A NEW BREED OF
KEYBOARDS

Has the qwerty keyboard had its day? Chris Drage outlines some of the alternatives on the scene

THE FACT that just about every micro sold has a qwerty or typewriter keyboard is really something of a historical accident. In the days of mechanical typewriters this rather illogical arrangement of keys was necessary to separate the most frequently used keys which, if placed together, tended to jam the mechanism, and this layout has persisted.

With computers finding a niche in both primary schools and the home the question arises: should we present young children with so many bizarre symbols and expect them to cope?

However, there is an increasing number of alternative keyboards available for the BBC micro, and so it's worth having a look at what three of them offer.

The Concept Keyboard from Star Microterminals, the Presfax 100 Keypad from Schofield and Sims and the Touchmaster from Touchmaster have one thing in common—they present the user with an array of touch-sensitive pads which may be programmed according to his or her needs. This feature opens the way to a vast range of applications. Each keypad uses overlays which are individual to a program. Thus, only the inputs essential to each piece of software are presented, in a form appropriate to the experience or ability of the user. In addition, overlays are not restricted to a two-dimensional format—elaborate 3D ones can be constructed involving, for example, a model farm, a park or a supermarket, and actual models can then be moved over the board. The variety of arrangements is endless. Once the unnecessary features of the normal keyboard are removed, life certainly becomes easier for the child.

Concept Keyboard

The Concept Keyboard has been available in its familiar A4 size for over a year now and, at the time of writing, A3/128 and A3/256 boards are available. A2/128 and A2/256 boards are to be launched soon. Each is constructed from a wipe-clean, scratch- and chemical-resistant polycarbonate surface, mounted in an aluminium case. The keyboard is linked to the Beeb via a 1100mm ribbon cable to the user port. In addition to the 128 or 256 pads there are a number of larger, specialised pads at the top of the board. These comprise a user pad, a repeat pad, a 'bleep' onloff pad and a shift pad (the latter on 128 boards only). Of these, the shift pad is probably the most significant as it allows the 128 cell models to produce 256 different signals. The bleep key provides a soft note to confirm the press of a keypad.

The 128 board has its 128 touch sensitive areas arranged in a 16 x 8 matrix while the 256 board uses a 16 x 16 array. Any key or group of keys can be assigned by the user to any character, word, numeral, shape, etc. The documentation describes routines and procedures to build into your programs to enable the Concept Keyboard to communicate with the computer. Anyone with some programming experience would find this a straightforward exercise. Remember, the program must have space and be listable.

PRODUCTS AND PRICES

	Concept Keyboard	Presfax 100 Keypad	Touchmaster
Dimensions	A4 Board 227 × 315 × 25.4mm (overlay 210 × 297mm) A3 Board 315 × 435 × 25.4mm (overlay 297 × 420mm)	360 × 360 × 3mm	350 × 330 × 30mm (Overlay 210 × 297mm)
Cable length	1100mm (user port)	1000mm (analogue port)	1500mm (RS423 port)
Peripherals		Perspex 100 square overlay + pegs (£9.50 + VAT)	
Price	A4/128: £90 + VAT A3/128: £114 + VAT A3/256: £156 + VAT	£79.50 + VAT	£149.99 inc VAT plus £4.99 inc VAT for BBC micro interface
Software supplied	Starset (disc)	Introductory user pack £5.50 + VAT (cassette) £8.50 + VAT (disc)	Multipaint (cassette)
Review copy obtained from	Star Microterminals, 22 Hyde Street, Winchester, Hants SO23 7DR	Schofield & Sims, Dogley Mill, Fenay Bridge, Huddersfield HD8 0NQ	Touchmaster, PO Box 3, Port Talbot, West Glamorgan SA13 1WH

I received a draft of the new manual, and its author has made this extremely detailed document readable and understandable to the inexperienced user.

I suspect many teachers will want to adapt existing programs for use with this keyboard. Star Microterminals are well aware that few teachers have the time or inclination to write their own software adaptations, so they have thoughtfully provided an excellent software package called *Starset* to take the hard work out of this.

All that you have to do is draw up the actual overlay (see picture). I found a piece of stout tracing paper is the only aid necessary.

