Keynet system and the network does not have to be composed of all the same models.
☐ The Keynet system use 1.6k of the master units' RAM. In the slave units, no RAM is used by the network so all is available for applications.
☐ Existing software will only require minor changes to allow it to run on the network system.
☐ File protection takes the form of a password entered locally.
☐ Data protection prevents multiple access for update. The record is reserved using a code.
☐ Keynet is simple in its operation and dependable. Nevertheless, extensive error checking and reporting are inbuilt in the system.
☐ The system is quick and easy to install.

Price £250.00

Commodore Business Machines (UK) Ltd
0753 79292
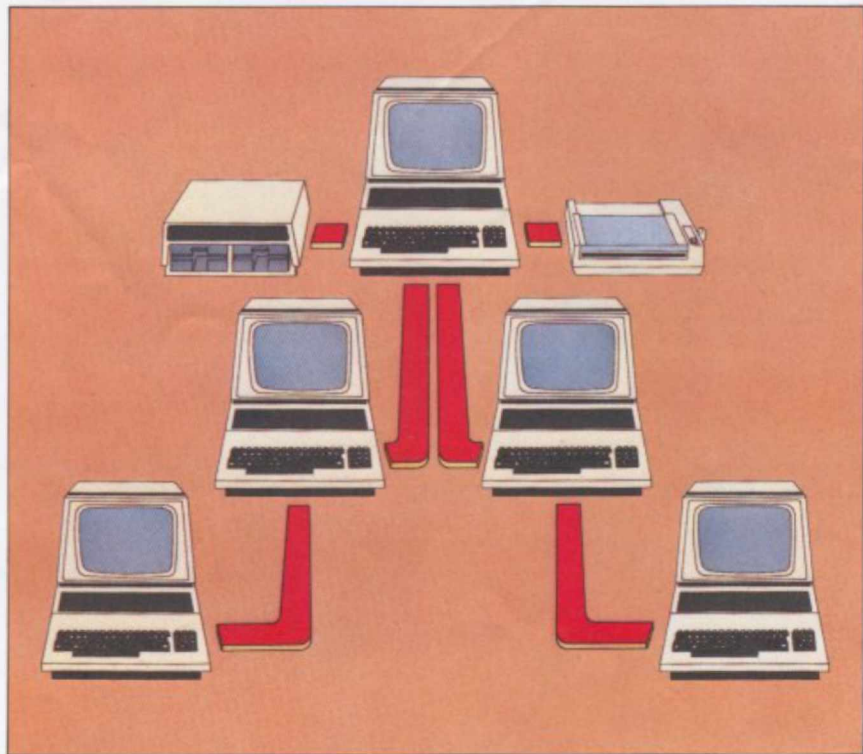
things as the end of a record or file or the end of a transmission vary from manufacturer to manufacturer so "translating" devices are required. Applications of these products include such things as local offices collecting their transaction records and conveying them to the main office at the end of the day. Rather than doing this by former paper methods, it is now feasible to store the information on your Commodore computer, perform calculations, etc. if you wish and then transfer the information to a minicomputer or mainframe.

You can even link your computer to Prestel or Teledata and store the pages that are transmitted via your television. Several communications options are described on these pages.

INTERCOMM

The addition of the Intercomm communications package plus an RS232 interface turns the Commodore computer into an interactive VDU terminal for use with your micro/mini/ mainframe computer system or with bureau/ network systems.

'Intercomm' also provides the Commodore system with two-way file transfer capability, allowing transfer of data from host system to the computer for local processing. Alternatively, the computer can be used as a local data capture device transferring data to the host system for processing.

☐ Commodore computer can be used as a VDU terminal.
☐ Provides file transfer facility.
☐ Capable of emulating specific terminal types, eg VT52.
☐ Operates at up to 19, 200 baud, using Cortex's CCI RS232 interface.
☐ No user programming required.
☐ Configurable by Cortex to operate with virtually any host computer or network which has an asynchronous RS232 terminal connection.
☐ Supports multiple configurations, to deal with more than one host machine or terminal type.

Price £350.00
£175.00 for additional copies of same configuration.

Cortex
Computer Systems Ltd
0234 213571

3270 EMULATION

Software/hardware enabling connection of Commodore computers to IBM systems supporting 3271 BSC or 3276 BSC/SNA (SDLC) cluster controllers. Up to eight computers can be connected to a single IBM port, allowing each to emulate a 3277(8) IBM terminal. Each computer can be located either local or remote to the IBM computer, and can transmit at different speeds, to give an optimum mix of terminal connections.

☐ Local or remote connection of Commodore computers.
☐ Up to 8 computers sharing a single IBM port.
☐ Compatible with standard IBM systems software.
☐ Independent transmission speeds for each computer.
☐ IBM 3277(8) terminal compatibility.
☐ BSC and SNA(SDLC) protocols supported.

Price £7,200.00 (For typical system supporting maximum number).

Cortex
Computer Systems Ltd
0234 213571

SYNCOMM 2780/3780

Syncomm is a synchronous communications package for Commodore computers which allows the emulation of IBM's 2780/3780 protocol (remote job entry). It supports not only IBM systems but any computer supporting these protocols. This is achieved by means of a purpose-built procedural language which allows the user to specify, via a simple menu-driven interface, the required function (plus associated parameters eg, 'Send File' followed by source and destination file names). The relevant job control language commands are then incorporated into the system and the entire operation is performed automatically.

☐ Local data collection, validation and transmission to the IBM system.
☐ Data retrieval from the IBM with local processing capability.
☐ Minimum line connect charges: jobs can be batched locally and submitted to the IBM in a single connection.
☐ Flexible user interface to the Syncomm package facilitating operation by all levels of staff.

Price £1,950.00
£1,600.00 for additional units.

Cortex
Computer Systems Ltd
0234 213571

DRL COMMUNICATIONS CONTROLLER

A Commodore computer together with a DRL Communications Controller provides a low cost, full facility work station for high speed synchronous communications with ICL and IBM mainframe computers.

The system consists of a controller with a 6502 microprocessor and software, running in the controller, to handle protocols. The controller is connected to the Commodore user port and either to a modem or line-driver or direct to a front-end processor via the RS232 interface.

☐ Interactive VDU with full emulation ICL 7502, 7181 or IBM 3276, 3275.
☐ 2780/3780 emulation (remote job entry) for communication with machines supporting this protocol.
☐ Distributed Processor via the Video/Basic interface permits a Basic program to communicate 'interactively' with the mainframe.
☐ Stand-alone Commodore system.
☐ Protocols currently supported:
    ICL CO1 and CO2
    IBM BSC 3270 and 2780

Price £995 with one protocol
8000 SERIES ONLY

Davidson Richards Ltd
0332 366803

COMPASS

A comprehensive asynchronous software system for Commodore microcomputers, allows communication with any other type of mainframe, mini and microcomputer system. The system transmits information over the link in true ASCII form, so that a Commodore computer can be used as a remote terminal for a system which would not otherwise be compatible.

☐ Interactive processing and access to remote data bases combined with the advantage of local processing power and a wide range of business software.
☐ Communicates via a Commodore 8010 modem or an RS232 interface using telephone modems, acoustic couplers or direct wired links.
☐ No specialist knowledge is required to configure or use Compass.

Price £125.00
8000 SERIES ONLY

Davidson Richard Ltd
0332 366803

THE BEE

The BEE is an adaptor which allows the interconnection of any Commodore computer to Viewdata or Prestel. When connected to a Commodore computer, a retrieval command allows the contents of the Prestel page being viewed to be dumped in the computer's memory and then saved on tape or diskette. The page can then be redisplayed at no further cost, saving Prestel and telephone charges. The Bee is approved by British Telecomm.

☐ Self-contained unit with a built-in modem and autodialler.
☐ Standard printer interface connects the computer to the Bee.
☐ In-house communications from Bee to Bee.
☐ Links CBM equipment to other computers.
☐ Full alphanumeric response allows the equivalent of computer to computer or Prestel Mailbox facility.
☐ Implementation of another modem will allow Bee to Bee telephone communications.
☐ Print-out of information can be obtained using any Commodore compatible printer.

Price £599.95

B & B Computers Ltd
0204 382741

MUPET

Mupet is a hardware device that allows up to 8 Commodore computers to access a common disk unit and printer. Mupet is invaluable where the speed of a disk based system is mandatory, multiple keyboards and screens are required but cost is a major consideration.

Examples of use are the secretarial pool where each user has a wordprocessor but shares disk drive and printer, or an educational establishment where a library of common programs can be shared.

Mupet consists of a master control box and special interface units that plug into the IEEE port of each computer in the network. The first computer accesses the disk and the controller queues all further requests for disk access, automatically connecting them when the disk is available.

☐ Multi-user disk sharing system allows up to 8 users.
☐ Supports any Commodore compatible printer and interface.
☐ Handles data and program files.
☐ Computers can be linked up to a maximum of 20 metres from the control box.
☐ Supports standard versions of Wordcraft and Wordpro.

Price £395.00 3 Mupet System
      £75.00 Each additional link
      £150.00 Double Mupet

Adda Computers Limited
01-997 6666

MPS (MULTI-PET SYSTEM)

A Multi-user access to disk, printer etc, MPS allows up to 8 CBM computers to share these central resources, while each computer can have local disk and printer as well.

☐ The distance between units can be 120 metres.
☐ Access to shared devices by switch or automatically from the program. The user retains control of when access is allowed to other users.

Price £975.00 4 station
system (sharing a disk)
£1,465.00 6 station system

Taylor-Wilson Systems Ltd
05645 6192

TELEXPREP

Telexprep facilitates the preparation of Telex messages with ease. The messages can be stored on disk, listed for checking and the tape punched off line so that the Telex machine is free to accept incoming messages.

Telexprep also allows the read-in of Telex tapes at high speed for editing and re-transmission.

Price £300.00
80000 SERIES ONLY

Taylor-Wilson Systems Ltd
05645 6192

NETKIT

Netkit is a multi-purpose communication system for CBM. It consists of a hardware interface and 2K of machine code.

☐ High speed exchange of programs and data between a Commodore computer and an RS232 device (up to 4800 baud).
☐ Allows the CBM to be linked to a wide range of printers and time sharing systems.
☐ Transforms the computer into a smart or dumb terminal.
☐ Gives full character conversion; useful in programming and communicating with such devices as paper tape readers and punches for analysing NC machine times and creating high speed telex tape.
☐ Shared processing and programming between Commodore computers.
☐ Converts ASCII files into tokenised PET BASIC.
☐ Gives ten new SERIAL BASIC commands.

Price £140.00

Kingston Computers Ltd
0723 514141

Planned maintenance: routine upkeep performed at regular intervals.

The speed and accuracy with which computers operate enables the routine tasks of your business to be performed more easily. When the computer's capabilities are linked with other means of improving efficiency, benefits can be enormous. Planned maintenance is an ideal example. This method of anticipating wear-and-tear and routine upkeep requirements of equipment and scheduling service is designed to minimise that loss of productive time. Because of the complexity of the record keeping required to make such a scheme work, it is an ideal application for computers.

