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Just the Facts...

Non-Keyboard Input Devices

With all the input devices available today, you may find it difficult to determine which one is best for you to use to enter data into your personal computer. This fact sheet describes three input devices--the mouse, the trackball, and the touch pad--and offers guidance in the selection and use of the devices.

Choosing a Design

The *mouse* is now present in virtually every office environment because of the predominance of graphical user interface (interface consisting of icons). Depending on the task performed and the software used, the computer mouse can account for up to two-thirds of computer operation time. Word processing applications require a mouse or other device one-third of the time, while graphics applications require a mouse two-thirds of the time.

The *trackball* is sometimes called an upside-down mouse. While a mouse employs a rolling ball on its underside, a trackball uses an exposed ball that the worker manipulates with his or her fingers. Unlike a mouse, a trackball does not require a horizontal pad on which to move. Trackballs are a good choice for those with limited desk space, large monitors or poor gripping ability.

The *touch pad* is an appealing input device because users can point directly at an object, and users require little or no training. Also, touch pads are faster than other pointing devices, and no extra work surface is needed. Touch pads, however, are not recommended for those with symptoms of upper extremity cumulative trauma disorders as the hand is not supported, and the user may have to hold the wrist in awkward positions to use the device.

Position

Many keyboard trays leave too little room for the input device. The best position for the device is close to the body and within easy reach, preferably next to the keyboard. Rearrange your workstation so that the keyboard and the input device are on the same plane. The keyboard and device may be housed together on an adjustable work surface, on a large adjustable tray, or each may be placed on a separate adjustable tray.

Due to their length, the large trays may bounce as the user types. As an alternative to large or additional trays, or for those with limited under-desk space, some adjustable trays have a retractable mouse tray that can be stored beneath the keyboard tray until needed. Choose a tray that allows you to position the mouse on either side of the keyboard. With the tray shown, the user can push the mouse tray to the right for right-handed use, to the left for left-handed use, or store it under the keyboard portion of the tray.

Consider using a mouse bridge as a means of placing the mouse on the keyboard. A mouse bridge, also called a mouse stage or stand, is a removable piece of plastic that covers a portion of the keyboard (usually the number pad on the right side of the keyboard) and provides an accessible stand for the mouse. These stands are designed to fit over straight (not bent) keyboards.

Some computing tasks require extended use or very precise actions with a mouse or trackball. Maintain a neutral wrist and good posture without tensing the muscles in the arms, fingers, neck, or back. Keep the elbows relaxed at the side of the body. One approach to improved support for the hand and forearm is the use of a chair with extended, height-adjustable armrests.

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Other Considerations

Lately there has been a proliferation of different input devices designed to fit more naturally into the user's hand. Mice are available in “small, medium, and large” sizes to accommodate a variety of hand sizes. A good pointing device should not require a lot of force to activate and should be designed so as to create as little stress as possible to your body.

Most devices are designed for use on a work surface, but some can be operated in conjunction with a foot clicker. Others are designed for use on a vertical surface like the infrared pointing device. Voice-recognition software is still relatively new, but promises to become more common as advances are made in microprocessor speed, which in large part determines the accuracy of continuous-speech recognition. As technology improves, so does the chance that someday we will see an office full of workers talking to their computers.

For more information, see the following websites:

USACHPPM Ergonomics Program--
<http://chppm-www.apgea.army.mil/ergopgm/ergohome.htm>

Department of Defense Working Group on Ergonomics--
<http://chppm-www.apgea.army.mil/ergowg/index.htm>