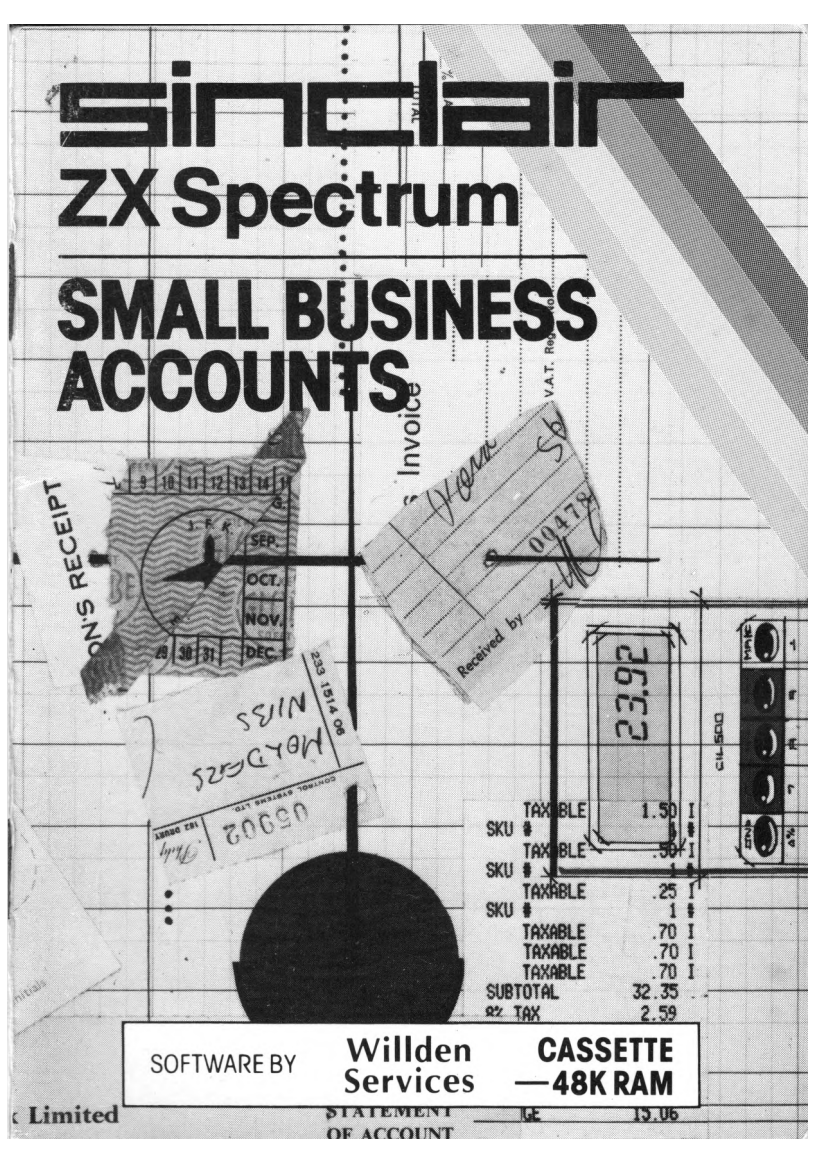
sinclair
ZX Spectrum
SMALL BUSINESS ACCOUNTS
Invoice
V.A.T. Reg
Received by
SEP.
OCT.
NOV.
DEC.
TAXABLE 1.50 I
SKU # 1 #
TAXABLE .50 I
SKU # 1 #
TAXABLE .25 I
SKU # 1 #
TAXABLE .70 I
TAXABLE .70 I
TAXABLE .70 I
SUBTOTAL 32.35
TAX 2.59
STATEMENT OF ACCOUNT
15.06
SOFTWARE BY
Willden Services
CASSETTE —48K RAM
Limited

SMALL BUSINESS ACCOUNTS

It is characteristic of human nature that an aptitude for accounting is rarely associated with entrepreneurial skills in the same individual; thus the small trader tends to neglect tiresome figurework in favour of the more pleasant involvement in his business.

To many, book-keeping is a necessary evil to be attended to only to the extent that is required by the seeming multitude of tax gatherers; occasionally one sees some results of the enterprise; sometimes with pleasure and sometimes with disappointment.

This need not be so. Accounting, if properly understood and attended to, can form a valuable tool in the operation of a business to the extent that pleasure at the results increases at the expense of the worry, the tedium, and the disappointments.

The Willden ZX Spectrum ‘accounts’ program is designed to simplify the accounting operation and, at the same time, to provide rapid, and very-useful information regarding the state of the business. As a by-product, the tedium of the periodic reports required by the tax man is eliminated.

In offering this program to you it is with the sincere wish that it will be instrumental in relieving you of some of the day-to-day burdens and, at the same time, improving the knowledge of your business.

Willden Services Limited

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Introduction

From a background of many years experience in the managing of small businesses, coupled with an intense interest in the capabilities of the microcomputer, the program author has set out to design a series of , interconnecting routines that will provide the small trader with immediate, precise information which, in his experience, is difficult to extract from conventional methods of accounting.

Of course, such facilities have been available for quite some time but, i because of their very high cost in terms of equipment, software and staff training, their use can only be justified by the larger organisation where the benefits to be derived far outweigh the costs of obtaining them.

The tremendous decrease in cost of the hardware in recent years has culminated in the introduction of the ZX Spectrum, a truly marvellous example of modern technology. Without doubt it will greatly accelerate the use of computers in the smaller business and, in a few years time, no business will want to exist without the great benefits which such machines are able to provide.

Cost of the hardware is one thing but, it will be very clear to the reader, to produce a standard integrated program that is able to cater for the variations and great multiplicity of individual business transactions, is not only extremely difficult, but would have the effect of destroying the very simplicity that is the absolute necessity for the small trader.

A Company computerising its operations requires the various program routines to be specifically directed to its own special needs; this is probably the major introductory cost and one which prevents such facilities from being adopted by the small business. The cost is pretty much the same whether turnover is measured in thousands or in millions, the difference being that the latter figure makes the cost of the system justifiable.

The program design concept was for it to achieve certain basic goals, simplicity being among the foremost. In reaching these goals it will be obvious that some compromises have had to be made. For example a book accounting system, by virtue of the painstaking entry, analysis and totalling of figures, will provide lists of debtors and creditors and other similar data.

Our program does not do this; it operates by continuously updating totals of ‘nominal ledger’ accounts. There is just not sufficient room, even in the ZX Spectrum memory, to store such extensive data - particularly when we have no pre-knowledge of the number of transactions likely to need to be recorded. Such facilities will need to await the ZX Microdrive.

A further compromise is evident in the computation of gross profit. As you will already know, gross profit is the amount which remains from a sales value after deduction of the cost of the goods sold, but before allowing for the selling costs and overheads.

