PROPHET II

Mike Liardet reviews an allinone spreadsheet system which combines hardware and software in a budgetprice package.

My first encounter with the Prophet II system was a rather energetic one: carrying it down three flights of stairs from the *PCW* offices, into the car, then back up three flights of stairs into my flat. `So what?', I hear you say, 'Liardet must be pretty feeble if he can't manage to carry a software package a few yards.' Ah! but this package includes the hardware, doesn't it? And it's a particularly 'hard' piece of `hardware', too!

Basically Prophet I1 comes as a complete dedicated spreadsheet system —hardware, software, everything you need (bar a printer) at a very modest price of just £795 +VAT. The actual physical components of the system are a modified Acorn Atom computer, a Ferguson 12in black and white television and a Pearlcorder microcassette recorder — all fairly lightweight items. However, in an intriguing attempt to marry Victorian engineering with the marvels of today's silicon revolution, Busicomputers — the supplier of the system — has housed all these components in what can best be described as a robust metal case. The case comes complete with carrying handle, but no rubber feet — so if you buy one, don't be like me and plonk it straight down on a polished table. Any other complaints? Well, yes there are, actually there's no on/off switch — you have to use the plug, and the case obstructs the aerial socket of the TV, making it difficult to use *as a* conventional TV, should you wish to do so. At least the microcassette is detachable and can be used independently if so desired, and the computer can be used as a straightforward Acorn Atom in addition to its spreadsheet function by simply flicking a switch.

Getting started

Anyway, having got the system home, where do you start? Well, quite simply, plug in the single mains plug, switch on the TV (the Prophet H one, that is), twiddle the tuning dial and with minimal fuss you are faced with the spreadsheet display. Refer to the manual and off you go!

To anyone who has seen a number of spreadsheet systems, the initial display has a fairly reassuringly familiar look about it The bottom 13 lines of the screen (out of 16) are dedicated to the spreadsheet window. The top left hand corner of the spreadsheet is currently 'inwindow', with the cursor (displayed using inverse video) at the very top left hand cell. Also in inverse video, down the left hand side are listed the row coordinates (numbers), and along the top are the column coordinates (letters). The top three lines of the screen are also in inverse video, but are reserved for special messages, and so on.

Moving the cursor around the spreadsheet is very simple. The Atom has four keys (up, down, left and right) at the side of the keyboard and simply pushing these moves the cursor in the obvious directions. Moving the cursor off the right or bottom edge of the screen causes a rapid screen redraw — the window position is being adjusted to follow the new cursor position. The cursor actually remains physically where it was before, but the coordinates have changed. Moving off the bottom of the screen causes row 1 to disappear, and be replaced by row 13 at the bottom — row 2 being the new top row on the display. A similar thing happens to the column coordinates when the cursor moves off the right hand side of the screen. Holding the arrow keys down causes very rapid cursor movement, with lightningfast screen redraws. Unfortunately, this redrawing is accompanied by a somewhat disturbing ` tracerstorm' on the display. As sbon as you let go of the key the display returns to normal.

By continually moving the cursor away from the top left hand corner, the overall boundaries of the spreadsheet can be established: 255 rows by 63 columns (columns after the 26th are identified as AA..AZ,BA..BK). Attempts to move any further than this are flagged with beeps from the Acorn speaker. The system provides a direct cursor 'jump' facility: a few keystrokes and we have leapt back to the top left hand corner. Actually there is also a

rapid cursor move facility: holding 'shift' and an arrow key simultaneously, the cursor leapfrogs ten cells at a time, which is quite useful for middle distance 'jumps'.

Entering numbers and text in the spreadsheet is very straightforward: simply move the cursor where you want, and type away, terminating with ' return' to 'fix' it there. (Terminating with an arrow key results in the cell being left blank and the text being moved with the cursor to an adjacent cell.) If you enter a decimal number it is a little bit disconcerting: at switchon the display format for numbers is integeronly and consequently your decimal number is displayed rounded to the nearest integer. After some scouring of the manual, it transpires that all is in order — if you change the display format (fairly easy to do) you will see your number correctly displayed. Regardless of display, the system has correctly ' remembered' your original entry.