A planned maintenance program for Commodore computers is described below. As you read through you will notice another advantage of computing. When an application is programmed additional information or reports are easily obtained. The manpower analysis module below is a perfect example of an additional management report obtainable from the information collected for other main purposes.

COMAC MAINTENANCE MANAGEMENT SYSTEM

A number of integrated modules which together form a complete computer aided maintenance management system.

THE ASSET REGISTER MODULE

The Asset Register Module records details of plant and equipment together with date purchased, equipment code, expected life, priority of attention, warranty date, installed cost, etc.

- ☐ More than 5000 assets per disk.
- ☐ Multiple disks may be used.
- ☐ Records may be retrieved as part codes.
- ☐ Search on up to 10 fields at once.
- ☐ Suitable for static or mobile plant and property inventories.
- ☐ Search and value facility.

Price £550.00

THE MAINTENANCE PLANNING MODULE

The Planning Module enables the maintenance manager to specify when and where the maintenance work is to be executed. Any number of routines can be assigned to a particular piece of plant. Provision is made to store and display the routine, the job title, the planned hours, the week planned, interval between visits, contract or direct labour, a financial reference and the trade(s) required. The module allows capital projects and major installations to be scheduled into the overall plan.

- ☐ Program lists all work due in any specified week.
- ☐ Hours of work reported for each trade and each area.

- ☐ Work overdue is highlighted by asterisks.
- ☐ Provision exists to reschedule routines.
- ☐ 48 or 52 week planning cycles.
- ☐ Automatic production of Work Orders.
- ☐ Peaks and troughs in the workload are identified.

Price £550.00 (Requires Asset Register module).

THE WORK ORDERS MODULE

The Work Orders Module keeps track of jobs available for issue, currently in progress, interrupted for any reason or recently finished.

A full search facility enables the engineer to interrogate the Work Orders file for information on the status or cost of any particular Work Order or Project.

- ☐ Full job descriptions are printed for planned work.
- ☐ Job hours, labour cost and material cost are recorded.
- ☐ Maintenance downtime can be recorded.
- ☐ Orders can be batched, eg by area or trade, before printing.
- ☐ Order information may be summarised on any of ten different criteria.
- ☐ Hours and costs for any or all budget centres may be reported.
- ☐ Outstanding or interrupted jobs may be highlighted.

Price £600.00 (Requires Asset Register module).

THE PLANT HISTORY MODULE

At the end of each week a program searches the Work Order file for finished jobs, extracts the job details and transfers them to Plant History disks. Between 6000 and 12000 history records can be stored on a single disk with no limit to the number of disks that can be used.

- ☐ History records show why the work was necessary and what was done.
- ☐ Types of maintenance can be analysed.
- ☐ The maintenance costs of similar plant can be compared.
- ☐ The relative frequency of planned versus breakdown maintenance can be listed.
- ☐ Average manhours and material costs are reported.
- ☐ Existing manual records can be posted to the system.

Price £400.00 (Requires Work Order module).

THE MANPOWER ANALYSIS MODULE

Because labour cost is often the most expensive item on the maintenance budget COMAC provides comprehensive manpower analysis and reporting facilities.

A reconciliation program checks that the hours worked by each man equals the hours claimed on Work Orders. The program will also list off a summary of every job performed by each man.

A costing facility automatically posts the labour cost to each Work Order.

Reports are produced detailing clock hours, lost hours, performance, earnings, overtime, absence, unmeasured work and the cost per standard hour of work done. This information is presented for each man and is summarised for each labour group. Three different types of bonus calculations are available.

Price £300.00 (Requires Work Order module).

Comac Systems
028 12 2248

Construction Computing:
putting the power of computing to work in civil engineering.

The very early computers were developed and used primarily to carry out complex calculations. Their speed and accuracy enabled them to accomplish in hours what would previously have taken several more weeks. The computers were very large, costly, and by today's standards, slow. They were invaluable, however, to those designing airplanes, bridges and military equipment. The calculating power of the computer meant that safety could be maintained while costs were reduced. Options and innovations could easily be explored and the best selected with assurance.

The same applications are being carried out today. But the speed of computers has increased and the cost and size dramatically reduced. This has made computing power practical for many more tasks. You may be aware of the business applications of computers in your everyday life but the engineering field has not been left behind. Calculations and analysis of all types are carried out to bring new, safe, sensibly priced technology into a variety of engineering fields, thus helping to improve living standards throughout the world.

NBS

NBS consists of the entire National Building Specification on two floppy diskettes. It has been prepared using the established Wordcraft wordprocessing system and is available to all current NBS subscribers.

Specifications are a traditional bottleneck and wordprocessing is a simple solution to the problem. Text may be shuffled, deleted and inserted on the computer screen and finally printed in a fraction of the normal time. Typing is kept to a minimum – whole sections of NBS may be called on to the screen for editing and subsequent storage for each job.

□ Approximately 500 pages of specification clauses on disk.
□ On-screen editing.
□ High quality printout on your own paper.
□ Text may be tailored to your individual requirements.

Price £400.00 (update service £150.00 pa)

**Claremont Controls Ltd
0669 21081**

STRIDER

Strider is a suite of programs for the structural analysis of plane frames. Strider's three modules will analyse virtually any 2-dimensional frame. There are modules for stiff joints, pinned joints and grillage.

Input allows any shape of frame from beams to multi-bay, multi-storey structures with up to 60 joints. Any combination of materials may be used.

Output includes deflections, rotations and member forces plus a list of input data and a screen display of the frame's geometry.

□ Rapid analysis and no 'run cost' allow a frame

to be analysed several times per hour encouraging the engineer to experiment with the structure leading to optimum results.
□ Each module will handle more than 50 nodes and 100 loaded members.
□ Output gives vertical displacements and 2 rotations for each node plus shearing forces and movements at each node.
□ Powerful input technique.

Price £500.00 to £950.00
8000 SERIES ONLY

**Claremont Controls
0669 21081**

CIVIL ENGINEERING HYDRAULICS
CHANNEL

Interactive program for the analysis of fully developed uniform, steady, sub-critical, incompressible flow in open channels. Channel sections available: rectangular, trapezoidal, triangular, circular, parabolic.

Price £250.00

TECPIPE

Interactive program for the analysis of fully developed uniform, steady, incompressible flow in closed conduits and pipes, such as sewers and water mains, which are running full. Conduit sections available: rectangular, trapezoidal, triangular, circular, parabolic.

Price £250.00

**Technical Software Centre
0234 750 102**

CADS2 DESIGN

This is the first section of a CP110 design package. It deals with the elastic analysis of a continuous beam of up to 20 spans, including cantilevers. The program allows modification of input at any stage during data entry so that the user may readily vary one or more parameters to compare alternative solutions.

□ 2 groups of loads, Dead and Imposed, are entered for each member.
□ Each type of load is identified by a screen diagram showing the required input.
□ Judicial choice of default input parameters allows the user to enter complex load patterns.
□ Columns above or below the level under consideration may be included in the calculations.
□ The partial safety factors included in the program are those appropriate to CP110 but may be varied for CP114 design with equal facility.
□ Results are presented on A4 size calculation sheets show input data, tabulated maximum and minimum reactions and bending moments for each span.
□ Envelope diagrams for the shear force and bending moment are also given for each span.
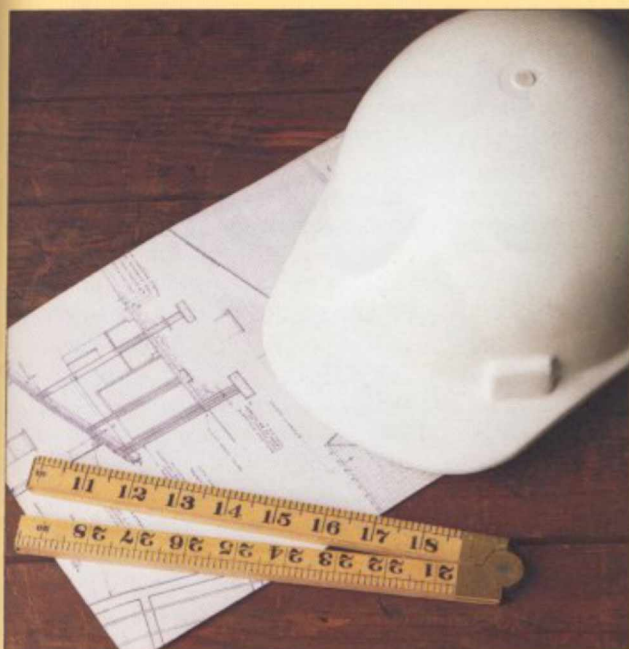
Price £350.00

**Computer and Design Services Ltd
0202 697341**

CADS2 ANALYSE

An interactive program for the analysis of plane frames with fixed and/or pinned joints. Very little preprocessing of data is necessary; a sketch of the frame showing dimensions and loads, is usually sufficient to get started. The file structure

The next four pages outline some of the best of the engineering products available for the Commodore computers. Many of them are for use in the construction field. The applications include load analysis of beams and joints, heat loss calculations, soil sample evaluation and replacement window costing. The list is varied, showing how many people benefit from Commodore computing.

The technical applications are described below. In addition accounting and payroll packages designed specifically for the construction industry are included on pages 16 and 17.

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allows the user to modify data and re-run the problem or close down the system and re-start.

- For members and load combinations, tabulated values and diagrams are given for shear force, axial force, bending moment and deflection at intervals of 1/20th of the length of the members.
- Consistent orientation of members is ensured by the program and non-prismatic members of stepped or linearly variable section may be input.
- Cross sections of up to 15 rectangular or I beam sections can be accurately represented.
- Rigid or elastic supports may be introduced or modified at any point position.
- Each type of load is identified by a diagram showing the correct orientation and point loads in vertical or horizontal directions.
- Up to 9 separate 'Load Cases' may be considered for each member.
- Up to 20 'Load Combinations' may be considered at one time.

Price £1,300.00

**Computer and Design
Services Ltd
0202 697341**

BUILDING SERVICES PROGRAMS

A comprehensive series of microcomputer programs for use by designers and engineers in the Building Services Field. These programs follow industry standard procedures and have been proved on projects over the last few years. The programs are interactive and all follow the same carefully considered screen layout. They constitute a practical aid to Engineers allowing them to concentrate on the design and the various parameters whilst the computer copes with the complicated mathematics.

HEAT GAINS CALCULATIONS

- Determination of 'U' value, admittance, time lag and decrement factor for any specified multi-layer wall or roof.
- Heat gains and cooling load calculations for a series of rooms/modules in a building for any latitude, location, orientation, building materials, internal gains etc.
- May be run for a series of dates to determine the peak and instantaneous module and total building loads.
- Calculates the environmental temperature any specified room may reach during summer if not air conditioned.
- Shadow diagrams plotting any point in plan view or on any vertical face from adjacent buildings.

