OPERATOR'S MANUAL

for the

T-TAM™

(Trace-Transparent Access Module
for Apple® and IBM® Computers)

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Appendix-A

Introduction to the T-TAM

What Is a T-TAM

T-TAM stands for Trace Transparent Access Module. The T-TAM has two main functions. First, it links a communication aid such as the Prentke Romich Company's Touch Talker, Light Talker, AlphaTalker, AlphaTalker II, DeltaTalker, or Liberator to a computer and lets the communication aid become a substitute for the computer's keyboard and mouse. Second, it lets you adjust the response of the computer's keyboard so that a person can use a single finger or a head stick to type.

Overview of T-TAM Functions

I. The T-TAM links a communication aid such as the Liberator, DeltaTalker, AlphaTalker, Touch Talker or Light Talker to a personal computer. This link allows the communication aid to serve as the computer's keyboard and mouse. The T-TAM lets the person using the communication aid send serial data in the form of words, letters, punctuation and special computer commands to the computer. In this way, the person can use a communication aid to perform computer keyboard and mouse operations.

II. The T-TAM also changes the behavior of the computer's keyboard so that it can be used by people with mild-to-moderate disabilities.

•The T-TAM lets you change the operation of modifier keys such as SHIFT, CONTROL and ALT, so that you don't have to hold them down while striking another key. This feature lets people who type with one finger, a mouthstick or a headstick enter key combinations easily.

•The T-TAM can also slow down the response of the computer's keyboard so that keys that are pressed by mistake will not be sent to the computer.

•The key repeat rate can be adjusted or turned off to avoid entry of unwanted keystrokes by slower typists.

•The T-TAM emits tones (beeps) when the CAPS LOCK, NUM LOCK and SCROLL LOCK keys are pressed so people who can't see the lights on the keyboard will know if these keys are turned On or Off.

•Finally, some people are able to use the keyboard, but have difficulty handling a mouse. With the T-TAM, the number pad on the keyboard can be used for mouse cursor movements and mouse button operations. The individual presses a key on the number pad of the keyboard and the computer responds by moving the mouse cursor.

➲Note:

The T-TAM works with any software that uses the regular keyboard and mouse. The computer's keyboard and mouse can still be used by people without special needs.

Suggested Background Skills

This manual assumes that you are familiar with the normal operations required to run your personal computer. You should also be familiar with the operation of the software programs you are planning to use. You should understand mouse operations if your computer and software require the use of a mouse. You should understand keyboard operations including SHIFT, COMMAND, OPTION, ALT and FUNCTION keys.

If you plan to use a communication aid with your computer, you should also be familiar with its operation and its vocabulary management system (Minspeak). You should know how to store and retrieve messages and use one icon or icon themes in your communication aid.

If you need additional information on the operation of your computer, refer to your computer's operational manual. If you need additional information on your communication aid, refer to its operational manual.

The T-TAM Works with These Computers:

The T-TAM **works** with the Apple IIGS and all Macintosh computers using the Apple Desktop Bus (ADB™) for mouse and keyboard connections. This includes the following models:

Apple IIGS™	Macintosh Classic®(all)
Macintosh LC™ (all)	Macintosh SE™ and Macintosh II™ (all)
Macintosh Powerbook™	Macintosh Centris™
Macintosh Quadra™ (all)	

The T-TAM **will not work** with the following Apple and Macintosh Computers:

Mac Plus™	Mac 512™
Mac 128™	Apple IIe™
Apple II+™	

The T-TAM **works** with the IBM PS/2™ and all newer IBM computers that use a PS/2 mouse. The T-TAM also works with some IBM compatibles, but they **must use** the IBM standard keyboard configuration. The T-TAM works with the following models of IBM's:

IBM PS/2	IBM 386™
IBM 486™	

The T-TAM **does not work** with the following IBM or compatible computers:

Original IBM PC™
IBM XT™
IBM clones or compatibles that do not follow the IBM standard keyboard configuration

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⮨**Note**:

The T-TAM **may work** with IBM computers that do not have a PS/2 mouse port, including IBM AT's and some AT compatibles. However, computers that don't have a standard PS/2 mouse port won't support mouse emulation through the T-TAM.

