

● **MALTRON KEYBOARD**  
PC AND OTHERS • £339  
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Over the past 30 or so years computers have revolutionised society. The machines themselves have undergone enormous transformations, particularly in size: the desktop computer has been with us for many years; the portable computer is a reality; and the pocket computer is knocking at the door. The main obstacle to be overcome now is not technology, but cost. However, one feature of the computer has changed but little – the keyboard. In fact, the 'QWERTY' board is essentially the same now as when it was invented by Scholes in 1872.

The QWERTY layout works and, for most people, works well, though it does have two significant drawbacks: it is not designed for optimum efficiency and, more seriously for professionals, it carries the risk of repetitive strain injury.

**WHY QWERTY?**

The QWERTY layout was designed specifically to overcome the mechanical limitations of 19th Century technology. If two letters were struck in quick succession, the type bars jammed. To overcome this it was necessary to spread the commonly-used letters around so that a slight delay allowed the withdrawal of the previously struck key.

As 'e' is easily the most frequently used letter of the alphabet it should, in a logical keyboard, be a home key. On the standard keyboard, however, it is pushed up to the top row and only three of the ten most used letters are located under the rest position of the fingers. These keyboards, together with visual displays, have highlighted another problem – operator stress, known generally as repetitive strain injury (RSI).

**WHAT IS RSI?**

Repetitive strain injury is caused by the over-use of certain muscle groups and, far from being confined to keyboard operators, manifests itself in many different professions. Tennis elbow and writer's cramp are two well-known examples.

For keyboard users the problem arises because of the unnatural stretching involved in the operation of the standard keyboard.

Stand up straight and relax your arms; you will notice fingers curl inwards slightly. This is the natural rest position of the human hand, so a keyboard designed to fit this would, in theory, eliminate repetitive strain injury completely.

The first person to recognise this appears to have been Lillian Malt, a skills analyst who has trained thousands of keyboard operators over the past 25 years. When she first approached 'the electronics boys' (as she calls them) she was rebuffed with a 'can't be done'



• The Maltron Ergonomic Keyboard. It plugs straight in to the PC and gives a 20 per cent increase in speed.

# A NEW KIND OF KEYBOARD

Abandoning the archaic QWERTY keyboard can improve your typing speed and help prevent crippling repetitive strain injury...

response. In 1976 she met Stephen Hobday, whom she describes as an electronics wizard. Hobday shrugged off his contemporaries' defeatist attitude and produced a keyboard designed to her specifications.

**MALTRON DESIGN**

The Maltron Ergonomic Keyboard was layout follows the contours of the resting hand and makes allowance for the fact that our fingers are different lengths. The wrists can be held quite straight, palm resting pads in front of each finger group allow the operator to pause without losing position, and the centrally located numbers are easily accessible to suit both right- and left-handed operators. The keyboard facilitates greater accuracy because, as Lillian Malt points out, it is easy to tell where your fingers are, because of the feel.

The keyboard design is the result of an analysis done at Brown University in Rhode Island, USA. A million words were fed through a computer to determine the frequency of letters, and of two- and three-letter sequences. The improved layout also increased operator speed. On a standard keyboard one operator in 200 will be able to achieve 120 words per minute; using Maltron a staggering 30 per cent of all operators can reach this speed.

Old habits die hard, so the current Maltron key-

board (Mk IV) is colour-coded and can be used as a QWERTY model. On average it takes less than a day to re-train a QWERTY operator on the Maltron keyboard, but some people can get used to it in half an hour. A 20 per cent increase in speed is frequently achieved. Obviously, it takes longer to learn the new layout, but Lillian Malt claims that Maltron can be mastered in a third of the time it takes to learn QWERTY.

A number of specialist keyboards for disabled people are also available. Madelaine Davenport, a Grantham woman who was born without a left hand, boosted her 40 words per minute to 70 when she changed over.

**COLD SHOULDERED**

Only some 300 individuals and companies world-wide have gone over to it, in spite of its being compatible with IBM, BBC, Apple, Wordplex and other models. Because of this small scale production the prices are quite high. The average keyboard sells for £339.

Though they would undoubtedly welcome commercial success, Lillian Malt and the Hobdays are motivated by more altruistic motives. Of RSI Stephen Hobday says: "I am totally appalled at the damage it does cause to women who really get RSI badly – it's appalling to see the crippled state they get into." ■



• The one-handed keyboard: a boon to disabled users.