Even in a simple buying and selling business this can be quite a lengthy calculation involving the valuation of stocks often running into many thousands of individual items.

In a manufacturing business the problem becomes even more acute because, to the material costs, we have to add such items as factory rents and rates, power and light, wages, transport, etc., many items of which are duplicated in the selling and administration costs. And, of course, each business has its own peculiarities in respect of these details.

Again, in the interests of simplicity, the computation of gross profit has entailed a further compromise. During the running of the program, it operates on a gross profit level derived from historical data, this is input when the program is initialised and then updated with the precise stock figures when and if these become available during the course of a particular year.

Even so, this is not entirely satisfactory from the point of view of a manufacturing business because of the added complications referred to above; however, the major benefit of an accurate VAT capability is retained. For a business of this type to gain greater accuracy in the gross profit calculation requires a reasonable knowledge of accounting on the part of the user, also a fairly good programming knowledge. However, some suggestions for making changes to the program appear later in this booklet.

How simple is the program to operate?

All traders keep records of some sort or the other and therefore have a knowledge of simple accounting. The program simulates as far as is possible the normal account books that the trader is used to keeping. Just by switching on the program, the user, with this knowledge, could operate the system quite satisfactorily until he reached that odd payment or receipt that occurs now and then and where the recording of it is not immediately obvious.

The bulk of the explanations in this booklet are concerned with these special cases and the initialisation process which requires a degree of care. Once set up the system operates by proper data input instructions so that the user is never at a loss to know what needs to be done.

However, we do recommend that you familiarise yourself with your Spectrum before using this program. A few hours with the Spectrum manuals will pay dividends!

What about incorrect entries?

All INPUTS are entered as 'strings' and evaluated as such by error-trapping routines; however, the program will take in 'acceptable' entries (i.e. an "11 " in mistake for a " 12") but printout of the figures to the screen will be followed by a request for visual verification of the display before the data is accepted into memory or printed out by the printer.

What does the "TRAINING" side do?

The features of the program are such that extensive training in its use is not necessary; however, the user will benefit from some practice to familiarise himself with the operation, also he needs to gain some confidence that the output is accurate and up to the standard that he requires.

The "TRAINING" routine does just that. When "12" is pressed, this has the effect of initialising all the nominal ledger accounts to set up a fictional company Balance Sheet. Now the user can begin to enter some equally fictitious transactions so that the effect on the Balance Sheet may be observed. This routine is particularly useful for educational purposes as single transactions may be entered and the effect on the Balance Sheet and intervening accounts may be demonstrated, examined and tested.

What about security?

A personal code is entered at initialisation which protects information in memory from subsequent unauthorised access. When a SAVEd program is LOADed, the first input request is for this code which, if keyed incorrectly, will, after two more requests, result in memory being completely CLEARed of all data.

As you are aware, a knowledge of Spectrum programming will permit this safeguard to be bypassed but it does offer some measure of safety.

General

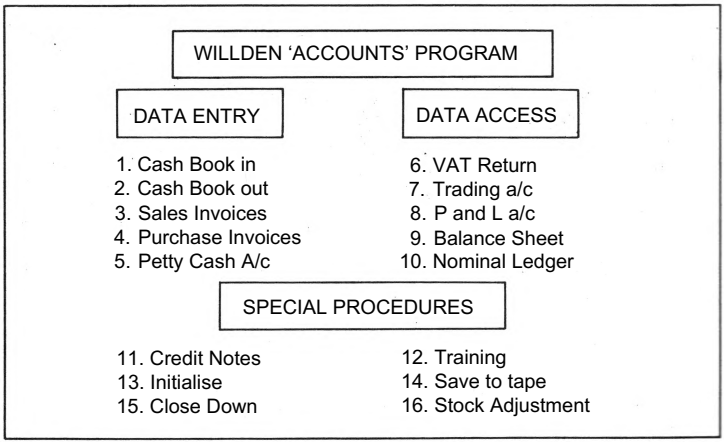
The printer output will provide adequate listed data for your auditor; however, it is recommended that he be consulted prior to regular adoption of the program. In this connection, some reference is made to some of the more obscure accounting functions later in the booklet to explain how these are dealt with by the computer. Bring these to the attention of your auditor in order that he may be better able to advise you.

One unusual feature is the ability of the program to detect the 'state' of the business. Border and ink colour is determined by profitability on the one hand, and the condition of the bank balance on the other.

Program Options

The basis, design and limitations of the program have been outlined in the previous chapter; let us now consider what it is able to do and the extent to which you can benefit from its use, even if you possess only a limited nowledge of programming or accounting.

The MENU displays the routines quite effectively:



What benefit is this likely to be to you?

It would not be far from the truth to say that the tedious entry, analysis and adding up of columns of figures - even if only for the periodic VAT return - is one of the major displeasures in running a business. Forget it. Whilst you will still have to record the individual figures, and no system can avoid this, all the adding up and sorting out is done for you by the computer. For example, just by the press of a button, the Bank account balance will be shown, even to the extent of gently informing you when it becomes overdrawn which,

occasionally, tends to be a feature of the small business.

You want to know how the business is progressing. Just press button “9” and, provided correct data has been entered, a completely up-to-date Balance Sheet will be displayed for you. Press button “8” and the Profit and Loss Account will tell you where all the profit has gone.

Time has come for the VAT return. What do you do now? Spend a few hours collecting together all the various bits of paper, dig out the adding machine and then spend more time making sure that you are not paying too much. Perhaps you have a personal accountant to do this for you - at some suitable cost of course. Again, forget it. Press button “6” and there displayed before you will be all the figures in total ready to be copied into the return form.

Getting Started

That’s enough of explanations, let’s do some accounting.
Insert Side A of the tape (the training side) and
LOAD “accounts”
Following a successful LOAD you will be requested for information in this order:

	Action
Enter your code word	Type *micro* the temporary code
Enter date	Enter date in this form: *1982 APR 15 *note: 1 st 3 letters of the month in capitals

What does this simple entry do?

The code is checked against its inbuilt string and, if identical, moves on to the date request. If not the request will be repeated twice before memory clearance.

The first three letters of the date are checked against the inbuilt financial year string in order to establish the ‘y’ variable upon which assent depreciation and accruals/prepayment write-off is assessed.

Note: The program has an inbuilt ‘year’ of Jan to Dec.

The routine establishes the string from which all printout is dated.

The program will now display the menu options.

Select option “9” to take a quick look at the Balance Sheet; this will be displayed with all its figures set to 0 just like a brand new set of account books.

Return to the menu and select option “12” - the TRAINING route. Then choose option R. What this does is to initialise the memory with the inbuilt figures for our fictitious Company in order to place you in position to do some trading.

You will be returned to the balance sheet automatically in order to see that it has been set up for you to play with.