The Concept Keyboard is a well designed and manufactured unit. Features like the keyboard's strength of construction, its reliability and its sensitive response over the entire matrix area all add up to what can only be described as an excellent product and a most valuable addition to a school's computer resources. With an increasing number of software houses now providing Concept Keyboard software, I unhesitatingly recommend this unit for primary and special schools.
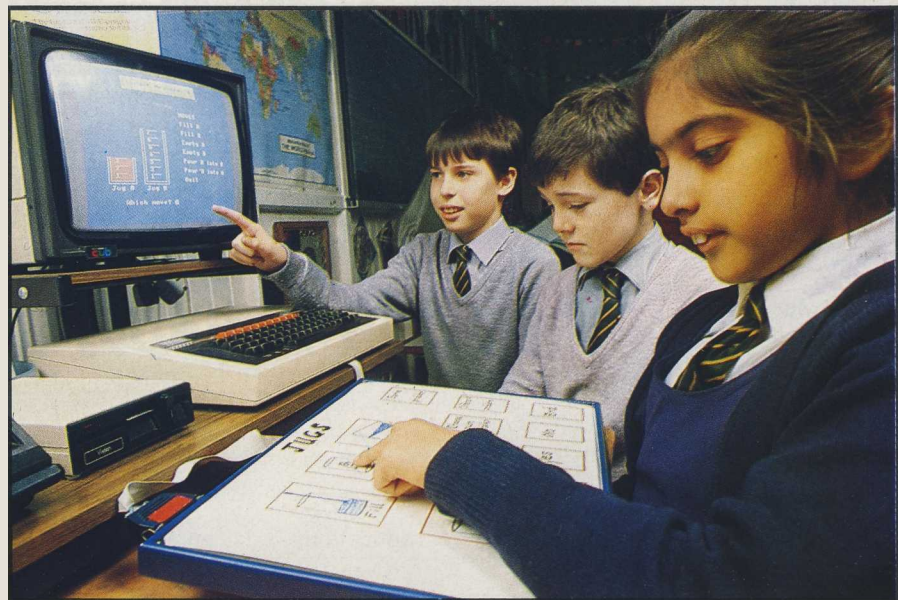
The Presfax 100 Keypad has 100 touch-sensitive squares arranged in a 10 x 10 matrix. It measures 360 x 360 x 3mm and, although this sounds rather on the thin and flimsy side, its 5-ply fibre base proved to be both strong and flexible.

Included in the package are the keypad, a handbook and a connecting lead. An introductory software pack (including four overlay sheets with locating pegs) is available on cassette at £5.50 or disc at £8.50. Included in the review sample was a clear perspex peg board with locating pegs and wooden counting pegs; this is available at an additional cost of £9.50.

Home-made overlays make the Concept Keyboard a versatile tool

The Junior Counting Board package in action on the Presfax 100

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Presfax 100

The Presfax 100 is connected via a 1000mm, 6-way ribbon cable to the analogue port on the BBC micro. Assembling and connecting up the system proved to be a very quick and easy process. Before the Presfax 100 can be used, however, it must be calibrated because each keypad generates slightly different signals. A program called *Calibrate* takes the grind out of this operation and in turn produces a file which may then be transferred to any disc containing Presfax software, the idea being to boot this program up from disc at the start of each session. For cassette users this is a rather tiresome task as it all takes valuable time. Once the driver file is in place you are ready to start.

A substantial software package is

available at an additional cost. It comprises *Actfax, Face fax, Sketch fax, Askfax* (on disc version only), *Getfax* (on disc version only), *Preskel* and *Junior Counting Board.*

For me the star of this package is the *Junior Counting Board.* This suite of seven programs enables children to explore number relationships through the medium of a 100-square peg board. The programs vary in difficulty from simple counting games to activities involving multiples and the discovery of prime numbers. As my class of 10year-olds had just embarked on a study of factors, products and multiples I thought this would be an excellent opportunity to introduce the less able of them to the *Junior Counting Board.* Using the perspex overlay and the coloured wooden pegs, it took even the weakest child no time at all to arrive at

the prime numbers using the Sieve Of Eratosthenes method. Much discussion took place concerning the patterns created by the multiples of various numbers, and the activity provided an excellent springboard for further work. I do, however, have a criticism of the level of the language in the programs, much of which is unnecessary anyway. I would have preferred to see an on-screen 100-square confirming the squares in use and a provision for teaching routines to help the child.

The 20-page handbook is well written and describes both setting up the Presfax 100 and the software in some detail. There is a useful section describing how to adapt the user's own programs with the help of the Preskel program.

Undoubtedly, the Presfax 100 will find a place in primary schools, and I'm certain Schofield and Sims will ensure

HOW THEY SCORE

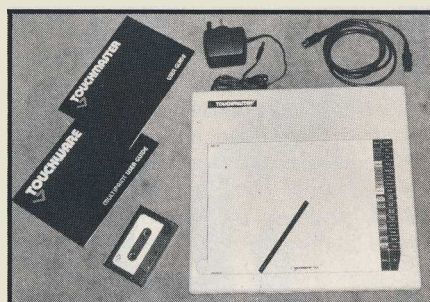| Touch Pad:	Concept Keyboard	Presfax 100	Touchmaster
Design	4	3	3
Construction	5	4	3
Strong enough for use in	schools, industry, laboratory	schools, home	home
Cable length	4	4	5
Handling characteristics	5	3	3
Ease of use	5	4	2
Software provided	4	4	3
Documentation	5	4	3
Range of applications	wide	education	entertainment
Value for money	4	4	2
KEY 5 *excellent*, 4 *good*, 3 *satisfactory*, 2 *poor*, 1 *very bad*.			

that software support is not thin on the ground. The first generation software provided with the keypad has promise of better things to come.