Price £900.00

HEAT LOSS CALCULATIONS

- Prediction of possible occurance of interstitial condensation in multi-layer walls and roofs.
- Heat loss calculations for a series of rooms in a building following CIBS Section A3 and 5 for convective or radiative systems.
- Selection of single or double panel radiators from any manufacturers range for the above heat losses.
- Produces radiator schedule and list of quantities from above selection.

Price £300

PIPE AND DUCT NETWORKS

- Pressure drop, equivalent length and velocity of a series of flow rates of any fluid at any temperature in a range of sizes of any type of pipework.
- Sizing or checking of single pipe loops to a series of radiators.

- Comprehensive ventilation duct analysis program for any type of supply or extract system.
- Duct type library creation, amendment and printing out for C.

Price £600.00

ELECTRICAL LIGHTING

- Luminaire library creation, amendment and printing out program for fluorescent luminaires.
- Lighting and glare calculations in a room using 'lumen' method and CIBS code.
- Distribution of direct and reflected lighting intensities at a grid of points on the working plane of a room from a defined arrangement of fluorescent luminaires.

Price £450.00

Price for 4 programs
£1,800.00

**Technical Software Centre
0234 750102**

REPLACEMENT WINDOWS SYSTEM

A flexible package designed to meet the requirements of replacement window manufacturers. The system caters for up to 99 window styles which can be defined by the user. Order information is stored on disk and production of cutting lists and manufacturing details can be carried out when convenient.

- Works order cutting sheet giving all component sizes, accessories list and glass sizes.
- Glass summary sheet with complete glass requirements summarised for each order.

- ☐ Costing summary giving a cost breakdown of each order.
- ☐ Materials summary.
- ☐ Price list calculation with a selling price grid for different style windows.
- ☐ All costing data, manufacturing calculation data, size limits etc can be amended by the user.

Price £800.00 4000 SERIES
£900.00 8000 SERIES

Additional modules available for: Patio doors, Residential doors, Tilt and Turn windows: From £250.00

Missing Link Software
01-349 4969

FLUID DYNAMICS AND MECHANICAL ENGINEERING

BEAMS

Interactive program for the analysis of shafts, spindles and beams loaded in a plane of symmetry. Nodal displacements, rotations and reactions (forces and couples) can be calculated. Bending movements at nodes, bending stresses at end of each element, and shear stresses at the end of each element.

Price £100.00

TUBES

Interactive program for the compressive design of tubular members. Calculates the diameter of the section and allows you to investigate local and overall buckling. Also computes the optimum diameter and thickness.

Price £250.00

Technical Software Centre
0234 750 102

CONSTRUCTION ESTIMATING PACKAGE

A suite of complimentary programs based on a Schedule of Rates which can be freely modified and expanded, enabling an anaylytically priced estimate of any type of building to be prepared.

Any item or part of an item can be modified at any time during or after preparation of the estimate. Analysis of Labour, Plant, Materials etc. can be obtained based on time or money and comprehensive material schedules are automatically produced.

- ☐ Descriptions and calculations can be entered and altered to suit any type of building work.
- ☐ Ease of entry and modification of 2,500 basic labour, plant and material prices enabling the price schedule to be quickly updated.
- ☐ A flexible system of multipliers enabling any overall, trade, item or component part of any item, to be adjusted.
- ☐ A detailed analysis of the estimate printed out in an easily read and understood form.
- ☐ Production of labour analysis either by value or time from any user selected section of the estimate.
- ☐ Production of plant analysis on a similar basis to labour.

- ☐ A detailed material schedule with quantities and prices can be displayed and printed.
- ☐ Production of a copy of the estimate file but excluding the quantities, allowing valuations to be prepared based on the estimate data.
- ☐ Variations, dayworks and claims may be added to the valuation file enabling the production of an analysed final account directly comparable with the original estimate.
- ☐ Bill of Quantities may be produced from the scheduled items and automatically priced by the computer.

Price
£600.00 to produce Schedule of Rates
£750.00 to produce Estimate
£300.00 to produce Analysis
£300.00 basic data pack
£250.00 to produce Bill of Quantities
£175.00 to produce analysed Valuations
£135.00 bulk insert and extract routines for Schedule

The above modules are available as a Package to the Purchaser's choice.

8000 SERIES ONLY

C-Q S Computer Services
07372 22249

DATAFACE SYSTEM 3

To meet the growing demand for automatic testing of specimens with all the related benefits of greater reliability and ease of operation, ELE has developed Dataface System 3.

The system provides the engineer with computer-controlled recording and analysis of test results, directly coupled with machine operation. Instruction for each test technique are contained on specially written tapes, Dataface System 3 has many program advantages over methods of materials testing.

- ☐ Considerable time saving in the recording and calculation of test results.
- ☐ Sophisticated testing at an economic price.
- ☐ Minimising operator error.
- ☐ The elimination of costly tape readers which are necessary with other more basic automated systems.
- ☐ In addition, the fact that Dataface System 3 automatically monitors and records the test allows much greater utilisation of existing staff and equipment.

DATAFACE UNIT

The primary product of Dataface Systems 3 is the Dataface Unit. This is a programmable interface between the Commodore computer and the measuring transducers set up on the testing frame. The interface has the facility to switch a test machine on and off at the start and finish of a test sequence. Up to 8 transducers may be connected to the front panel and switching between transducers is controlled by the computer.

Price £3,000.00

QUICK UNDRAINED SOIL TRIAXIAL TEST PROGRAM

A single or multi-stage test for specimens of any normal size but with special arrangements for those of 38 and 100mm diameter.

The program accepts test identity data and monitors load, axial strain and cell pressure. It displays percentage strain and stress. Power supply for the test machine is program controlled through Dataface to switch on the test and stop the test at a maximum of 20% strain. An audible device in Dataface is used to warn of any reduction in specimen stress at the completion of the test the options include, a graphical display, a print of the test data along with a summary of results, and to record the test data to tape.

Price £500.00

SOIL CONSOLIDATION LOGGING AND ANALYSIS PROGRAM

This program accepts data transferred by tape from the oedometer test data program. The individual test stage can be plotted using an Adcomp X 80 SP printer/plotter in log or root time to obtain values for displacement (D) and time (T). The program also includes a curve fitting routine to calculate displacement (D) and the necessary routines to calculate M_v, C_v voids and consolidation ratios. It is possible to format data from different tapes to any particular test specimen series.

Price £1,000.00

SOIL SHEAR TEST PROGRAM

This program will operate two shear boxes simultaneously working with the same sample of soil. Three types of test are included – quick undrained, drained and forward residual shear. The program constants include transducer calibrations, yoke and lever arm weights, specimen size etc., that need only be inserted once for a particular arrangement. The test is divided into two parts, consolidation and shear stage, after which the normal stress and shear stress for drawing the coulomb envelope are calculated.

Also calculated values for C and Ø. These results and the test data can be printed, or transferred to tape.

Price £750.00

DATA ACQUISITION PROGRAM

This program is designed to provide versatile facilities to monitor up to 8 transducers connected to Dataface. Up to 8 tests can be run simultaneously providing not more than 8 columns of data and 1 time base is used. Each channel can be monitored either against time or another parameter. Various time functions are available including root, log, specific or manual. The minimum scan time is about 1 second and the maximum test time 22 days.

The data stored can be printed out in required format or transferred to disc or tape, for use with other programs.

Price £750.00
4000 SERIES ONLY

ELE Limited
0442 50221

Engineering Computing: technical calculations with speed and accuracy

In addition to the many applications for the construction industry described on the previous pages, Commodore computers are in regular use in the instrumentation, mechanical engineering and machining fields. These applications include a program which simulates the path of a machine tool and another which generates a numerical control tape for machine tools. Generally these tasks are only associated with larger, much more costly computers. The gear design and section properties programs are instances where the calculating power of the computer are used to good advantage.

Other products which are of value in the engineering environment include some peripherals (pages 30 and 31) with information about plotters, etc, and interfaces (pages 32, 33 and 34) which include devices that will permit you to link instrumentation to your Commodore computer. In addition, an energy management program is included on page 21.

TOOLPATH

Toolpath software with the MTU high resolution graphics board demonstrates how cutting tools will move and remove billet material in a simulation of a CNC lathe. Toolpath draws the billet and tools on the screen and will interpret correctly any part program written for the lathe.

☐ Errors can be corrected before expensive damage is done to the lathe.
☐ Standard version of the program is for a Warner & Swasey 2SC with GE1050T controller. Versions for the Dean Smith and Grace lathe with GE1050 HLX controller and the Bridgeport series 1 milling machine will be available by September 1982.
☐ For teaching NC programming a multi-user Tapeprep/Toolpath system gives real cost advantage over a CNC lathe. For instance a 4 station teaching laboratory costs £6, 400 or £8, 900 depending upon the configuration.

Price £600.00
(Tapeprep also required, £300.00)
Minimum system: 4000 series/High Resolution Graphics/8023 printer/interface to existing tapestation £2,700.
Recommended system: 8000 series/HRG/Anadex 9500/Midlectron M42.

Taylor-Wilson Systems Ltd
05645 6192
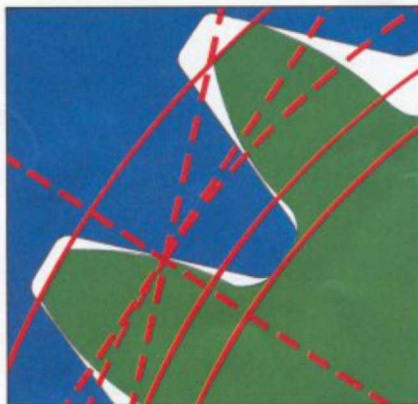
TAPEPREP

Tapeprep software facilitates the preparation and punching of paper tapes CNC machine tool either by means of the recommended Midlectron high speed paper tape station or using any recognised manual tape preparation unit such as a Teletype 33/34 or Zip 30.

As well as punching tapes, Tapeprep allows tape reading and verification at high speed.

☐ Time saving compared with conventional CNC tape preparation.
☐ Part programs are stored on disk reducing storage space required for boxes of mastertapes.

Price £400.00
Minimum system: 4000 series/interface to existing tape station £2000.00
Recommended system: 8000 series/Anadex 9500/Midlectron M42 £4200.00

Taylor-Wilson Systems Ltd
05645 6192

GEARS-1

GEAR design to Gleeson standard, spur and helical.

Price £100.00

Systems to order.

GEARS-2 – Bevel gears, straight, spiral, zerol.
GEARS-3 – Wormgears.
GEARS-4 – Gearbox efficiency.

SECTIONS

Interactive program for the evaluation of section properties for a large range of basic geometric shapes. Properties calculated: periphery, area, centroid, moment of inertia, section modulus, radius of gyration, polar moment of inertia, polar section modulus.