If the date which you entered initially was from July onwards, certain things will have happened. From six months after the beginning of the financial year which, in this case is Jan to Dec., the fixed assets will begin to be depreciated at predetermined rates. The amount of this depreciation will appear as a loss in the P and L account figure on the assets side of the balance sheet. If you know these things, this is the amount by which the liabilities exceed the assets during the current trading session. As you have yet to record any trading, there is no trading profit to offset it so, let us do some trading and see if we can change that blue border into its more happy green colour.

First of all take a printer copy of the balance sheet so that subsequent output may be checked against it when the following series of transactions is completed.

You have sold something and have produced the invoice and need to enter it into the records. So choose option 3.

We will assume the invoice value is Net £1338.74
VAT 200.81

Gross £1539.55

Enter the *gross* value of the invoice when requested to do so. The display will then ask for the VAT amount but will also print out what the figure should be, just to check the accuracy of your invoice. Enter the VAT amount of £200.81 and the operation is complete because you have only signalled one invoice to enter at the opening of the sales ledger.

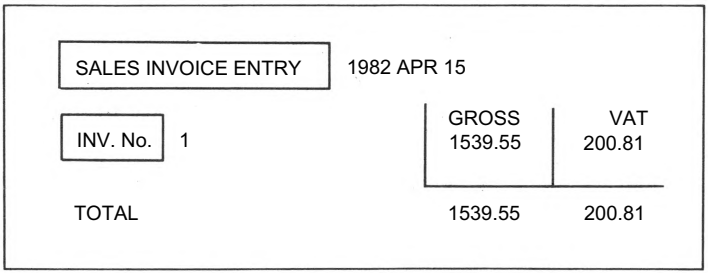
This is just a single transaction involving your entry of two sums. Let us examine what the computer does with these figures.

1. £200.81 is added to the VAT output tax total
2. £1338.74 is added to net sales
3. £1539.55 is added to debtors
4. £937.12 is deducted from the stock value
5. £401.62 is added to gross profit

An explanation is required for items 4 and 5. The program has an inbuilt gross profit rate of 30%. This means that of the net sales value, 30% represents

gross profit (£401.62) and 70% is the amount of stock which has been sold (£937.12).

Take a printer copy of the transaction and then return to the balance sheet to check that this is exactly what the program has done.



The stock needs replacing so go to the 'purchase invoice' routine and enter the invoice which you have just received from Mr. Jones.

Note that each print out is headed with the date which you entered at the beginning; this is so your permanent printer record may be properly identified.

We will assume that the invoice to enter is as follows:

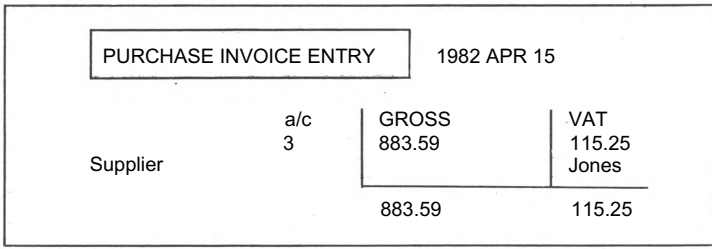
Net	£768.34
VAT	115.25
	£883.59

Enter the *gross* amount and the VAT figure and then you will be requested for the supplier's name followed by the account allocation. Of course, you are buying some more goods for sale so select option 3.

When you have verified the printout, the program takes the action as follows:

1. £115.25 is added to VAT input tax total
2. £768.34 is added to stock value
3. £768.34 is added to goods purchases
4. £883.59 is added to creditors

Other subsidiary accounts are also affected but need not concern this trial.

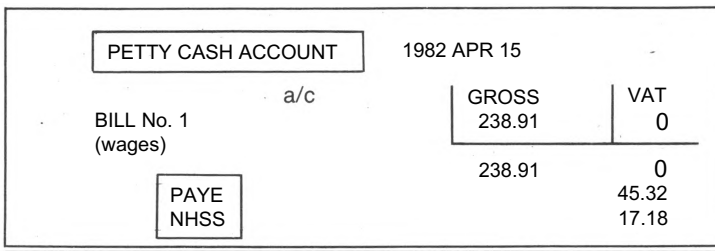


N.B. The purchase invoice entry routine permits 6 different invoices to be entered at a time. This is due to printout limitations. If a greater number than this requires to be entered, the routine must be reaccessed from the menu after having taken a copy of the first 6.

Press R to get a printer copy, and then back to the balance sheet again to see if the various totals have altered in line with what you expected. Return to the menu and this time go to the VAT return option so that you can see how the program presents these figures for you. Check that the two input and output figures agree with the amounts which you entered in the first place. The total which you owe the tax man should be £200.81 -£115.25 i.e. £85.56.

Play about with some further entries; pay some wages and see how you are asked for the PAYE and NHSS figures and how these are added to the balance sheet accounts covering these liabilities.

Examine the Trading and Profit and Loss accounts occasionally just to see how these progress as a result of your various entries. Try introducing some various new stock values so that you can see what happens when your business is able to supply these accurately instead of relying on the estimated gross profit which you indicate at initialisation.



Final Balance Sheet after processing all the previous transactions.

1982 APR 15

BALANCE SHEET

LIABILITIES		ASSETS	
OWN FUNDS	50000.00	PREMS	36747.31
P AND L	100.21	FUR.FIT	3428.29
LOANS	20000.00	VEHICLES	8248.78
		MACHINERY	1732.68
CURRENT		CURRENT	
CREDITORS	5823.41	CASH HAND	-51.45
BANK	0	CASH BANK	4314.05
PREPAY	0	DEBTORS	10186.93
VAT OUT	0	STOCKS	11379.53
PAYE	62.5	PREPAY	0
		VAT IN	0
		P AND L	0
	75986.12		75986.12

Note, particularly, the minus (-) sign appearing against the CASH HAND account. This is because ‘wages’ were paid in excess of the amount held in the account. Reference is made to this situation later in the booklet but again it emphasises the importance of correct sequential entry of all data.

Note: When entering revised stock figures through the ‘stock adjust’ routine, study the gross profit percentage given by the trading account and consider whether or not this should replace that which is in the ‘w’ variable. This, of course, applies when the program is being run for your business regularly.

Operating the System

The following notes explain exactly how each of the various INPUT sums are handled by the system. Follow these notes carefully as they will assist in ensuring the correct analysis of your entries into their proper accounts.

Start with the CASH BOOK In routine

Cash Sales. Entries under this heading are added to the total gross sales account and, after deduction of VAT at 15%, to the net sales total. If the system profit rate is set at 30%, 70% of the net sales value will be deducted from the stock account, the balance, representing the profit on the transaction, will be added to the gross profit total. The bank balance will also be accrued by the total amount paid in.

Loans. Enter only external loans but not Bank overdraft. These sums are credited directly to the B/Sheet 'loans' account and affect no other accounts.

