Your Computer Workstation Should Include the Right Input Device for You

FACT SHEET 88-014-0311

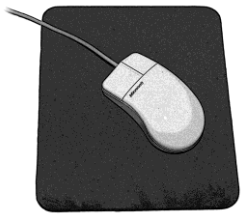
Choose your input device. The mouse and trackball are the most popular input device besides the keyboard. Knowing general information on these devices can aid in your quest for safe computing.

General Placement Guidelines for Input Devices

Consider the following:

- The device should be placed close to the keyboard, preferably along side the keyboard and the same distance away from the user as the keyboard.
- The desk or keyboard tray surface should be wide enough to accommodate both the keyboard and mouse or a mouse pad for the mouse. If not, consider purchasing a mouse tray.
- The input device should not interfere with the armrest on the chair.
- If a keyboard tray is used, be sure to account for thigh and lower leg clearance in height and width.
- The input device should accommodate both right and left hand dominant users.

Mouse



The mouse is designed to fit the contours of your hand. A keyboard is used with a mouse, so you should position the mouse as close to your body as the keyboard is, and within easy reach. The mouse and keyboard should be housed together on an adjustable work surface, on a large adjustable tray, or on separate adjustable trays. The work surface must be stable; if the mouse is used on a keyboard tray, the tray should not wobble or tip. Also, when a keyboard and mouse are placed on the same tray, an angled tray works best for keyboarding, but a mouse is used most effectively on a flat surface.

- Optical mouses are preferred as their design eliminates the need for periodic cleaning that the rollerball mouses require.
- Mouses come in different sizes and left or right handed to best suit your hand.
- Wireless and optical mouses can also give you more versatility in where/how you use your mouse.
- A mouse pad that allows for easy movement of the mouse should be used.

Trackball

The trackball—sometimes called an upside-down mouse—has an exposed ball that you manipulate with your fingers. The trackball uses different muscle and tendon groups and can add variety to your input tasks. Avoid trackballs that use the thumb to roll the ball—they may cause discomfort and possible injury to the area around your thumb. Unlike a mouse, you don't have to use a trackball on a mouse pad; like a mouse, it is best positioned close to your body and possibly at an angle. It is a good idea to alternate fingers and even use your palm while using a trackball. The trackball should be sized for your hand.

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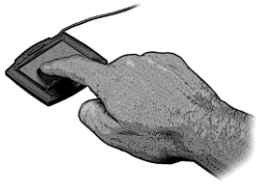
The mouse and trackball are the most popularly used input devices besides the keyboard, but there are many other options to aid individuals in completing their computing tasks. Knowing general information on these devices can aid in your quest for safe computing.

Other Input Devices

There are other input devices you may use instead of a mouse or trackball. Choose a device based on the requirements of your task and your physical abilities and comfort. Just remember, placing your input device too far away, too low, or too much on one side can cause shoulder, wrist, elbow, and forearm discomfort. Place your device in your immediate reach zone for natural comfort and maximum hand-to-eye coordination. A new input device can have a learning curve, so be patient and give yourself time to learn. You may want to try using a new input device for increasing amounts of time.



Touch pads allow you to move the cursor on the computer screen by simply gliding your finger across a small pad. Unlike a mouse, trackball, and other pointing devices, touch pads have no moving parts to clog or break, so they never require disassembly for cleaning. A touch pad can be used with any finger and even held in one hand and brought close to the body.

Touch screens allow you to point directly at an object. They require little or no training, are faster than other pointing devices, and require no extra work surface. However, the disadvantages of touch screens include arm fatigue, smudges, optical interference, and increased glare.

Voice input allows you to "talk" to your computer. Currently, programs can understand and respond to natural speech delivered at rates of up to 160 words per minute. Some throat problems, such as soreness and dryness, may occur when using your voice as the input device. Voice activated software requires training the device to recognize your voice and vocabulary. Voice input may be affected by environmental noise (people and machines) and may reveal private information to people in the area.

Pen-like devices allow you to "type" through contact with the computer screen or a palm pad. A palm pad (PDA) uses about as much room on the work surface as a mouse. Like computer screens, palm pads require nonglare lighting.

A **gesture glove** is worn on your hand and responds to hand and arm motions. A glove is most useful for high-tech applications, such as sophisticated engineering projects, where it might be used to turn the page in a 3-D landscape.

Handwriting recognition programs are available but they are still primitive, with error rates of up to 10%.

If multiple surfaces are used, consider the following issues:

- The input device should not interfere with the armrest on the chair.
- If a keyboard tray is used, be sure to account for thigh and lower leg clearance in height and width.
- The input device surface should be wide enough to accommodate both the keyboard and mouse or a mouse pad for the mouse.
- The input device should accommodate both right and left hand dominate users.

For information on input devices for the impaired, go to: www.tricare.osd.mil/cap/