Price £100.00

Technical Software
Centre
0234 750 102

Peripheral:
a device which is attached to a computer to perform a special function, generally input or output.

Computers are one of the most efficient and accurate inventions of man. They are capable of performing a wide variety of tasks at lightning speeds. To use this power effectively, other devices are often required to "talk" to the computer. These are called peripherals.

A peripheral may be as simple as a lightpen which is used to indicate a place on the screen by pointing to it. It may be as complex as a plotter which will "draw" in six colours under the control of your Commodore computer.

The peripheral may greatly expand the capability of your computer. The hard disks are an example of this. They permit you to store vast amounts of information, many times as much as on the usual diskettes.

RADAN PLOTTING SYSTEM

The Radan Plotting System incorporates an interactive digital plotter having a plotting area of some 376 x 254mm. It enables the user to produce graphs and drawings from the Commodore computer and to digitise information from pen traces, photographs and drawings for storage or for calculation.

The System comprises the plotter, a tutorial tape and disk describing the System use and simple plotting routines in BASIC, a machine code routine to prevent buffer overflow, twelve plotter pens, digitising magnifier, one box of paper, and a detailed instruction manual.

- ☐ High Plotting speed – 40 to 55cm/sec.
- ☐ Resolution of 0.127mm (0.005").
- ☐ Uses GPIB IEEE, up to 32 addresses.
- ☐ Integral character generator giving upper and lower case character sets.
- ☐ Software rotation of alphanumeric characters.
- ☐ Plotting area easily adjusted to suit smaller paper sizes.
- ☐ Interchangeable pens.
- ☐ Half speed facility for use with wet-ink pens.
- ☐ Electrostatic paper hold-down.
- ☐ RS232 input also available.
- ☐ Ideal for use with RADAN Graphplotting and NC Tape Verification Software.

Price £3,350.00

Radan Computational Ltd
0225 318483

PET PLOT

This A4 flat bed plotter was specially designed for Commodore computers. It contains an IEEE interface and 12bit D/A convertor. Analogue

pen positioning gives it particularly fast carriage movement for such a device.

The intelligence of the plotter is entirely derived from a ROM based support package. It complements PET BASIC with 15 additional commands.

It is particularly useful to anyone involved in education and those who wish to interface additional instrumentation.

- ☐ Plotting Area: 180mm (X) x 250mm (Y) A4.
- ☐ Plotting Speeds: 400mm/sec Pen up. 70mm/sec Pen down, variable.
- ☐ Resolution: ± 0.05mm.
- ☐ Interface: IEEE, Address 7 (can be changed).
- ☐ Character set: Alphanumeric. £.
- ☐ Character size: 5mm – 30mm height.
- ☐ Axis drawing: Command for size and number of segments.
- ☐ Rotation: 0°, 90°, 180°, 270°.
- ☐ Basic Command set: 15.

Price £700.00

Business Electronics
0703 738248

DIGIPLOT

This A3 flat bed range of plotters is interfaced to the computer via the User Port. Single and six pen versions are available using a variety of colours and pen types.

The plotters are semi-intelligent and contain a 96 ASCII character generator, plus routines for line drawing, character printing, vector plotting, self test, etc.

The system is provided with a ROM which enhances PET BASIC with 14 additional commands and greatly speeds up plotter operation.

- ☐ Plotting area: 360mm (X) x 260mm (Y), A3.
- ☐ Plotting speed: 50mm/sec.

- ☐ Resolution: 0.1mm.
- ☐ Interface: User Port (can be IEEE).
- ☐ Character Set: 96 ASCII characters, inc. Upper/Lower Case.
- ☐ Scaling: 16 sizes for printing characters.
- ☐ Axis drawing: Command for size and number of segments.
- ☐ Rotation: Rotate command for printing characters.
- ☐ Basic Command Set: 14.

Price £900.00 to £1,400.00

Business Electronics
0703 738248

DIGITISING TABLET

This 280 x 280mm tablet has a resolution of 0.1" ± 0.015" (10 times more accurate than graphics tablets available for other microcomputers). It is interfaced via the User Port to the Commodore computer. It can collect data via a cursor or stylus attachment at the rate of 100 XY co-ordinate pairs/second.

Application software is provided to measure lengths and areas, regular or irregular, selectable via a menu on the Digitiser. A ROM or disk based support package, is also provided, adding 8 new commands to BASIC.

- ☐ Digitising area: 11"x 11".
- ☐ Size: 1" Height x 17" Width x 14" Depth.
- ☐ Data Rate: Up to 100 co-ordinate pairs/second.
- ☐ Modes: Point, Switchstream, stream.
- ☐ Attachments: Crosswire Cursor, Stylus.
- ☐ Scaling: Provided in Software.

Price £700.00

Business Electronics
0703 738248

The standard peripherals such as printers and disk units are supplied by Commodore and are described on our specification sheets. The approved peripherals are described below and on the pages on interfaces (pages 32, 33 and 34). Details about other specialized peripherals are in the relevant sections of this manual.

BAR CODE READER

A peripheral input device which allows the user to 'read' the product codes used to identify many products in the consumer, medical and chemical industries. There are two standard codes, European Article Numbering (EAN) and Universal Product Code (UPC). The unit will read both codes without any changes. Standard software is supplied to illustrate the reading and display of codes.

☐ The 3080 is an intelligent unit with a microprocessor and memory which decodes and checks the information before transmission.
☐ Faulty readings are indicated by an audible and visual alarm.
☐ Fully addressable as a file with user determined Primary Address.

Price £1,175

Machsize Ltd
0926 312542

ALPHATRONIC 18 SERIES LIGHT PEN

The 18 Series Alphatronic Light Pen is a well-designed, robust instrument which plugs into the user port. The pen has a sensitivity adjustment and a special resolution of $3mm^2$.

The Light Pen provides a non-keyboard input mode for the computer. The uses and applications of the pen are program determined and therefore it can be used to great advantage where high speed of information access is required. The simplicity of use means that anyone who can read and point can use a Commodore computer.

☐ Useful for educational assessment.
☐ Psychological tests.

☐ Logging interview data based upon set pro forma.
☐ Market Surveys.
☐ Computer familiarisation programs.
☐ Teaching machine applications.
☐ Machine tooling control.
☐ Stock control.
☐ Games.

Price £45.00

Alphatronic Microprocessor
Applications Ltd
0908 663906

CARD READER

This method of data and program input to the computer offers a simple, low cost, alternative to keyboard data entry. Optical and Mark Sense versions are available. The Optical version reads pencil, pen and punch marks. The Mark Sense version requires pencil marks.

☐ 12 channel, 3¼″ width cards.
☐ Accepts any length card.
☐ Automatic turn-on and card feed.

Price £850.00 –
Optical Mark Reader
£650.00 –
Mark Sense Card Reader

Wego Computers Ltd
0883 49235

MATOR SHARK + SHARKIVE

The Mator Shark is a Hard Disk system for the Commodore computer with removable cartridge tape backup.

It is an intelligent 'Winchester' Hard Disk System designed and built in the UK by Mator

Systems specifically for use with the Commodore microcomputer. It has all the Disk Operating System (DOS) features of the current range of Commodore Dual Drive Disk Units together with a massive on-line data storage capacity and substantially increased performance. The Shark includes as standard an IEEE bus arbitration to assist multi-user facilities.

The Mator Sharkive is the archive for the Shark. It is a high-speed tape system which uses Ansi-standard, quarter-inch, removable magnetic tape cartridges. Each cartridge conveniently holds the data from one logical drive of the Shark. The Sharkive is directly linked to the Shark and is controlled via an extension to the Shark DOS.

☐ Provides secure, high-speed, high-capacity data storage for the Commodore computer.
☐ IEEE interface and DOS fully compatible with Commodore Dual Drive Disk Units (Hard Disk divided into two halves to simulate dual drives).
☐ Optional Sharkive attaches directly to Shark and provides high-speed cartridge tape backup.
☐ LEDs on front panel indicate drive and tape activity together with error warning.
☐ Switch-selectable IEEE device number allows Shark to be used in any Commodore configuration.
☐ Multi-PET facility implemented as standard.

Price £3,695.00 22MB SHARK Hard Disk
£4,095.00 30 MB SHARK Hard Disk
£1,895.00 SHARKIVE Tape Backup

Mator Systems Ltd
0273 720451/2

Interface:
a means of linking a computer to a peripheral device.

The range of peripherals (see pages 30 and 31) that may be attached to Commodore computers is expanded by means of interfaces. Many scientific instruments, relays, etc cannot be linked directly to the computer. An interface is required to make the signals from one understandable by the other. Interfaces are also required to use some brands of printers and plotters with Commodore Computers.

A variety of interfaces is available for the Commodore computer. Whether you wish to attach a process controller, a laboratory instrument, an external logic system, a sound synthesisor, a colour printer or another special device to your Commodore computer, there is one below to do the job.

INSTRUMENTATION 'INTERFACE 80'

A system of modular instrumentation covering data acquisition, process control and plant monitoring applications. The system allows a flexible approach to prototype or volume applications. All cards are supplied with comprehensive documentation and demonstration software, either tape or disk-based.

☐ Five slot Card Frame prewired and including power supply (240/110V AC), IEEE-488 Decoder Card and fitted with stackable IEEE Connector. The Decoder Card provides a fully decoded 'talk' and 'listen' bus with handshaking and 32 Secondary Addresses. Primary Address decoding is set by on-board jump plugs.

Price £350

☐ Dual 112 bit Analog to Digital Converter. Two independent converters, each having the following independent, software – selectable input ranges:
Unipolar: 0 – 1V, 0 – 2.5V, 0 – 5V, 0 – 10V
Bipolar: ±0.5V, ±1.25V, ±2.5V, ±5V
Current output: 0 – 1mA, 0 – 5mA, 0 – 10mA, 4 – 20mA (pre-set at factory).
Software control of start convert, status signals for overange and end-of-conversion.

Price Dual £425, single £225

☐ 24 Channel Analog Multiplexor, consisting of 24 individually addressable FET switches. Input voltage range ±15V DC maximum. On-board Frequency to Voltage Converter allows inputs from pulsed sources to be digitised.

Price: £225

☐ 8 Digital Input/8 Digital Output, consisting of 8 optically isolated inputs for digital signals, 3-15V DC or TTL levels, and 8 individually

addressable open-collect digital outputs suitable for driving external logic or small relays. Output rating 30V at 30mA DC on each output.

Price £195

☐ 32 Line Digital Input, consisting of 32 optically isolated inputs for low level DC of TTL logic inputs. The lines can be configured as thirty-two separate isolated inputs, 8 decades of Binary Coded Decimal, or 32 bit Binary input. Individually addressable in four groups of eight lines.

Price £195

☐ 24 Line Digital Output, consisting of 24 individually addressable, open-collector outputs, each capable of sinking 30mA at 30V DC max. Can be software configured as 24 output lines or six decades of BCD.