Own funds. Personal loans made to your business, i.e. your own money being paid in.

Interest. Sums received by way of interest. These are added directly to net profit without affecting any other accounts. No VAT is deducted and this section can often be used also for paying in such sums as fees or other items not subject to VAT where the stock value should not be affected.

Sales Ledger. Money received in settlement of your sales invoices previously entered through the sales invoice routine, or debtors carried over from account initialisation.

Discount. Any discount deducted by your customer in making settlement of amounts paid in under Sales Ledger. The total of Sales Ledger receipts and discounts allowed, is deducted from the 'debtors' figure. Discount is not added to the total pay-in which appears on the printout, only the net figure is added to your bank account.

Sundry in. Another useful place for depositing sums received which are not subject to VAT or which do not affect your stock figure. Receipts recorded under this heading are credited directly to gross profit account.

When requested to check the entry by the program, make sure that it is exactly

in accordance with your bank paying-in book; if it is not, reject the entry, find out where the error lies, and then re-enter the correct figures. Once you have signified your agreement with the printout, all accounts are automatically adjusted and some difficulty may be experienced in making adjustments without re-LOADing and starting again from your last SAVEd accounts. Cash Sales include a facility for VAT zero-rating.

CASH BOOK out routine

This operates similarly to the cash-in section except that if cheque payments are made for 'wages', the system requests details of PAYE and NHSS liability arising from the payment. Wage payments plus these latter items are added to the wages account; the Tax/NH amounts add to the PAYE due account shown in the B/Sheet; only the wage total is deducted from the bank account.

Bought Ledger. Together with discount, similar in action to the Sales Ledger section.

VAT OUT. This is reserved for those sums which you pay out in settlement of the quarterly VAT account. A similar section appears in the Cash-in routine for those cases where you enjoy receiving net VAT rather than paying it. This tatter area will be of interest only to those firms with a full or partial zero-rating for their trade.

Petty Cash. Record those sums drawn from the bank for cash-paying purposes. Entries here will have the effect of raising the CASH HAND figure in the balance sheet by the same amount by which the bank account is reduced.

Sundry. Record only those items where there is no VAT input tax claimed. Expenditure under this heading reduces the profit account only, as well as depreciating the bank account.

PAYE. Sums paid out in settlement of PAYE AND NHSS previously deducted from wages and salaries. Refer also to the month-end procedures referred to later in this booklet.

Own Funds. Select this option if you are withdrawing cash for your own use. The program depreciates the 'Own Funds' account and, of course, reduces the Bank account.

The total of each series of entries under the Bank out routine results in the Bank balance being reduced by a corresponding amount.

Sales Invoice entry

This is probably the most simple entry section as no other details are required other than the gross amount of the invoice/s and the VAT amount. The program will print out what the VAT amount should be, but this is just for check purposes; enter only the VAT figure which has already been calculated and entered on your invoice.

Naturally the gross invoice amount is added to your debtors figure, the VAT to the VAT output account, and the profit, after allowance for stock depreciation already referred to, is added to the profit account. The various VAT supplementary accounts are also influenced by entries in this section.

Purchase invoices

This section permits allocation of suppliers' invoices which you receive, to the 15 different expenditure accounts provided by the program and which are detailed on the display. One particular feature of this section is that VAT is.not deducted from Vehicle purchases in the Capital Expenditure area in arriving at the VAT input tax figure.

The total of purchase invoices is, of course, added to the B/Sheet 'creditors' total, all the other accounts being affected according to the allocation which you select for each invoice.

Both the supplier's name and the account allocation is asked for by the program, and these details are printed on the screen and printer for your records.

Petty Cash

Operates exactly the same as purchase invoices except that the total payout is deducted from the CASH HAND b/sheet total. Again, a selection of accounts is displayed for user option which, in respect of wage payments, similarly requests PAYE and NHSS liabilities in respect of the payments. In this connection, and also in the Cash Book out routine, if you indicate a VAT amount for a particular payment and then select 'wages' as the account allocation, the program will refuse to accept the entry because it is invalid. This also applies to VAT deductions in respect of vehicle purchase.

Depreciation

The program automatically depreciates the fixed assets appearing in the b/sheet by appropriate amounts i.e. $2^1/_2$% for premises; 20% for machinery and cars; 10% for furniture and fittings. Although this can be carried out

monthly, the program has been adjusted so that depreciation is only applied after 6 months of the particular financial year; from then on it is calculated monthly until the full annual rate is reached at the end of the 12 months.

Program Features

In a program of this magnitude the operating procedures are too complex to be able to adequately describe them in a booklet such as this, however, some particular areas are considered to be of possible interest to the user and these can be described as follows:

Colour

As has already been described, the colour presentation on the screen is conditioned by the state of various main accounts. Each particular section directs the program to a subroutine which selects a further subroutine according to the state of the profit account and the bank balance account. The four different ‘states’ may be described:

No profit/bank overdrawn	Border blue: Print red
Profit/cash in bank	Border green: Print black
No profit/cash in bank	Border blue: Print black
Profit/bank overdrawn	Border green: Print red

Data Input

All figure entries to the program are accepted as ‘strings’. These are evaluated by error-trapping subroutines to avoid the mistaken input of characters (the decimal point is acceptable but not a minus ‘-’ mark).

The initial entry date is of particular significance in this respect - the first three letters of the month needing to be input as capital letters. This date entry is ‘sliced’ and, together with spaces, is used to assign a value to the variable (y) which affects the monthly depreciation.

Arrays and Variables

Note: Account names are abbreviated for printout purposes.

The numeric array subscript is identical to the listed string array subscript given below.

DIM n$ (50,9)

n$
(1) Owner's Funds
(2) Profit & Loss account
(3) Loans received
(4) Creditors
(5) PAYE/NHSS tax due
(6) Prepayments received
(7) VAT output tax
(8) Capital a/c Premises
(9) Capital a/c Machinery
(10) Capital a/c Furniture & Fittings
(11) Capital a/c Vehicles
(12) Petty Cash account
(13) Bank a/c paid in
(14) Debtors
(15) Bank a/c paid out
(16) Closing stock
(17) Prepayments made
(18) Goods purchased for sale
(19) Rent and Rates
(20) Interest received
(21) Interest paid
(22) Light, Heat & Power costs
(23) Stationery & Post

n$
(24) Repairs & Maintenance
(25) Depreciation
(26) Travelling & Entertainment
(27) Telephone costs
(28) VAT input tax
(29) Sales net of VAT
(30) Sundry income
(31) Wages & Salaries
(32) Sundry payout
(33) Motor expenses
(34) Gross profit
(35) Advertising
(36) Purchases including VAT
(37) Sales including VAT
(38) Purchases excluding VAT
(39) Insurances
(40) to (50) These accounts refer to various VAT totals carried forward where the quarterly VAT return does not match the financial year of the business.
s(1) Opening stock

above are SAVEd arrays (numeric)

Subsidiary program arrays

Balance sheet	t(19)
Bank pay in	a(10)
Bank pay out	b(10)

a$(10,9) for titles
b$(10,9) for titles

Variables

String - j$ - 32 blank spaces m$ 'year' string
k$ - verification i$ code
d$ - date
r$ - general numeric input
Numeric m - VAL r$ for print position
k - gross sales or purchases
b-VAT
w - gross profit calculation
y - depreciation
v - VAT calculation
Counting variables c, d, e, f, g, h, l, n, o, p, q, r, s, t.
Loops x, j.