Doing calculations

Setting up a calculation is almost as easy as entering numbers and text Prophet I1 uses the fairly standard notation already familiar to anyone who has ever written a program, and picked up easily by anyone versed in most basic mathematics. Cells are identified by their coordinates, '*' is used to signify 'multiply' and '/' for 'divide' — thus expressions can be built up like '(A1*B3 (C4—A1))'. So to get Prophet I1 calculating simply move the cursor to the required cell, type in the expression and see the instant results of the calculation. Jump back to any of the referenced cells, change a value, and see the new recalculated value instantly displayed. Change one of the referenced cells from numeric to text data, and we can quickly verify that Prophet II does not go haywire (good!).

Prophet H comes with an extensive range of other functions, apart from the elementary arithmetic: square roots, logs, trig, degrees to radians, a random number generator — in fact just about everything

So simple a hamster can use it?

you could possibly want in this respect. Special functions, not normally encountered outside the world of spreadsheets like `SUM', 'MAX', ' COUNT', 'net present value' and others have all been implemented to operate on a rectangular block of cells as well as being capable of dealing with a simple row or column. There is also a function called 'TOP' which returns the amount of memory still available. Unfortunately, the display itself does not provide this information automatically, so if you are reaching the point where memory is getting scarce you must keep referring to this

function. (Incidentally the system does not `crash' if you attempt to exceed its memory capacity — it merely displays `E' (for `exceeded'?) and refuses to allow you to do anything that would consume any more memory.)

Special facilities

Mueh to my relief, the system comes well equipped with a formula replication facility — the Benchmark tests involve filling the system up to saturation point, easily done with replication, but a major cause of

`reviewer's digit' if you have to do it manually! Incidentally, most of the extra facilities, such as replication, format changes, and others yet to be mentioned, are invoked by hitting the key, followed by a sequence of mnemonics — eg, '/FA A1 L9' means 'Format Area from A1 to L9'. Although the facilities are all well described in the manual, and there is also a reference card stuck on the case, it was sometimes difficult to remember or find the correct sequence. Unfortunately the system provided very little prompting, most of the time keystrokes being passively dis-

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played at the top of the screen with no additional information. Obviously these difficulties pass once complete familiarity with the system has been gained, but a little more help at the learning stage would have been appreciated!

There are also adequate facilities for deleting and inserting rows and columns, or rather crossing out and inserting lines and columns (since the delete mnemonic is 'X' for 'cross out' and the row mnemonic is 'L' for 'line).

Prophet II provides a facility for editing formulae or whatever may have already been entered into a cell. It was only when I reached this point in the manual, where an exercise is set to change 'PROFIT' to `PROPHET' by editing, that I appreciated the product name is in fact a pun — obviously based on the old joke about the monk who was expelled from the monastery for fiddling with the profit!

The cassette

At this point, I must say that although somewhat disappointed by the overall weight of the system, once permanently stationed on a table it seemed to be performing fairly well: documentation well written, consistent and clear, all facilities you can reasonably expect, low price, etc. First surprise: a 60minute microcassette set me back £2.50. As it is not recommended to store more than one spreadsheet on each side of a cassette, this works out several times more expensive than floppy disk storage (where a £3 disk can usually manage 1020 spreadsheets or more). Still we can buy a fair number of cassettes with money saved on the overall purchase price of the system! Anyway, having set up the Benchmark test, I got the system to do a `save' to cassette. Having done this sort of thing many times before, with other floppybased spreadsheet systems, I am used to just a few seconds pause for even the largest spreadsheet to get written to disk. In the event, Prophet I1 took 32 minutes to do the `save', spending the last two minutes on `borrowed time' and finishing just before the tape ran out! I gather that the system uses the standard Acorn Atom eassette tape protocol and appears to be able to save about a thousand characters of data a minute. Tape read and write speed being the same, the 'load' time is identical. Anyone contemplating using the system for medium to large spreadsheets (and applications can grow big very easily) had better be prepared to do loads and saves during his lunchhour.

Display and formatting

Having dealt with the only major problem so far, I moved on to check out the layout and formatting facilities: These proved to be very flexible. Columns can have individually differing widths ranging from zero (yes zero! — useful for 'hiding' intermediate workcolumns, etc) right up to 29, which fills the entire screen width.