Price £175

☐ 12 bit Digital to Analog Converter, having software selectable, buffered output ranges as follows:
Unipolar: 0 – 1V, 0 – 2.5V, 0 – 5V, 0 – 10V
Bipolar: ±0.5V, ±1.25V, ±2.5V, ±5V
Current: 0 – 1mA, 0 – 5mA, 0 – 10mA, 4 – 20mA (factory set)

Price £195

☐ Quad 8 bit Totaliser, consisting of four independent, software controlled, 8 bit counters. The counters may be read or reset by program control, and can be cascaded for longer count requirements. The counter information is latched so that the data can be read without loss of counts.

Price £225

☐ Quad 8 bit Digital to Analog Converters, having jump plug selected output ranges identical to the 12 bit units. Each converter is individually addressable and ranged. The output stages are buffered and have an

optional current output.

Price £225

☐ 8 bit Digital to Analog/Analog to Digital Converter, featuring a fast (15 microsecond) A/D Converter and complementary D/A Converter. Each channel has jump plug selected inputs/outputs with a variety of current and voltage ranges, as specified for the 12 bit units.

Price £225

**Machsize Limited
0926 312542**

USER PORT INTERFACING
DIGITAL TO ANALOG CONVERTER

A software-controlled D/A with the input latches controlled by CB2. User selected unipolar and bipolar voltage and current outputs. Separate 'GAIN' and 'ZERO' settings for voltage and current ranges. A loudspeaker is fitted to the board for experiments in synthesised sound.

Price £75

USER PORT WORKSHOP

Eight switches and eight LED indicators are fitted for the Data Lines CA1 and CB2 have debounced switches and LEDs to show the state. 10 programs and full documentation show how to use the PET's User Port.
The PET edge connectors are duplicated on the board.

Price £75

BCD Input Unit

A simple system for inputting up to 6 decades of 1-2-4-8 BCD into the PET. Each decade is

entered under software control. Six independent output lines can control the external device for 'READ', 'HOLD' or 'RESET' functions. The comprehensive documentation includes software to control a '1999' Digital voltmeter. All units are supplied with comprehensive documentation, tape or disk software and with Lead Assembly for connection to the PET.

Price £75

ANALOG TO DIGITAL CONVERTER

A software controlled A/D with 8 bit (1 part in 256) resolution. 15 microsecond conversion time. User selected voltage ranges of 1V, 2.5V, 5V and 10V are provided as standard with the option of unipolar or bipolar operation. 'GAIN' and 'ZERO' controls for fine setting.

Price £75

8 LINE DIGITAL INPUT/ 8 LINE DIGITAL OUTPUT

A card which allows the user to input up to eight signals from external logic systems or switch contacts in the 3-30V DC range. Each input is optically isolated and is independent of other inputs.

The input lines are complemented by eight independent, open collector driver stages which can switch up to 500mA at a maximum of 30V DC. The external supply to each stage can be different but the ground connection is common on all stages. Diode protection is fitted, so that the user can directly switch control relays or similar devices.

Price £75

Machsize Limited
0926 312542

SCIENTIC INTERFACING
LINK-UP BUS MANAGEMENT SYSTEM

Link-Up is a firmware package which allows any number of Commodore microcomputers to be connected to a single disk drive and printer on the IEEE-488 BUS. The system does not require any external hardware or modification to the computer.

Price £125.00

DIGITAL DATA ACQUISITION

Maximum of 64 digital signals may be monitored on a Byte basis with two handshake lines per byte. Positive or negative, logic or voltage-free relay contact closure sensing. Ideal for connecting digital instrument like DVMs, frequency counters, ph meters etc. to the Commodore computer.

Price £400.00

16 CHANNEL RELAY CONTROL UNIT

IEEE-488 compatible, fully addressable, provides 16 independent reed-relays separately addressed and latched. 16 leds on the front panel to provide visual indication of the state of each relay. Attractively housed in a 3D slim line case with banana connectors to the front panel. Relaying rating is 100 volts at half amps. Higher power may be handled using solid state opto-triac providing capability of 10 amps at 250 volts at extra cost, ideal for switching lights, valves, heaters etc.

Price £350.00

SINGLE CHANNEL A/D AND D/A CONVERTOR

Single Channel A/D AND D/A with variable

gain control on front panel by means of multiturn pot. Input for A/D is from $0 \pm 100mV$ to 0 ± 10 volts full scale. Conversion time is 15 microseconds, sampling rate up to 30,000 sample/sec. Machine code programs are available. Ideal for fast data logging and control.

Price £200.00

X-Y PLOTTER ANALOG INTERFACE WITH PEN LIFT CONTROL

Interface providing stimulus output on two channels using double latching techniques, ideal for driving analog X-Y plotters and chart recorders. Relay contact is used to provide pen lift control The interface may also be considered as a two channel D/A and single channel relay control system. All outputs are independantly addressed and latched. Output voltage 0-2.5 or 0-5V full scale, relay rate 100V at half amp.

Price £200.00

8 CHANNEL DIGITAL TO ANALOG CONVERTOR

Digital to analog convertor. 8 separate latches and 8 separate convertors are used (non-multiplexed D/A). Each channel is individually addressed and retains its analog output.

Voltage output 0-2.5 volts or 0-5 volts for ASCII input 0-255. Output inpendence $\leq 1\Omega$ output to front panel via BNC sockets. Integral stand alone unit. Application control voltage for proportional controller, DC servo-system, sweep generators and temperature controllers.

Price £350.00

16 CHANNEL 8 BIT ANALOG TO DIGITAL CONVERTER

For data logging applications where speed and

accuracy are of importance.

16 independent front end amplifiers, adjustable reference voltage wide input voltage range 0-1, 0-2.5, 0-5 or 0-10 volts. Sampling speed of 3600 sample/sec are possible using our machine code program.

Price £300.00

All interfaces IEEE-488 addressable.

BLOOD ANALYSIS

A package to automate routine blood analysis

CHROMATOGRAPH INTEGRATOR DMA 1-82

Integration and analyis of output from chromatographic analysis instruments.

3D Digital Design & Development
01-387 7388

BALANCE INTERFACE

By using Datalects' balance interfaces, Commodore computers can be linked to Mettler, Sartorious, Salter and Precise balances.

☐ Total and average weights.
☐ Total number of items.
☐ Pre-set time-lag weighing.
☐ Interfaces can be tailored to particular needs.

Price £99.50

Datalect Computers Ltd
04862 25995

TERMI-PET

Termi-Pet is a hardware interface with a program to allow the connection of a range of data collection devices to a Commodore computer. A range of terminals which enable data to be collected away from the computer keyboard are available from major suppliers (MSI, Telxcon, UCSL etc). Catlands can supply a specialised system for all types of remote data collection.

☐ Memory capacity from 4K to 64K.
☐ Numeric and Alpha keyboards.
☐ Wand scanners for reading Bar Codes.
☐ Programmable terminals.
☐ Data transfer by cable connection.
☐ Connection via the telephone system.
☐ Typical applications for these terminals are:
　Stock movement and stock taking.
　Incomplete Records data collection for
　Accountants.
　Salesmen's order entries.
　Surveys and statistics.
☐ The Termi-Pet interface comes complete with software to capture data into the computer's memory. The interface connects to the computer's User Port.

Price £325.00 Termi-Pet interface and software. Terminals from £400.00

Catlands Information Systems Ltd
0625 527166/527333

RS232C INTERFACE

For many users of microcomputers high quality, typewriter-style printing is essential. The RS232C interface enables the Commodore computer to be compatible with a wide range of

printers. The interface is located inside the computer and is compatible with Modem based systems for communications.

☐ Fully addressable.
☐ Additional peripherals can be added.
☐ Switch selectable speeds up to 9600 Baud.
☐ Switch selectable odd/even parity.
☐ Crystal controlled.

Price £175.00

Direct Data Marketing
0277 229379

REXAGAN

Rexagan is a system which allows the interfacing of microcomputers to laboratory and process instruments for data acquisition and process control. It was designed originally to meet the widely varying needs of scientists and engineers within ICI

Rexagan forms a powerful, versatile and integrated system which can be used by junior technicians or senior engineers alike. It can do several jobs at once – collect data, send control signals, monitor power supply, sound alarms, etc.

☐ Rexagan is made up of the MASTER UNIT, which connects to the Commodore computer and various SIGNAL BOARDS which slot into the master unit. Connector cables run from the signal boards to the control instruments which send data or receive commands.
☐ Up to eight signal boards can be slotted into the master unit at the same time. Each board can go in any slot.
☐ The ANALOG INPUT boards read continuous signals such as voltage and temperature. The 8 bit signal board reads to a precision of 0.4% and, for greater accuracy, the 12 bit signal board will read to a precision of 0.025%.
☐ The ANALOG OUTPUT boards generate a continuous output signal (eg for graphical representation) according to instructions set by the computer's program. The choice between 8 bit or 12 bit boards is again a matter of how precise a signal is required.
☐ The DIGITAL INPUT boards read 8 or 16 lines simultaneously and can be used to monitor, for example, whether switches are on or off.
☐ The DIGITAL OUTPUT boards similarly can transmit 8 or 16 control signals to trip alarms or start operations.
☐ The PULSE COUNTER is a special kind of digital input board to count how many times an operation of some kind is carried out. It can be used as a clock.
☐ The WATCHDOG is there to guard the whole system. If something has gone wrong with the working of the computer or the interface it can ring an alarm bell, switch off the power or activate alternative mechanisms.
☐ All relevant control programs are given in the Manual in the form of short sub-routines which the user incorporates into his own program.

Technical Specifications

ANALOG INPUT	8 bit	12 bit
Resolution	1 in 256	1 in 4096
Accuracy	± 0.4%	± 0.025%
Conversion speed	100 msccs	150 msecs
Minimum input range	0 – 10mV	– 5mV to + 5mV
Maximum input range	0 – 100V	– 100V to + 100V

ANALOG OUTPUT	8 bit	12 bit
Resolution	1 in 256	1 in 4096
Accuracy	± 0.4%	± 0.01%
Setting time	< 2μ secs	< 1μ sec
Ranges available	0 – 2.5V	0 – 5V
	0 – 5.0V	0 – 10V
	0 – 10.0V	0 – 14V
	0 – 20mA	– 2.5V to + 2.5V
		– 5V to + 5V
		– 10V to + 10V

16 BIT DIGITAL INPUT

Input signals must be in the range 0 to 5V; pull-up or pull-down resistors may be added.

DIGITAL OUTPUT	8 bit	16 bit
Output signal range	0 – 5V	0 – 5V
Maximum current rating	2A per bit	500mA per bit
Maximum voltage rating	80V	50V

PULSE COUNTER

Maximum count	65535
	(resets automatically)
Minimum count voltage	3V

WATCHDOG

Relay output contact rating	28Vdc
	250mA
	3W per contact maximum
Scanning frequency range	Internally set period in 100 msec to 100 secs for each relay contact.