Returns and Credit Notes

Whenever goods are returned, either by you to your supplier or by your customer to you, a credit note should cover the transaction, and this can be entered through the 'credit note' routine; however, this is what should happen in well regulated businesses, but the ideal is often far from the actual practice.

Where it is your system to issue invoices for supply of goods or services and the return is for goods previously invoiced, then do make out your own credit note if only to support the entry which you will be making though the credit note routine. This is necessary to ensure satisfactory adjustments of the VAT and stock figures, and debtors/creditors. Where yours is a cash business it is a little more tricky to adjust if it is to be done accurately. You can, of course, just reduce the amount which you pay in to the bank from current takings and everything will be quite o.k. provided that the goods are actually returned and in good condition. If not, then your stock value will be overstated by the amount in question and you may wish to adjust it through the proper routine.

Sale of Assets

A situation not covered by the program but which, fortunately, occurs only very rarely, is the sale of fixed assets. Accommodating such transactions is a little complicated but it can be done if the following procedure is followed exactly.

Let us assume that you have sold an asset for £1000.

You will raise an invoice and enter this through the sales invoice routine. As

we already know this will increase your debtors figure by the amount for which the asset has been sold, and will also increment the VAT output tax total if VAT is applicable.

What this process will do incorrectly is to depreciate the stock figure by 70% of the net sales value and, at the same time, raise the gross profit by the balance of 30%. To record this transaction correctly, we have to adjust these accounts back to their original levels.

This is how it should be done. Prior to entry of the sale invoice, take a copy of the balance sheet in order that you know the starting totals. Enter the invoice through the sale invoice routine in the normal way. Then go into direct command mode and enter:

LET n(34) = (enter the original value) to adjust p & l
LET n(16) = (enter the original value) to adjust stock
*LET n(11) = (enter £1000 less than original value) to reduce capital a/c
*8 9 10 or 11 according to which capital account.

The end effect of all this is that the £1000 decrease in the vehicle capital account will be directly balanced by the £1000 increase in debtors. Any VAT amounts will be balanced by the VAT output tax total compensating for the higher debtors total in respect of the VAT.

Balance Sheet

In normal account records there is no such thing as a negative amount. A figure is always positive for entry in either the left hand column or the right (Dr. and Cr.).

What happens if, for example, you sell something which you haven't got. This does not refer to the illegal variety of the transaction but where your sales invoice is issued in advance of the supplier's invoice covering the goods which you have sold. In normal accounting where a balance sheet is produced only very occasionally, the accountant creates a 'reserve' in anticipation of the arrival of the invoice.

This sort of thing leaves all sorts of complications and is where the book-keeping begins to depart from the ken of the average trader. This is also where the program begins to leave the strictly correct paths of accounting righteousness by accepting the concept of a minus figure - at least until the entry of compensating figures.

In the case of the Bank account, where this runs into a minus figure, the printout of the balance just moves over to the left hand side of the balance sheet - still as a positive sum. In the case of the stock account this is just not realistic because there is no such thing as a minus stock value - you have

either got it (greater than 0) or you have not (= 0) - no other state can exist.

Well with our program it can.

You issue a sales invoice for some goods for which you have yet to receive the supplier's invoice. This is a very common occurrence, particularly in the fast turnover type of business dealing in perishable goods where bulk invoices are received periodically for goods supplied over an extended period.

When this happens with our program it is possible for the stock figure to move into a minus state which, unless so indicated, can produce some very odd looking balance sheets. When this happens, you will notice a minus sign appearing against the stock figure in the balance sheet printout. But do not be disturbed, the figure will automatically adjust to its proper level when the invoices have been entered. Exactly the same thing can happen if you spend some petty cash and try to enter the chit when no cash has been drawn to meet it. The minus sign will appear and will remain until such time as you enter a cash' cheque through the Bank out routine.

On the other hand, if you make crazy entries, e.g. a cash receipt from an invoiced customer, when there is no 'debtors' balance shown in the balance sheet, the resulting minus figure will not be so marked. This emphasises the importance of correct sequential entry of data.

In the 'working' side of the program it is important that you have an indication of the proper state of the Balance Sheet and minus signs will appear whenever an account moves into this state. If this does occur, make sure that you know which of your entries has been made out of sequence, or what action has created the illogical result. Some further indications of how this can happen are given later in the booklet.

The design of the program has endeavoured to anticipate the type of error that occasionally creeps in to the best regulated systems.

For example, in normal book-keeping the amount of net VAT due at a particular time can usually be ascertained from the written sequential records at any later date. Because our program operates by updating totals rather than by maintaining long records of individual transactions, there is a danger that if a total is not taken at the right time, the actual figure will only then be obtainable by a painful process of going through the printer records covering the period in question.

When the printer record of VAT return figures is taken, the program transfers the difference between VAT output tax and VAT input tax balance sheet amounts to the 'creditors' or 'debtors' account, the reason for doing this is so that these VAT accounts always represent amounts due for the current trading session for VAT; in other words, one quarter's figures do not become corrupted by another quarter. It is important that the VAT return printer copy is taken at the time the VAT is due to be paid. Of course this is a needless warning

because all ZX users pay their VAT precisely on time.

Similarly for PAYE/NHSS, make out the cheques on time and put them through 'the books' although the PAYE account, being supported by your PAYE records, does not become transferred to creditors at the end of the month.

All other balance sheet accounts can become minus figures, without being so marked, if unrealistic entries are made so do take care when making those unusual entries to the system and make sure that you know precisely what you are doing.

Different Businesses

As indicated earlier in the booklet, the program is mainly designed for the 'trading' type of company where a buying and selling operation is involved; however, with minor modification it can be adjusted to suit other types of trade, some of which can project an even more accurate profitability position.

The fee-earning business

Where a company operates a service and achieves its income by way of fees or commission, the gross income, as well as representing the 'sales' value (less VAT, of course), also forms the gross profit of the operation, thereby removing the gross profit deficiency of the existing program. All that needs to be done is for the gross profit variable (w) to be set at 1 at initialisation, which means, in effect that no stock depreciation is effected, the figure remaining at 0 at all times.