Overview of Steps Required for Using the T-TAM

If you want to use the T-TAM to adjust features of the computer's keyboard, you need to:

•Connect the T-TAM to your personal computer, pages 11-18.

•Learn how to set and activate the keyboard adjustment features, pages 71-80.

If you want to use your communication aid to operate a personal computer, you need to:

•See if your communication aid has the features necessary to be linked through a T-TAM to a personal computer. PRC's AlphaTalker, DeltaTalker, Touch Talker, Light Talker and Liberator all contain these features. If you have a communication aid different from the ones mentioned, see page 87.

•Connect your communication aid to the T-TAM and the T-TAM to your personal computer, pages 11-18

•Learn how to program the special computer commands into your communication aid that let you use it in place of the computer's keyboard and mouse, pages 71-80.

➲**Note:**

Special software is available for the Liberator and DeltaTalker that provides you with a complete set of computer commands and mouse cursor commands. This product is called MIKE™. Please contact our Sales Office for more information about this product.

To change baud,
slide switch from
300 to 1200.

300○ ▮ ○1200

○○○○○○○○○○○○○
○○○○○○○○○○○○○

RS 232 Serial
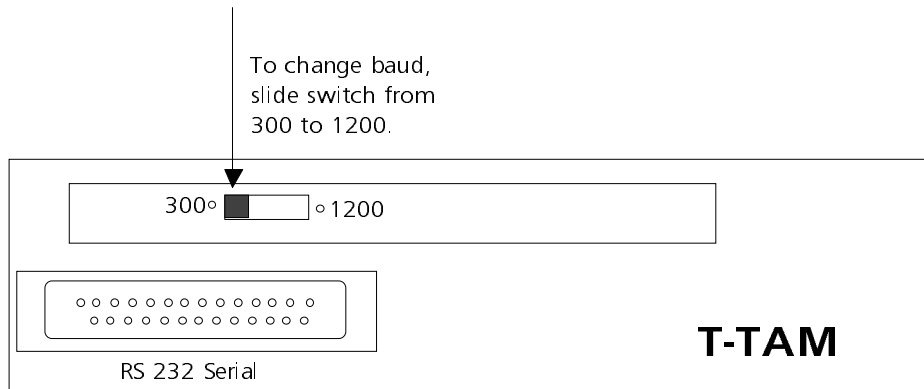
T-TAM

To Set the T-TAM's Baud Rate

The baud rate switch is on the back of the T-TAM unit, above the 25 pin connector.

Make sure the computer is Off.
Move the slide switch to the right for 1200 baud or to the left for 300 baud.

The T-TAM baud rate and the baud rate of your communication device *must be the same*.

Find the section in this manual that refers to your communication aid to learn how to set its baud rate.

Connecting the T-TAM

On the following pages, there are instructions for connecting the T-TAM to different types of computers. Read the headings to find the section that discusses your type of computer and intended use for the T-TAM.

     I. Apple IIGS or Macintosh computer and a PRC communication aid.

    II. Apple IIGS or Macintosh computer to enhance the computer's keyboard.

    III. IBM, PS/2, or AT computers and a PRC communication aid.
         OR IBM, PS/2, or AT computers to enhance the computer's keyboard.

I. **Using the T-TAM to Link an AlphaTalker I or II, DeltaTalker, Touch Talker, Light Talker or Liberator and an Apple IIGS or Macintosh Computer**

Follow the steps below to connect the T-TAM to a communication aid and a computer. (The **left** side of the back panel of the T-TAM is designated for Apple and Macintosh computers.)