Prices
Master Unit	£240.00
8-bit Analog Input	£155.00
12-bit Analog Input	£220.00
8-bit Analog Output	£165.00
12-bit Analog Output	£220.00
8-bit Digital Output	£170.00
16-bit Digital Input	£125.00
16-bit Digital Output	£125.00
Pulse counter	£120.00
Watchdog	£120.00

Dyson Instruments
0783 260433

SHAFT POSITION ENCODER WITH COMMODORE INTERFACE

The C030C Absolute Optical Shaft Encoder can be interfaced to the Commodore computer to communicate with mechanical systems. A wide variety of applications are possible in the field of positive control and mechanical data logging.

☐ Gives an accurate digital shaft position signal by resolving 360° of mechanical rotation into 256 8-bit words.
☐ To avoid untrue readings being made, a special control system code called 'Gray' is used.
☐ The sequence of binary numbers in the Gray Code is arranged in such a way that, for each increment of rotation, only one of the 8 bits changes state.
☐ An interface/decoder board is supplied, which latches the Gray Code output from the C030C converts it to binary and enables the code to be fed into the Commodore computer via the user port.
☐ System is compatible with ICI Gammatrol.

Price £345.00

Cetronic
0920 871077

Utilities:
those programs or devices that make it easier to program your computer.

No matter how good a product is, someone can always make it better. Commodore computers are no exception. They are superb microcomputers with an excellent BASIC programming language built in. To make it easier to perform a specific task or more powerful in a particular area, many special instruction sets and programming tools have been developed for Commodore computers. These include disk based editors, assemblers and compilers and ROMs which extend the command set of Commodore BASIC.

If you prefer to program in Pascal, Commodore offers two versions. The standard UCSD Pascal is available as well as a smaller version called TCL Pascal. The latter is supplied with a manual which includes a teach-yourself section. A very good package for learning assembly language is also available. This is disk based and includes text displayed on the screen and a demonstration of the concepts covered. If you wish to learn more about Commodore computing, have a look at the publications available as well (page 40).

PETSPEED

Petspeed is a BASIC compiler for Commodore computers. It can make any BASIC program run up to 40 times as fast. This means that processing times, disk handling routines and printing runs can be reduced considerably. Petspeed is not just a compiler, it is a powerful optimiser. It breaks programs down into fragments and reassembles them to work more efficiently, eliminating the unnecessary and simplifying the complex.

☐ Four pass optimising compiler for CBM BASIC.
☐ It accepts a standard BASIC program and converts it to an efficient speedcode (pseudocode) file.
☐ It can handle floating point arithmetic and perform much faster integer arithmetic. Petspeed never does floating point arithmetic when integer arithmetic would be sufficient. This does not effect the user and does not hamper the use of floating point numbers.
☐ Where there is a numeric or string expression, Petspeed evaluates as much as possible, then works out the order of evaluation for the rest.
☐ Petspeed looks for special cases that occur frequently in the program and treats them as common BASIC phrases.

Price £240.00

Commodore Business Machines
0753 79292

EPROM PROGRAMMER III

The Eprom Programmer Mark III is able to program a wide range of devices:
2508, 2708 1K by 8 EPROMS
2516, 2716 2K by 8 EPROMS
2532, 2732 4K by 8 EPROMS
2564, 2764 8K by 8 EPROMS

Using this programmer in conjunction with JCL Software cassette or disk-based Assemblers, or the standard CBM 6502 Assembler, will convert any 16K or 32K Commodore computer into a complete development system.

☐ Fitting a personality card automatically configures the programming software for one of 16 standard popular types.
☐ Electrically erased devices like the HN48016-P may be programmed and erased.
☐ Software is menu driven and includes facilities to check Eprom is empty.
☐ Zero insertion force socket on front panel for Eprom to be plugged into.
☐ Material to be programmed into Eprom is first read into a reserved area of memory.
☐ The latter facilities enable you to change just a few bytes in an otherwise standard block of memory (eg small change to character generator ROM).
☐ Object code files produced by either Assembler may contain code that has more than one origin statement, thus allowing more than one Object code to be loaded into memory.
☐ Programming takes about 1 minute per 1000 bytes and is carried out in accordance with INTEL protocols.
☐ The programmer has a self contained power supply and interfaces to the computer via a single 8 Bit User Port.
☐ The power unit includes a current limit system and safety lockout for the high voltage programming supplies.
☐ The IEEE socket is left free for disks, printers, etc.
☐ Software includes disk directory readout, program, verify functions.

Price £250.00

JCL Software
0892 27454

BUSINESS ROM

Business Rom plugged into your CBM microcomputer gives you 25 new BASIC commands carefully designed to make programming easier.

Professional business programs can be written in a fraction of the time it would have taken. Programs will be shorter, because all the hard work is done by the Machine Code routines in Business Rom, and consequently they will run faster.

☐ DOS support constantly in the machine.
☐ Autoboot facility gives simplified load up first program from the disk on power-up
☐ The new words in Business Rom can be categorised in 5 groups: (1) GETKEY, RESPOND SCREEN-INPUT, INPUT-FIELD commands that concentrate on the man/machine interface, a key area where absolute reliability must be guaranteed in high quality software. (2) SAVESCRN, GETSCRN, DUMPSCRN, SKETCH, PRINT-AT Screen display manipulation commands that allow full screens of data to be stored in memory, recalled or exchanged with memory, or transferred to a printer. PRINT-AT forces printing to occur at a specified co-ordinate point on the screen. (3) MEMSAVE, RELOAD, CHECK Blocks of memory or screen displays may be saved onto disk, reloaded from disk or

verified (bit 4 of the status byte being set to indicate an error).

(4) SEND, RECEIVE, MATCH These three commands, used in conjunction with the SCREEN INPUT SYSTEM (SCRINP) and DOS2 relative files, allow compact and simple file handling programs to be written.

(5) STOPOFF, STOPON, REPON, REPOFF, BELL, DELAY, OVERLAY, ASPRIN. This final group includes STOP key muting, software repeat key, bell (8032 only) and delay functions. OVERLAY allows a new program to be loaded and run under program control whilst the STOP key is muted. ASPRIN is an alternative to PRINT and provides a true ASCII output.

PLIST handles lowercase/graphic characters correctly on CBM printers.

Business Rom occupies the $9000 socket in the computer.

Price £120.00 (Handbook £2.50)

JCL Software
0892 27454

DTL BASIC COMPILER

A compiler, provides a way of making the program run much faster. A large program can have several hundred variables so that each time a variable is referenced a long search will be required. A compiler avoids the time consuming repetition of executing the same statement when it occurs within a program a number of times.

The two techniques of compiling and interpreting are complementary. Interpreters are most useful during the program development phase as the source can be edited simply and the program re-run but when the program is working a compiler is superior because it gives the best program performance.

☐ Almost totally compatible with CBM BASIC interpreter.
☐ Can offer significant increases in running speed and decreases in program size.
☐ Handles integer and floating point.
☐ Allows for dynamic arrays.
☐ Strings do not have to be dimensioned.
☐ Compatible with almost all assembler routines and accepts extensions to BASIC.
☐ 2 pass compilation at up to 2 lines per second.
☐ Has a powerful secutiry system for protection of distributed software.

Price £360.00

Dataview
0206 865835

JCL SOFTWARE ASSEMBLERS & PROGRAMMING AIDS

The JCL range of Assemblers all include Editor, Assembler and Debug facilities in single program and range from ASMPAC8 to a HIGHSPEED ASSEMBLER for 8032 computers.

☐ ASMPAC8 runs in a standard 8K Commodore computer. This Assembler will (1) Test Assemble to allow errors to be found (2) Assemble directly into free memory or (3)

Assemble object code files for later processing by AUTOLOAD8 or AUTOSTRINGS8.

☐ AUTOLOAD8 is a useful program to convert ASMPAC8 object code files into free standing machine code programs that may be SAVED, VERIFIED, LOADED and RUN.
☐ AUTOSTRINGS8 will convert ASMPAC8 code files into Basic strings which may then be transferred into the second cassette buffer.
☐ ASMPAC16 or ASMPAC32 for 16K and 32K systems with MK2 ROMS have expanded Editor, Assembler and Debugging routines including setting and clearing breakpoints.
☐ MEMFIX(8, 16 or 32) can be used with any of the above ASMPAC programs. It moves the bottom of Basic up and creates a reserved memory area that may then be SAVED, LOADED and VERIFIED along with Basic written above it.
☐ HIGHSPEED 32 is designed to promote the rapid development of machine code programs and will assemble directly into a reserved memory area, starting at $0400 (at a rate in excess of 300 lines per minute).

Code assembled with an origin of $0422 can be integrated with Basic using the JCL Software 'MEMFIX' program which is included in this program.

Prices £25.00 ASMPAC8
        £6.00 AUTOLOADS
        £6.00 AUTOSTRINGS
        £29.00 ASMPAC16
        £29.00 ASMPAC32
        £9.00 MEMFIX 8, 16, 32
        £50.00 HIGHSPEED 32
        (BASIC2 or BASIC4 version)

JCL Software
0892 27454

INSTANT ROM

Instant Rom is a 2K or 4K ROM/EPROM Emulator which plugs into any spare ROM socket in the Commodore computer. Data or programs are written into it like RAM. It retains these programs for up to 10 years (due to the internal battery back-up), but the contents can be changed at any time, without erasure. Programs written in INSTANT ROM are available at power-up, and can therefore be used as part of any program you write. Machine-code programs can be tested immediately, without the need to burn and erase EPROMS.

☐ Machine-code development aid.
☐ Rapid re-writing of BASIC ROMS.
☐ Storage of price and weight tables etc., which need changing frequently.
☐ Auto-run BASIC programs in any CBM machine.
☐ Directly loadable from disk.
☐ No soldering or hardware modification is required.
☐ Adaptor GA1 provides the required 'write' signal.

Price £39.00 GR 2516 (2K bytes)
      £56.00 GR 2532 (4K bytes)

Greenwich Instruments Ltd
01-853 0868

TCL PASCAL

This is an implementation of standard Jensen and Wirth Pascal. It is designed for initial teaching and includes a resident version which allows only 4K for Pascal. Designed for initial teaching.

Price £125

UCSD PASCAL

This has rapidly gained acceptance as the ideal language in which to implement most stand-alone, micro-based business applications. Debugging and program maintenance require less time and effort because Pascal is structured. It also benefits from the speed and security of being compiled.

Price £99   8096 ONLY

LISP

Developed about 20 years ago LISP has become the best known artificial intelligence language.

Price £75

ASSEMBLER DEVELOPMENT SYSTEM

A 6502 Assembler package using standard Mos Technology mnemonics. The package includes Editors, Assemblers, three Loaders for low, mid and high memory and extramon which extends the Monitor in the computer's ROM.