The type of business dealing in perishable goods normally maintains a very low level of stock. The variation in value and the total value of stocks is usually so small as not to have any bearing on the progress of the business. In such cases it is as well to 'write off' the stock value at initialisation. This is done by reducing the stock value to nil and making an exactly comparable reduction in the 'Own Funds' total to maintain the balance. Subsequently, all that needs to be done is to continually adjust the stock back to 0 prior to taking a copy of the balance sheet. This also removes the complication of late arrival of suppliers' invoices as these are automatically allowed for in the gross profit computation. Where the receipt and entry of suppliers' invoices is right up-to-date, it is as well to access the balance sheet before stock adjustment because a stock deficiency figure or a positive figure will indicate the extent by which your estimated gross profit percentage (the 'w' variable) varies from the actual gross profit percent.

The manufacturing business

Whatever adjustments are made to the program a significant loss of accuracy in profit indication arises with the manufacturing business because of complications already referred to. The best suggestion that we can make in such circumstances is that where there is a reasonably constant stockholding level. This item could well be dealt with in the same way as the perishable goods system above and. at the same time set the 'w' variable to 1 (i.e. 100% g. prof it) and then treating all outgoings through the p and I account as expenses. The output will then be accurate to the extent that the actual stock level departs from the calculated (constant) level. If in any doubt about this procedure, no doubt your accountant will advise you.

The non-VAT-registered business

In such cases all that needs to be done is to enter a 0 when requested by the program. However in the cash sales entry through the Cash book, VAT is deducted automatically from such receipts. To adjust this you will need to enter a line to the program as follows:

1262 LET v = 0
which replaces the following VAT calculating line:
1262 LET v = INT(a(1)*300/23)/100

Remember this line, it may not be too long before you have to start registering for VAT, then you will need to put it back in place.

Initialisation

By now you are fully conversant with the program operation and wish to get all of your figures into the memory so as to start using the system regularly.

The first task is to ensure that you have all the information which needs to be input through the initialisation process. You will require:

(a) balancing asset and liability Balance Sheet figures which have been summarised into the program headings in accordance with the suggestions contained in the chapter dealing with this subject.

(b) A 36 character string starting with the first 3 letters of the first month of your financial year and the first 3 letters of each subsequent month.

(c) The profit rate at which you wish the program to operate

(d) Your personal 5 character (or digit) code.

It is recommended that prior to the adoption of the system that you arrange for the end of the VAT quarter to coincide with the end of your financial year because this greatly simplifies the handling of VAT. If this cannot be done then you will require from your Accountant the following details of outstanding VAT figures relating to the last 1 or 2 months of the VAT quarter arising in the previous financial year.

Program Name Sum referred to
"FwdVATSi" = Forward VAT Sales inclusive of VAT
"FwdVATse" = Forward VAT Sales exclusive of VAT
"FwdVATPi" = Forward VAT Purchases inclusive of VAT
"FwdVATPe" = Forward VAT Purchases exclusive of VAT
"FQVatOut" = Forward quarter VAT output tax
"FQVatin" = Forward quarter VAT input tax
"FQVatDue" = Forward quarter VAT tax due

Now you are ready to go. From the training side of the tape, access the initialisation routine and you will be requested for the Balance Sheet figures - first the liabilities, then the assets and in the order in which they appear in the Balance Sheet printout.

Next you will be requested for outstanding VAT figures shown above. If the VAT quarter coincides with your financial year then enter 0 against each of the input requests.

When all of these figures have been entered, they will be rejected if the liabilities do not exactly total the assets. If they do, the program will automatically take you to the Balance Sheet printout for final checking of the figures. If these are correct, have a look also at the VAT return option just to make quite sure that your start up figures have been entered correctly.

Load a tape into your recorder; go to the "Save to tape" menu option and record the datafile. VERIFY the tape by entering VERIFY "accounts" data n(). When all is in order, place the tape on one side and close the training side of the program.

The 'Working' Side

Turn to Side B of the program tape and LOAD "accounts".
You will be requested for the temporary code (micro) and then the date in the usual way, and then taken to the menu.

Note: The date which you enter at this stage will, of course, need to be the date immediately following the close of your previous financial year. This is because you will probably have a series of entries to make to bring your accounts up to the present time.

Go to the Balance Sheet option and when the screen is complete go into direct command mode by pressing CAPS SHIFT/BREAK.

You will have already selected your personal 5 letter code word. Enter this with line number as follows:

295 LET i$ = “whatever it is”

This 5 letter (or digit) code will replace the ‘micro’ which you have used for entry until now.

Next, enter the 36 letter financial year string thus:

292 LET m$ = “FEBMARAPR etc. etc.”
Note: In CAPITAL LETTERS.

If your financial year is from January to December this section may be bypassed.

Now for your estimated Gross Profit figure. If this is decided to be 40% enter this as follows:

104 LET w= .4
Note: decimal point 4, not 40

Now GOTO 9980 to SAVE the revised program on a fresh blank tape. This will then become your personalised program. Then GOTO 1 ready to start work - still using the existing program.

Now it is time to LOAD the account data which you record from the initialisation routine from side 1. Place,the tape in your recorder, select Load data option from the menu, press ‘play’ on the recorder and then ENTER on your Spectrum. The next screen printout will be a menu. Choose the Balance Sheet option to check that all is well.

The program is now completely ready for all your future entries.

Caution. Now you are ready to operate the system but a few words of some unexpected results, and how to deal with them, will not come amiss.

Firstly the ‘glitch’. As you probably already know, there occasionally occurs either a complete loss of program or an unintentional BREAK. Although in the latter case it is possible that no corruption of data has taken place, you can by no means be certain that this is so. It is recommended therefore that in either case, the program is reLOADed from the previous SAVEd position and all entries remade.

Secondly there is the question of records. Always take a printer copy of each of your entries when requested to do so; these records are very necessary. In this connection, when the prompt “Press r for hard copy” appears, pressing button ‘n’ will return you to the menu without a copy; this is just for use during the practice routine where a copy is not required each time.

Checking the screen printout thoroughly will pay dividends. Do not press button ‘y’ when prompted until you are completely sure that the record is correct because it is difficult to effect adjustments subsequent to the entry being O.K.d.

Make sure that you understand the effect of each entry and how it influences the various connected accounts, by doing so it will be that much easier to determine how a particular unusual entry may be dealt with.

Make written notes on the printout copy if an explanation may be of assistance in the future when the significance of the entry has been forgotten.

Always try to provide written documents supporting each individual entry; make a written note if nothing else exists. Whilst the filing system must be left to the discretion of the user, it has been found that attachment of the printout to each series of documents which it covers, is a very good arrangement, particularly if these are all filed in date sequence.

End of Month Routines

Although it is not vital to make any special arrangements at the end of the month, it will be found that the following simple procedures will greatly improve your accounting.