Touchmaster

The Touchmaster pad comprises a grey plastic case measuring 350 x 330 x 30mm with an A4 size, black plastic touch-sensitive membrane in the centre. Also included in the package are a mains transformer, connecting lead, graphics stylus, user guide and an applications program called *Multipaintplus* an overlay.

The Touchmaster has both parallel and serial ports for connection to various micros. The Beeb version uses the BBC micro's RS423 port (data transfer is at 9600 baud). Power is obtained from a remote 6v PSU. A power indicator LED is provided to remind the user that the unit is ready for use. There is no grid of touch-sensitive pads, but instead the whole 210 x 297mm area is pressure sensitive, giving 256 x 256 resolution and a total of 65,500 individual co-ordinates. In this configuration the Touchmaster seems to lend itself to graphics applications. Without having any other software provided for review, it was difficult to ascertain how areas may be defined for the multiple 'key' input necessary for young children.

The 11-page user guide is a model of brevity, and useful information is conspicuous by its absence. An eight-line Basic program is listed and this is supposed to demonstrate how the Touchmaster works with the computer. It enables the computer to read coordinates from the Touchmaster, scale and display them on the screen. No information or help is offered on how to adapt the user's programs to work with

Touchmaster: limited applications

KEYPAD HINTS

Here are some tips for readers considering buying a touch-sensitive keypad.

● Where possible cover all overlays in clear plastic laminate. You then only need to wipe the overlay with a damp cloth to remove grubby finger marks.

● Don't use sellotape to fix the overlay to the keypad. A bit of Blutak in each corner does a far better job.

● If you have an A4 Concept Keyboard and are thinking of purchasing an A3 model you may wish to convert your existing overlays to use with the larger model. Enlarging on a photocopier does not produce a correct A3 overlay. The only way to achieve this satisfactorily is to trace the A3 keypad and mark those pads which correspond to the A4 overlay. The tracing can then be transferred to a new (blank) overlay. Star Microterminals provides special transfer sheets for this purpose.

● As a safety precaution for the host micro, don't clip the connector to the Concept Keyboard socket. Should the keyboard be knocked to the floor (as happens in a busy classroom), then the plug simply pops out. The alternative can result in the micro also being pulled and possibly damaged.

the Touchmaster. No doubt experienced programmers could cope, but beginners are left high and dry.

The *Multipaint* program is included to demonstrate the Touchmaster's capabilities. It is a graphics package which enables simple pictures and designs to be created with the help of a plastic stylus. The overlay provides a menu from which a range of options may be chosen. This method of creating graphics is almost identical to that using a light pen, the only difference being that the Touchmaster replaces the screen. As my class are accustomed to using light pens in this way I decided to let them do the reviewing of this program.

All the expected features are included in *Multipaint*– free-hand drawing, lines, simple regular polygons, circles and points. Line-drawing is provided with a 'rubber-band' line to aid accurate fixing. In addition, there are five brush types and nine brush widths which, used in combination, provide some attractive effects. 'Blobs' and `free dots' also give rise to some interesting patterns. The fill routine is extremely fast. Screens may be saved and loaded with specified filenames. Not unexpectedly, the program uses mode 2 with its full complement of 16 colours.

However, as is often the case with first generation software of this type, here are a number of small bugs and not a few shortcomings. At times it is necessary for the children to exert a good deal of pressure to elicit a response from the Touchmaster. Several facilities are sadly missing from this package–erasure of an error immediately after its execution, and the ability to input text on the picture are essential elements in a serious graphics program. Also, there is no option to dump a screen to a printer. Overall, *Multipaint* is rather disappointing and does not live up to the claim that it has 'many serious applications'.

With the software presently available, it's difficult to see how the Touchmaster could be used in a productive way. At £150 it appears overpriced and limited compared with the other keypads reviewed. Perhaps when more software appears on the scene the range of applications may increase and make it a more viable proposition. However, I am still not convinced that the Touchmaster represents value for money.

At the moment the software support for the Presfax 100 and Touchmaster is thin on the ground but there are some very good educational software packages available for the Concept Keyboard. I'll look at some of this software in the next issue.

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