Numbers can be formatted using normal decimal, integer or the scientific 'E' notation. Display within a column can either be left or right justified — this facility is particularly useful for correctly aligning text used for column headings, where, in contrast to row headings, right justification provides a neater display. Finally, Prophet II does not provide the 'splitscreen' facility seen on some spreadsheet systems —perhaps the Acorn Atom 16x32 character screen is too small to make this of any real value, but it does provide a useful alternative. The system maintains four different cursor positions (initially all identical), and it is possible to flip around each of them very rapidly. Once the cursor positions are at different points on the spreadsheet it is possible to effect a very rapid scan through four completely different (and quite probably very distant) parts of the tableau. These different positions are labelled, a little misleadingly, as 'Screen A', 'Screen B', etc. I prefer to think of them as 'positions', since they are in fact all on the same spreadsheet — my initial impression was that the system maintained four different spreadsheets.

Other facilities

Two other useful facilities: cell protection and titling. Cell protection prevents inadvertent modifications to a cell and the titling facility enables what would typically be the first column and top row to be kept continually onscreen, even when the cursor is miles away from the top left hand corner. As this is where you normally place your row and column headings, this provides a great deal of help finding your way round the spreadsheet (`Is is row 78 or 79 that has the sales figures?').

As the system was supplied without a printer, I did not have the opportunity to test printout facilities, but examining the manual suggests that everything is quite satisfactory in this department.

Really that just about covers everything in the system. There are some other special operations and functions which can be of use in special circumstances: a search facility, arithmetic comparison (`less than', etc), a conditional (IF(x,y, z) results in y if x is true, but z if it is false), and a fairly primitive facility for graphics. Basically a cell can be given the 'graphics' format, and this causes it to display a text character (which character depends on the value in the cell) instead of its value. As the Atom hardware provides a set of graphics characters it would be possible, eventually, to set up a bar graph, or some other fairly simple display.

Conclusion

It should be remembered that this system provides a fairly inexpensive way of obtaining a sound and reasonably wellpresented spreadsheet system. Most of the price 'savings arise from the fact that the system functions without the need for disk drives. Whilst this saves something on price, it does penalise the user in convenience, with up to half hour waits for saving the biggest spreadsheets onto the audiocassette. Spreadsheet purchasers on a very limited budget should give this system serious consideration, but should also take a close look at the competition — eg, the diskbased Osborne 1, or the new Epson HX20, to name but two inexpensive systems with spreadsheet facilities, both recently reviewed by *PCW*.

Checklist

Documentation: One manual of 67 pages, no index, no contents page, sparsely illustrated. Written as a tutorial with embedded reference material. Easy reference card affixed to case. Documentation generally clear, consistent and wellwritten.

Userfriendliness: System was easy to use. More helpprompts would be of value.

Errorhandling: Hardly any error messages, but the system handled all keyboard error conditions correctly.

Facilities: Extensive arithmetic, very primitive graphics, can handle spreadsheet overlays. Turnkey system. Can insert, delete and replicate rows and columns. Very flexible display facilities — no split screens but useful alternative. Can protect cells and do titling, edit formulae, switch between automatic and manual recalculations. Provides 'long jump' facility, and deals satisfactorily with 'out of memory'. Searching and logic also provided.

Benchmarks and other measurements:
Measurements: Up to 255 rows and 63 columns. Columns can be up to 29 characters wide. Screen dimensions are 16 rows x 32 columns. Numeric precision is 9 digits.
Benchmark I: (a) 87 rows; (b) 34 seconds; (c) 34 seconds; (d) 6 columns/second, 6 rows/second (21 columns/second, 64 rows/second using 10 cell at a time 'leapfrog' moves).
Benchmarks 3: 123 rows.
For an explanation of Benchmark timings see 'Which Spreadsheet' — *PCW* February 1983.

Supplier and price:
£795+VAT — includes all hardware (except printer), software, manuals. Busicomputers Ltd, Polebrook Hall, Peterborough PE8 5LN. Tel: Oundle (0832) 75052/73049.