As you are aware, PAYE returns are made for each month up until the 5th day of the following month, i.e. if you make a wage payment on 5th May the PAYE deducted is due to be paid to the Inland Revenue with the payments for April. It is as well, therefore, to treat the 6th of each month as the starting date, by which time all wages will have been paid and most invoices due from your suppliers be in your possession.

At the 6th of the month.

1. Enter any cheques drawn up to the end of the last month.

2. Enter all sales invoices for the previous month that have not already been recorded.

3. Enter all payments to your bank account up to the end of the previous month.

4. Enter any petty cash payments up to the end of the previous month, plus any wages paid up to 5th of the current month.

5. Record any purchase invoices for the last month that have not already been entered.

6. Is the VAT Return due? If so go to the VAT RETURN menu option and take a printer copy of the VAT figures. It is important that this be done *after* the 5 preceding operations.

7. Make out the PAYE and VAT cheques for payment on the due date and enter the payments to the system just in case you are tempted to spend the money.

Note: It is advisable not to make any entries for the current month until all the month-end procedures outlined above have been completed.

Prepayments Outstandings and Accruals

When preparing your accounts prior to initialisation, your Accountant will, in all probability, have made allowances for prepayments and accrued expenses.

The Rates that you pay to the local council is a good example. Let us say that yor financial year begins in January and that you paid the total rate for the year to March in the previous October. As part of this rate bill will be in respect of the new financial year, your Accountant will adjust the figures for the previous year by raising the net profit on the liabilities side of the Balance Sheet and creating a ‘prepayments’ figure on the assets side. At the start of the new year this amount will be transferred into the appropriate P and L account which means that a deficiency has already arisen before you even start any trading. The initialisation process has to take care of this sort of situation.

An example of ‘accrued expenses’ is where, for instance, you have received goods or services for which you have yet to receive an invoice or make payment. In such an event your Accountant will take the reverse action to that under prepayments by reducing the net profit and making appropriate balancing entries on the other side.

The program operates by writing off such outstandings over a six-month period from the start of the new financial year.

If you do not have good accounting experience it is as well to ask your Accountant to so adjust the initialisation figures that these figures are removed from the Balance Sheet and that the section provided for their entry is kept at 0. He will know how to do this for your particular business so that the effect on subsequent output is minimal.

The main problem with this type of situation is that whereas the actual charge can be catered for, the VAT liability only arises at the date of an invoice and not when you have received the goods or service to which the item relates.

The minus sign

It has already been explained that it is quite possible for minus signs to appear against any of the figures output by your program. Of course, if proper sequential data entry is followed this should not happen very often. However, here are a few of the occasions which can give rise to a minus sign.

The first entry of your financial year is a sales credit note issued in respect of goods supplied in the previous year but returned in the current year. Minus signs will appear all over the place in this event until your new sales exceed the value of the credit note.

You have drawn funds from the bank for your own use via the cash-book-out routine when their is nothing in the Balance Sheet 'Own Funds' account to meet it. A minus sign will appear on the b/s.

A VAT payment cheque is entered through the cash-book-out routine without you having taken a printer copy of the VAT return figures (option 6).

If the VAT payment is greater than the outstanding creditors figure a minus sign will appear. Remember, a VAT liability is only transferred from the VAT account into the creditors account when a printer copy is taken at the proper time.

The coding for these minus signs is only included in the 'working' program, not in the 'training' section (apart from Cash in hand and Stocks). This is due to memory limitations of the latter section. Use the 'working' section during your practice periods to familiarise yourself with the effect of these additional facilities.

Bank Standing Orders

Because each payment will have a specific expense allocation, the program does not provide for automatic recording of monthly or quarterly standing orders; these will need to be entered by the user on the appropriate dates in the

month and allocated to the proper expense account at the time the payment is made. Alternatively, the necessary entries can be made upon receipt of your monthly Bank statement although this method does detract from the day-to-day accuracy of the Bank account figures.

Hire purchase payments should also be treated in the same way; as these are usually in respect of capital items, the appropriate allocation can be made at the time. Care will need to be exercised that hire purchase payments are
* assigned to the bought ledger where the original invoice for the goods has already been entered and allocated. Leasing payments, on the other hand, will be posted direct to the appropriate expense account.

The four Capital accounts included in the program may need to be changed,
• either in respect of their titles or possibly the depreciation rates that have been included. If these need to be changed, LIST the program at the beginning if the titles are to be changed and SCROLL until the appropriate n$ name appears. Edit this and replace it with the new name.

If the rates of depreciation need to be changed, this is a little more complicated but provided you make sure of the accuracy of your figures it can be done by alteration of the following line numbers:

6812 IF n(10)>=0 AND y> = 6 THEN LET p = INT(n(10)/* 10/12xyx100/100
applies to a 10% depreciation rate)
6814 IF. n(11)>0 AND y> = 6 THEN LET r = INT(n(11)/*5/12xyx100)/100
applies to a 20% depreciation rate)
Line 6816 applies to 20% Line 6818 applies to $2^1/2$ %

If you wish to change a rate, the starred figures should be changed. For example, if you wished to have a 33.3% rate of depreciation, the figure 10 or 5 above should be changed to a 3.

Maybe you only wish the depreciation to be shown in the last month of the year; if so change AND y> = 6 to AND y> = 12. If you wish the depreciation to be shown from the start of the year then leave out AND y altogether.

* It is possible, of course, to greatly simplify the above lines; however, they are left in this form to facilitate any alterations which you may wish to make.

It should be pointed out that in the program operation, the values of the Capital accounts remain at the same level, the depreciation only being
• calculated for Balance Sheet purposes. This means to say that if you look at a Capital account through the 'nominal ledger' routine, the total shown will be different to that appearing in the Balance Sheet. If you add together the four Capital account totals in the 'nominal ledger' and then deduct the depreciation total, the resulting figure will equal the total of the four figures appearing in the Balance Sheet. Naturally, if you buy some capital goods during the year then the accounts will, in each case, be increased accordingly.

SAVEing and LOADing

It is appropriate that a few words be said about SAVEing and LOADing.

When the entries have been completed for each session you will need to SAVE the data to tape. Remember, it is not necessary to SAVE the program which, in every case, should be LOADed from your personalised program.

Select the 'Save to tape' option from the menu. Initially select a new tape which you intend to use for recording data, wind the tape on by hand until the recording section just appears, place the tape in the recorder, press the tape counter to *0,* press the 'record' key and when the count reaches 3, press any key on your Spectrum. In a few seconds the data will be SAVEd. Return the tape counter to 0. Insert the EAR plug to the recorder (it should be removed when SAVEing) and verify by:

VERIFY "accounts" DATA n()

When the OK sign appears the system may be shut down until the next time you have data to record.