Price £50.00

ASSEMBLER TUTORIAL

A Commodore-specific introduction to 6502 Assembly Language programming. The Tutorial is split into three modules and has been designed for use both as a classroom aid and a 'teach yourself' course.

Price £50.00
(Cassette available from Audiogenic Ltd.)

COMMLINK

An operating system enhancement that extends Commodore BASIC by adding extra commands to simplify high speed asynchronous communications through IEEE port.

Price £200.00
Commodore Business Machines (UK) Ltd
**0753 79292**

POWER

Power produces a dramatic improvement in the ease of programming BASIC on Commodore computers. Power is a programmers utility package (in a 4K ROM). It contains a series of new commands and utilities which are added to the screen editor and the BASIC interpreter.

Designed for the CBM BASIC user, Power contains special editing, programming and software debugging tools not found in any other microcomputer BASIC. It is easy to use and is supplied with full operator's manual.

☐ Autoline numbering.
☐ Delete lines from a program in memory.
☐ Dumps the values of all scalar variables in BASIC memory.
☐ Restores the program pointers and resets the BASIC interpreter.
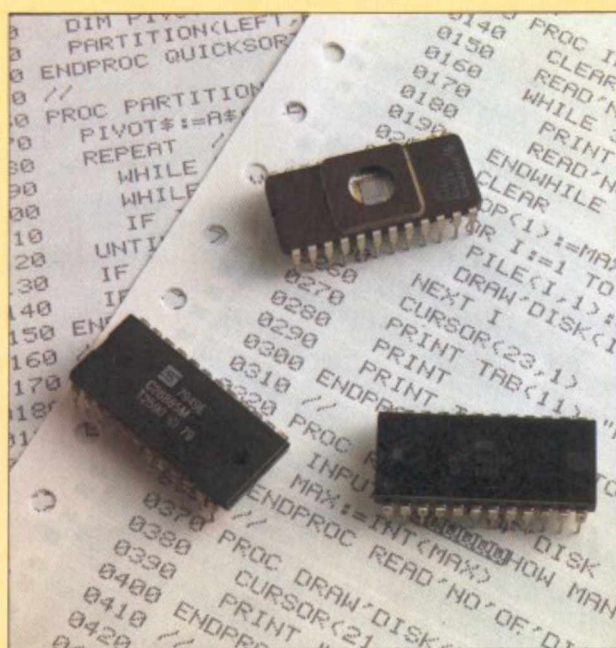
LISP, a language for use in artificial intelligence studies is also available from Commodore. For schools and teachers, COMAL, a structured version of BASIC is available free of charge through our Education department.

If you have software (or want to write some) that requires the CP/M operating system, an add-on board is available.

A good thing has been made better. If you write your own programs, whether you are experienced or just learning you will find some invaluable aids described below.

☐ Disables the Power Pack for special user purposes.
☐ Power cursor – all cursor movements and automatic repeat function for insert/delete.
☐ Renumbers partial or entire program.
☐ Selects or deselects BASIC keyword expansion.
☐ Trace modes.
☐ Allows user to merge two BASIC programs together.
☐ Searches and replaces within entire programs or given line range.

Price £49.00

Professional Software Ltd
0707 42184

PETCLOCK

The Petclock Real-Time Clock-Calendar Type GCC1 plugs into the User Port of any CBM. No wiring or external power supply is required. Accuracy is maintained when the computer system is switched off. A lithium battery has a typical life of 10 years. Software is provided which is easily incorporated into any BASIC or Machine-code program. Date and time may be printed on the screen, returned in a character string for easy manipulation, or saved in any area of memory for further processing.

☐ Automatic date-printing for business programs.
☐ Event timing using GCC 1 interrupt outputs.
☐ 'Date-stamping' programs under development.

Price £62.00

Greenwich Instruments Ltd
01-853 0868

CP/MAKER

The CP/Maker is an integrated board which incorporates the Z-80A microprocessor. With the addition of the CP/Maker the Commodore computer can operate with the CP/M operating system (created by Digital Research Inc.)

☐ Increases the internal RAM of the Commodore computer by 64K.
☐ Adds Z-80A microprocessor running at 4MHz.
☐ Runs Z-80 and 6502 processors simultaneously at full speed.
☐ 9511A math processor is available.
☐ Operates with CP/M 2.2.
☐ In memory expansion mode, 32 mappings are available.
☐ All programs written for the Commodore computer will run when the CP/Maker is in place except those which write to the ROM space.
☐ Software is included to run printers with RS232 interface.
☐ Has a 26 pin expansion connector which enables user designed I/O devices to be connected to the Z-80.
☐ Easily installed inside the computer, it requires no external electrical connections.

Price £485.00

Tamsys Ltd
07535 56747

VISIBLE MUSIC MONITOR

This program enables you to compose and replay four-part harmony music on your Commodore computer. Your opus is displayed in real musical notation on the screen. There are full editing facilities so that you may alter the music as you go.

☐ Programmable wave forms for each voice allow you to create your own sounds.

☐ User definable keyboard so that notes can be entered in the most convenient way.
☐ Master mode facility means that pieces or bars of music that are repeated need only be written once. There is full control over the replaying of the piece with transposition and tempo changes possible at any point.
☐ The package comes complete with sample tunes and digital to analog circuit board that fits into the back of the Commodore computer and interfaces with a speaker or hi-fi system.

Price £45.50
(cassette version £39.50)

Audiogenic Ltd
0734 586334/5

CBM GRAPHICS BOARD

A high-resolution graphics add-on to the Commodore 8032 computers. High resolution graphics are available operating in three different display modes; two pages of 512 by 256 resolution or one page of 512 by 512 resolution.

☐ The graphics display memory takes none of the computer's address space.
☐ Graphic and normal displays can be overlaid or displayed individually.
☐ Additional 25 BASIC commands added to aid in the generation of all types of pictures, from static graphs to moving objects.
☐ Optional serial line interface with extra ROM software which turns the CBM computer into a VDU. Enables down-line loading so that a host computer can be easily used for cross-assembly.
☐ Lightpen input.

Price £234.00

Commodore
Business Machines
0753 79292

Accessories:
supplemental equipment to enhance a computer installation.

Reading through this catalogue you became aware of the hundreds of uses to which Commodore computers have been put. One or more of them have probably attracted your attentions as products that could benefit you. Once the decision is made to buy a computer, the next question is probably "where do I put it?". In the early days of computing the answer would have been "Build a room." The room would have required special air filtration, air conditioning and anti-static flooring.

Today's microcomputers will operate in any normal working environment. They can sit on a desk top in the office or on a stand on the factory floor. The neat modern lines and clean colour of Commodore computers will add a modern touch to their surroundings.

To improve the overall appearance of your computer "installation" several items of office furniture are available. In addition to their attractiveness, these desks will make the operation of your Commodore computer more convenient and thus more efficient.

Also included below are valuable accessories such as back-up power supplies. The power supplies are

DUST COVERS

A complete set of dust covers for the Commodore range.

☐ Heavy duty beige vinyl with sewn seams and piped edging for durability.
☐ Covers for Commodore computers, disk drives and printers.

Price £5.00 to £7.00

Sumlock Manchester
061 834 4233

VENTGUARD PRINTER COVER

This acoustic cover for the 4022P printer will reduce noise from the printer considerably.

☐ Flock sprayed metal base, line internally with acoustic foam for maximum noise absorbency.
☐ Smoked bronze perspex top with self locating hinge.
☐ Easy access to switches etc.

Price £65.00

Ventguard Ltd
060 77 5856

SEQUENCE SWITCH BOX

Allows the computer and up to four peripherals to be powered up in the correct sequence with only one switching operation. On switching off, powering down is done automatically in reverse order.

☐ One mains lead from bench to socket.
☐ Input 240V, 50Hz at 1A each, 1kVA total.
☐ Approximately 2 seconds between each switching operation.
☐ Complete with 5 indicator lights .

Price £75.00

Wego Computers Ltd
0883 49235

LINEBACKER

The Linebacker, with its integral battery and solid state inverter provides emergency AC power, for microcomputers, should the mains electricity fail.

☐ Sine-wave output.
☐ Transfer time 50 milliseconds.
☐ Full rated output for up to 4 hours standby.
☐ Brownout (low volts) protection.
☐ 5% total harmonic distortion.
☐ Mode of operation indicated.
☐ Supports 'normally off' loads where required.
☐ Short circuit proof.
☐ Reverse battery protection.
☐ Low maintenance battery fitted as standard.

Price £400.00

Edcel Electronics
0278 422882

BACKPACK

Prevents valuable data being lost because of power cuts or line surges. Backpack can be installed easily in the computer and disk drive unit. The unit consists of a set of sealed gel batteries.

☐ Recharged during normal operation; full charge in 16 hours.
☐ Supplies a minimum of 15 minutes reserve power.
☐ Physical size 5.5″ x 3.6″ x 2.4″, weight 4.5lb.
☐ Battery life expectancy 3 to 5 years.

Price £140.00

Wego Computers Ltd
0883 49235

VICKERS SYSTEME

essential in applications where irretrievable information is being collected in an unstable environment. For example, the computer might be in the field, recording test data sent through an interface Backups are also useful in installations where the mains voltage may fluctuate.

The other items described here will also enhance your computer installation.
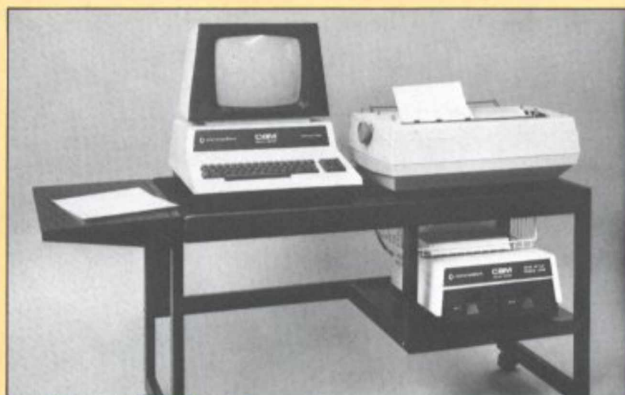
CROMPTON COMPUTER DESK

VICKERS SYSTEME

A custom built desk unit with cream enamel frame and champagne coloured laminated top. The split level desk top allows the user to operate the computer comfortably.

- □ 1525mm x 760mm (60″ x 30″).
- □ Electrical service channels.
- □ Enamelled side panel with vertical segregated wireways.
- □ Hinged covers for easy access to sockets and wiring.
- □ Disk drive pedestal fitted with adjustable shelf for paper feed to printer.
- □ Available with or without side and end panels.
- □ Double skin steel.

Price from £320.00

Vickers Furniture
0322 23477

CROMPTON COMPUTER DESK

Designed by a Commodore user to overcome the problems associated with using ordinary office furniture. The desk top is made in sound and vibration absorbent material. With black leathercloth finish and a black metal frame, its simple, contemporary styling allows it to blend with modern office decor.