Note: When next you LOAD the data tape, automatically move the tape counter , on to 10 so it is ready for the next SAVE. If you always move the tape forward in counts of 10 it will be that much easier to select a date if you wish to refer back to a particular period at any time.

When SAVEing, always make a written note on the tape record card of the date and appropriate tape counter number under which it was recorded.

It is always a good idea to record twice, on different tapes, just in case a tape becomes damaged and unloadable. The few seconds it takes to save the data makes this trouble well worth while.

In subsequent data entry sessions, remember to first LOAD the program and then LOAD the data via the LOAD data menu option. Do not try to load the data tape first.

Take a printer copy of the Balance Sheet at the beginning and end of each session so that each ties in with the previous session and the later one.

Size of Program

The program consumes just less than 41,000 bytes of memory; it loads in $3^{1}/_{2}$ minutes. It operates with a single numeric array -n(51) and can handle sums up to £1 million (or more if you do not object to print-out obliteration). It provides through the printer a permanent record of all of your transactions with all necessary data for audit or VAT purposes.

Program output

At any time, and provided your entries have been correct, you are able to extract complete details of the operation of your business, together with the particularly valuable feature, the VAT return. It is simple to operate once the slightly complicated initiation process is complete, and, being written entirely in BASIC, can easily be adjusted for individual applications with just a limited programming knowledge.

Program Alteration

As this program is very interactive insofar as its various routines are concerned, it is most unwise to effect changes to the variables or arrays without i rst tracing through the influence of such alterations; this is by no means an easy task because of the length and complexity of the program.

There are, however, certain changes that can be made without any adverse nfluence on the operation. For example, changing the name of a Profit and LOSS account expense item creates no difficulty, provided the VAT implication of the original and the replacement remain the same. These names are nitialised between lines 100 to 300.

It is possible to change numeric arrays forming the 'nominal ledger' accounts, but of course, changing of one figure will automatically remove the Balance' and will serve no purpose at all. If you need to make adjustments of :nis type, ensure that the changes that you do make are of a balancing nature. Remember that there are no supporting documents for the changes which are being made. The 'sale of assets' referred to earlier is an example of the type of adjustment which may be made if all relevant accounts are changed correctly.

Updating the stock value under the 'stock adjust' routine is perfectly satisfactory because the affected accounts are altered by the program automatically.

The types of payments which you pay into the bank may differ from those that have been provided for in the program. Change the titles if necessary but do not forget the VAT implications of each of the cash-in items. These are referred to earlier in the booklet.

Petty Cash titles may also be changed if similar VAT precautions are observed.

The program is at the limits of the available ZX Spectrum 48K memory; do not attempt to make additions.

To the Accountant

If you have read this booklet you will readily appreciate that the program is not designed to replace your work. It is intended to provide your client with accounting information through the year that is not otherwise available from the annual service which you provide.

To enable your client to initialise the program satisfactorily he will require the normal balance sheet figures which you provide, to be summarised into the program headings. These notes are intended to assist you in providing this information.

The first requirement is for the outstanding VAT figures where the VAT year does not coincide with the year of your client's business; where it does so, no other information is required other than for you to include any outstanding VAT amount with 'creditors' or 'debtors' totals as the case may be.

The figures required are:

1. Brought forward Sales inclusive of VAT for last one or two months
2. Brought forward Sales exclusive of VAT for last one or two months
3. Brought forward Purchases inclusive of VAT for last one or two mdnths
4. Brought forward Purchases exclusive of VAT for last one or two months
5. Brought forward VAT output tax due for last one or two months
6. Brought forward VAT input tax due for last one or two months

Depreciation

The program operates at the rates referred to earlier in the booklet. We consider these to be quite satisfactory as a guide during the year, particularly as you will calculate the correct figures with all proper tax allowances at the year end.

Corporation tax and outstading Audit fees

You will have provided for liabilities in respect of these items in the year end balance sheet. These should be incorporated within the 'creditors' total for summary purposes.

Profit and Loss Account Reserve

Any profit for the year should be incorporated with 'Own Funds' for purposes of the summary. If a loss exists for the period then this should be deducted.

Prepayments and Accrued Expenses

Reference is made earlier in the booklet to the treatment of these items. It is not possible for us to recommend a particular course of action because of the wide variety of possible situations leading to such reserves. In the Balance Sheet summarisation all that we can suggest is that the net difference between these items is put into the net profit or net loss figure (as the case may be) and included as such at account initialisation. In this way the section reserved for prepayments/accruals may be left at 0. It is felt that such a treatment will simplify operation for your client without detracting from the proper VAT implications of outstanding invoices.

Assistance

It would be of assistance to your client to have your validation of the various routines by satisfying yourself that the correct account assignment is being conducted by the various data entry options. Needless to say it has been tested quite exhaustively under a variety of situations but in a program of this complexity it is always possible for some minor defect to appear. We are particularly concerned about the lack of a 'contra' facility within the 'Cash book', although this should not be of undue concern in the large majority of cases.

In the chapter covering different types of business we have indicated where varying operational practices could be more usefully employed. Please advise your client in this respect.

In the 'purchase invoice' entry section, the account number to which the particular invoice relates is printed centre/left against the particular amount and above the name of the supplier. It is emphasised that these numbers do not coincide with the actual array n(1) to n(50) numbers, but to the following:

Allocation Number	*Allocation Number*
1. Advertisements	9. Motor Expenses
2. Rent & Rates etc.	10. Sundry Costs
3. Goods for Sale	11. Capital Premises
4. Light & Heat	12. Capital Furniture & Fittings
5. Stationery & Postage	13. Capital Vehicles
6. Repairs & Maintenance	14. Capital Machinery
7. Travel & Entertainment	15. Insurances
8. Telephone	

VAT payments

If the program is initialised long after the date of the last balance sheet, there is a strong probability that the VAT liability arrived at upon subsequent due dates, will not coincide exactly with the program output in respect of these items. Please advise your client which balancing entries he should make to the program to adjust such discrepancies.

Balance Sheet Summary for Initialisation

The purpose of this program is to provide your client with an accurate picture of the progress of his business until such time as you again review the figures for formal accounting purposes; summarisation of your Balance Sheet into the titles indicated in our program should, therefore take due note of this intention.

For this purpose the P & L Balance Sheet figure in the program output should start at 0 - that is apart from any figures you wish to include arising from net prepayments and accruals. The reason for this is, of course, so that these figures, particularly when supplemented by up-to-date stock values, will provide your client with an accurate picture of his profitability during the current trading session.

No provision is made for Deposit account balances; these may be included with, or excluded from the Bank balance at your discretion provided that your client is fully aware of how such accounts have been treated.

Please assist your client in making arrangements for transfer of the VAT return date so as to coincide with his financial year.

The foregoing comments should largely influence the summarisation treatment which you give to the various sums which will require combination into the program Balance Sheet headings.

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