- □ Accommodates any Commodore system in a compact space, allowing easy reach for the operator.
- □ Mounted on castors to turn the desk into a mobile workstation.
- □ Concealed wiring channels, supplied with a 4 gang 13 amp socket and 2m of cable requiring only a single electrical mains connection.
- □ Paper feed tray mounted under desk top to allow paper through a 410mm (16″) slot in desk.
- □ A 410mm (16″) paper guide is available for use with large printers requiring paper feed from the back of the desk.
- □ One desk top extension shelf is supplied as standard. Extra extension shelves are available.
- □ Ergonomic layout, may be assembled left or right handed.
- □ Flat packed for delivery and storage with full instructions for easy assembly.
- □ Weight. Approximate packed weight 40kgs.
- □ Dimensions – Length 1,165mm (46″) with extension top 1,470mm (58″). Width 561mm (22″). Height 673mm (26.5″) giving keyboard height of 726mm (30″).

Price £165.00

Tirith Ltd
0908 679528

IDA COMMODORE SYSTEMS DESKS

A range of desks ergonomically designed for the Commodore computer range by Gutmann KG, Europe's leading manufacturer of workstations for computers. The whole surface is melamine veneer, which is glare-proof, heat conductive and prevents slippage through a special surface function. A 3mm PVC edging ensures protection against damage and wear.

- □ Brown solid steel frame.
- □ Oak veneer decor.
- □ Power distribution panel on most models.
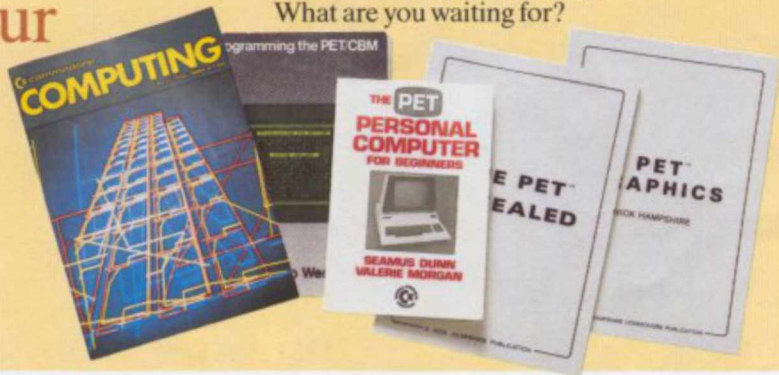- □ Height 720mm width, 1150mm depth, 620mm or 800mm.

Price from £149.00

International Data
Automation Ltd
09904 4944
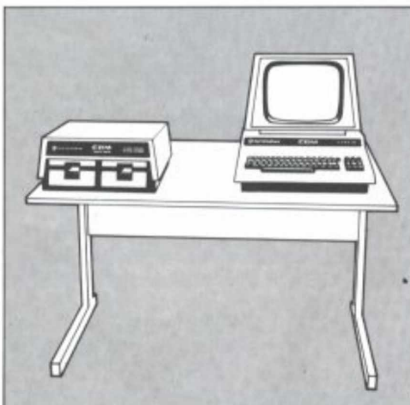
IDA COMMODORE SYSTEM

Publications for CBM:

books and magazines to help you get the most from your Commodore computer.

Great ideas are worth sharing. Fortunately many people have recognised Commodore computers as a great idea and have published their thoughts to share them with you.

Some of these publications are aimed at the novice programmer. Others are designed for the sophisticated or advanced. All are packed with useful information to help you get the most from your Commodore computer. If your dealer doesn't stock them, he will order them for you. All are good value for money. What are you waiting for?

THE PET PERSONAL COMPUTER FOR BEGINNERS

(Seamus Dunn and Valerie Morgan)

Written for beginners with no experience of computers, this comprehensive introduction to the Commodore computer gives a very clear explanation of how to operate and make full use of this versatile machine. Eleven chapters provide detailed descriptions of the computer's different facilities. Problems and fully worked, answers are provided at the end of each chapter.

- □ Divided into eleven compact, carefully sequenced chapters, it teaches the reader to make full use of the facilities available on Commodore systems.
- □ Illustrations, sample programs and screen responses.
- □ Problems and fully worked answers are provided at the end of each chapter.
- □ For all versions of the Commodore computer, from the original 2001 to the 8000 series.
- □ Provides advice and practical examples for personal record-keeping and small businesses. Hints on start-up, maintenance and efficient use.
- □ Chapter on the use of Commodore computers in the classroom.
- □ Tables and checklists of the computer's capabilities.

Price £4.95

**Prentice-Hall International
0442 58531**

PROGRAMMING THE PET/CBM

(Raeto West)

A major teaching and reference text on software for all Commodore computers. Contains almost five hundred pages of closely-packed information.

- □ Text covers BASIC, Machine Language, PET/CBM architecture and associated products.
- □ Most suitable for those reasonably experienced at programming who can benefit from the wealth of detail.
- □ Comprehensive and accurate reference book.
- □ First published February 1982.

Price £14.90
(ISBN 0 950765007)

**Level Ltd
01-794 7241/9848**

PET REVEALED

This book is a collection of discoveries about the Commodore computer and how it works. These facts will help you write better programs and perform more interesting functions. Topics covered include system hardware, the 6502 microprocessor, the IEEE and User Ports and more besides. Pet Revealed features many facts and figures on the Commodore series of computers.

- □ Circuit diagrams and memory maps.
- □ Program listings in both BASIC and Machine Code.
- □ Covers BASIC 4, 40 and 80 column machines both 9 and 12 inch versions.
- □ A must for any serious CBM programmer.

Price £10.00

PET GRAPHICS

This book has two main objectives. One is to provide the reader with an introduction to programming techniques used to generate graphic displays. The other is to provide the programmer with a complete package of machine code routines giving a wide range of normally unavailable graphics functions.

- □ Topics covered include fine resolution plotting, screen and character block scrolling, double density plotting.
- □ The appendix contains circuit diagrams of the video circuitry.
- □ Each chapter contains many program listings.
- □ All the programs are available on disk.

Price £10.00

COMMODORE COMPUTING

Commodore Computing International is a monthly magazine aimed specifically at the Commodore market. It covers the entire range of Commodore equipment, from the Vic range to the Super Pet and beyond in its information on programs and peripherals.

- □ Covers news, reviews, program listings and much more, for every Commodore machine and related products.
- □ Regular features in each issue and articles by well known authorities on CBM, covering such topics as interfacing, languages, graphics, applications.
- □ Sections on BASIC and machine code and many listings for use in your own programs.

Subscription £12.50

**Nick Hampshire
Publications
01-839 6835/1855**

Ongoing: required for the continuing operation of your computer.

Once your Commodore computer is installed, you'll wonder how you ever got along without it. It will become an integral part of your business.

Using your computer with optimum efficiency may require some special supplies such as continuous forms or labels. You will also need ribbons for your printer and extra diskettes for storage of programs and data. Information about these is given below.

As your computer becomes more and more valuable in the day-to-day running of your business, it will be increasingly important that it is always in good working order. Commodore computers are very reliable, but as with any sophisticated equipment occasional problems arise. As well as the service facilities provided by your dealer a nationwide maintenance service is available to keep your computer operating and it is described following.

And if it's training you're after there is a course described below. In addition the Commodore Information Centre can supply a brochure on Commodore's own courses.

WILKES PCA DATA SUPPLIES

WORDPROCESSING STATIONERY

Continuous wordprocessing stationery, plain or over-printed with letter-head for use with CBM approved wordprocessing packages.

- ☐ High quality 80gsm continuous stationery with 'slit' perforations to guarantee a clean edge.
- ☐ Exact A4 (11.7″ x 8.3″) documents without the need for expensive carrier sheets.
- ☐ Sprocket punching to ensure exact positioning and that the paper does not slip on the platen.
- ☐ Plain or over-printed with letterhead.
- ☐ Special wordprocessing drafting paper (12″ x 9.25″) available to ensure economy where internal reports or drafts are required.

LISTING PAPER

A full range of standard and special listing paper available in quantities to suit the smaller user.

- ☐ High quality 11″ x 8.5″ or 11″ x 9.5″ available.
- ☐ Single or Multipart listingpaper. Multipart listing supplied either on 'carbonless' copying paper or interleaved carbon.

CONTINUOUS ENVELOPES AND SELF ADHESIVE LABLES

Continuous envelopes provided in two sizes conforming to Post Office specifications.

- ☐ 10″ deep envelope to take A4 documents unfolded, ideal for brochures.
- ☐ 5″ deep envelope to take folded A4 letters.
- ☐ Plain or overprinted to your specification.

In addition a wide range of self adhesive labels with sprocket margin. Range includes 11″ x 9.5″ two labels wide sheets – ideal for Mailshots.

COMPUTER FORMS

Wilkes-PCA Quikform supplies bespoke computer forms – invoices, statements etc. For the low volume user, as few as 1000 single or multipart forms printed to exact specifications.

SUPPLIES

- ☐ High quality printer ribbons for all Commodore printers available ex-stock.
- ☐ Multistrike and fabric ribbons ensure highest standard for word processing applications.
- ☐ An extensive range of files and binders are available in a variety of styles and formats. Special program files to hold notes, printouts, disks etc.
- ☐ Complete filing systems, racks and cabinets are available.

Wilkes-PCA Data Supplies Ltd 01-900 0471 and 0902 42961

PETKIT

Since Commodore computers are used in a variety of environments – industrial, laboratories, classroom, dairies, there is a need to ensure that the systems are kept clean and dust-free. The PETkit contains a selection of cleaning products to keep the system in prime running order.

- ☐ Floppiclene: flexible disk drive head cleaning system.
- ☐ Safeclene: drive cleaning fluid.
- ☐ Foamclene: anti-static cleanser.
- ☐ Safewipes: lint-free cotton squares.
- ☐ In addition antistatic screen wipe, cleaning cloths, cotton buds are included.

Price £29.50

Automation Facilities Ltd 073 522 3012

MAINTENANCE SERVICES

A third party maintenance service for all Commodore equipment and associated peripherals is provided by Mills Associates. The company operates on a nationwide basis, through a network of Service Centres. Prices are standard throughout the United Kingdom.

MAINTENANCE CONTRACTS

- ☐ Fault call-out service with response normally within 24 hours.
- ☐ Routine preventive maintenance visits are provided to minimise the risk of breakdown.

WORKSHOP SERVICE

- ☐ Regional workshops provide non-urgent and time and parts service repairs.
- ☐ Enhancements and upgrades carried out.

Price dependent upon configurations.

Mills Associates Ltd 0600 4611

MICROTRAINING

National courses on the Commodore computer's applications and capabilities and programming.

- ☐ One computer between two people.
- ☐ One day course.
- ☐ In-company courses also available.

Price £50

Microtraining 021-784 0077

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C= commodore
COMPUTER