1. Turn your computer and your communication aid Off.

2. Select the ADB cable that comes with the T-TAM. (The plugs on each end of the cable have one flat side, while the rest is rounded.) The plugs may also have this icon:

3. Plug one end of the ADB cable that came with the T-TAM into the T-TAM socket with the computer icon above it (pictured below).
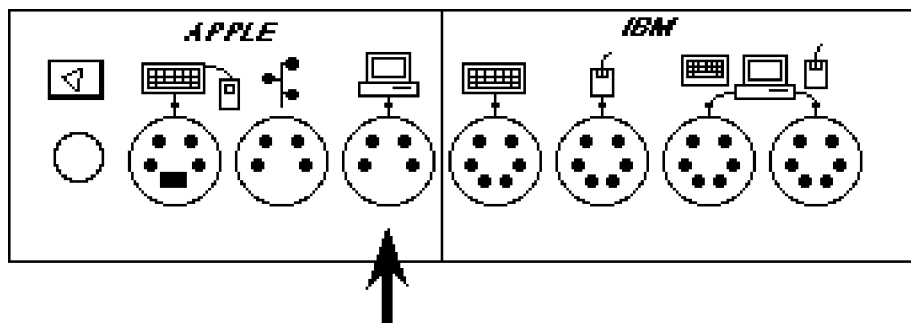
4. Disconnect the mouse cable from the keyboard and plug the other end of the ADB cable into the keyboard where your mouse was plugged in previously. Your keyboard should remain plugged into the computer as usual.

5. Plug the mouse into the back of the T-TAM at the keyboard mouse icon (pictured below).
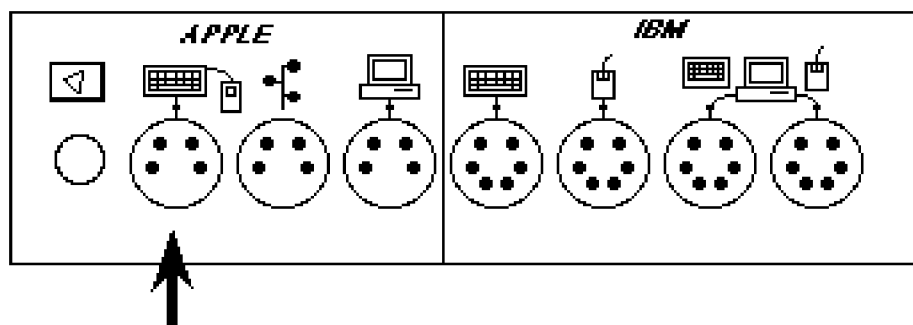
6. On **TT/LT,** connect one end of the RSC cable to Port B and the other end to the front of the T-TAM.

    On **Liberator**, connect the small round end of the RSC-1L cable to the RS-232 port on the left lower corner of the left side panel on the Liberator and the other end to the front of the T-TAM.

    On **AlphaTalker, AlphaTalker II or DeltaTalker,** connect the small round end of the RSC-1L cable to the port labeled RS-232 on the back of the device. Connect the other end of the cable to the front of the T-TAM.

The following diagram shows the position of your equipment when it has been connected correctly.
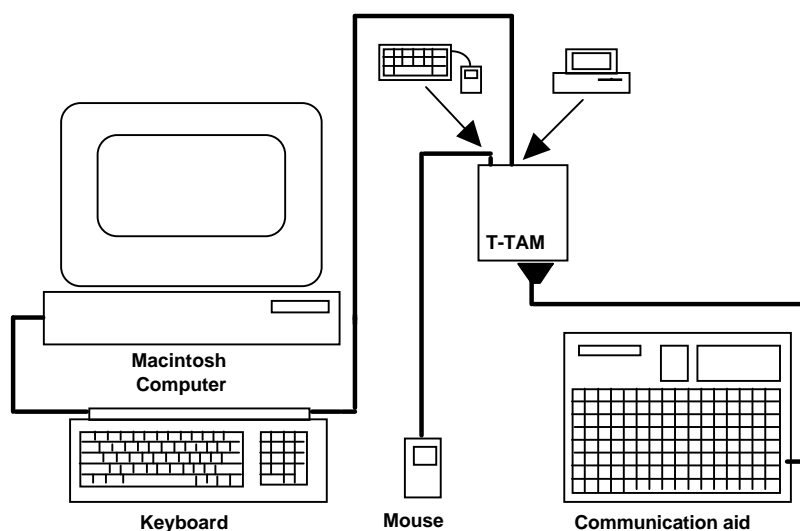
7. The T-TAM is connected. Turn to either of the following sections for information on setting up your communication aid to access a computer:

- USING A TOUCH TALKER OR LIGHT TALKER WITH THE T-TAM : page 19
- USING THE LIBERATOR WITH THE T-TAM: page 33
- USING A DELTATALKER WITH THE T-TAM: page 45
- USING AN ALPHATALKER or ALPHATALKER II WITH THE T-TAM : page 59

II. Using the T-TAM for the Keyboard Adjustment Features With the Apple IIGS or Macintosh Computer

Follow the steps below to connect the T-TAM to your computer. (The **left** side of the back panel of the T-TAM is designated for Apple and Macintosh computers.)

1. Make sure the computer is turned OFF.

2. Unplug your keyboard cable from the side of your keyboard and plug it into the back of the T-TAM in the socket marked with a computer icon. (pictured below).
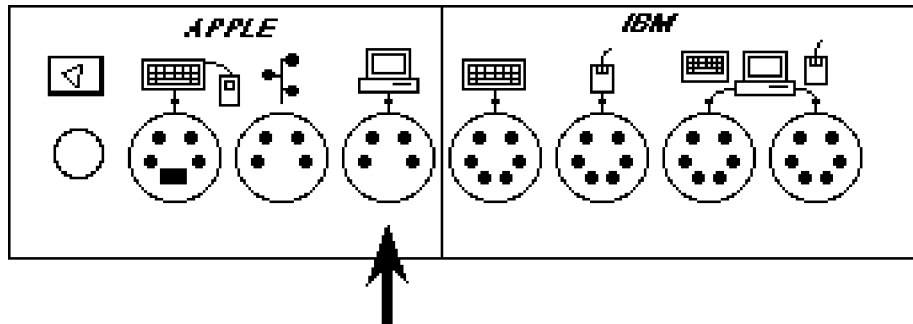
3. Select the ADB cable that comes with the T-TAM. (The plugs on each end of the cable have one flat side, while the rest is rounded.) The plugs may also have this icon:
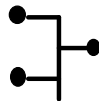
4. Plug one end of the ADB cable into the side of your keyboard and the other end in to the back of the T-TAM socket marked with a keyboard icon (pictured below).
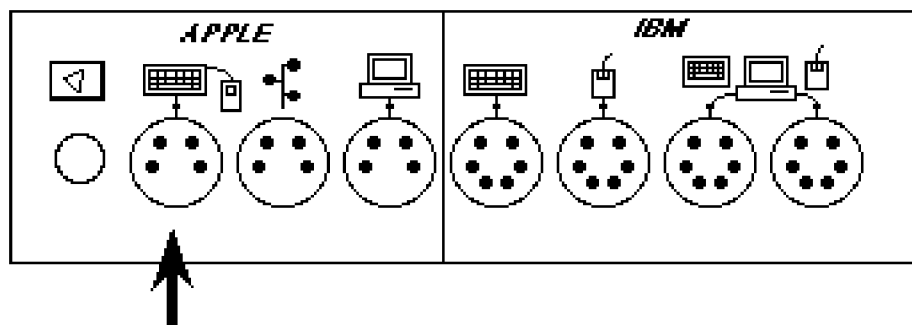
5. Plug the mouse into one of the ADB ports on your keyboard if it was not already plugged in.

6. Some Macintosh computers (the Mac II family) allow you to turn on the computer using a key on the keyboard. The T-TAM lets you do this, too. Plug a single switch into the connector on the T-TAM with the icon of a switch above it (pictured below). The connector accepts a standard miniature plug.
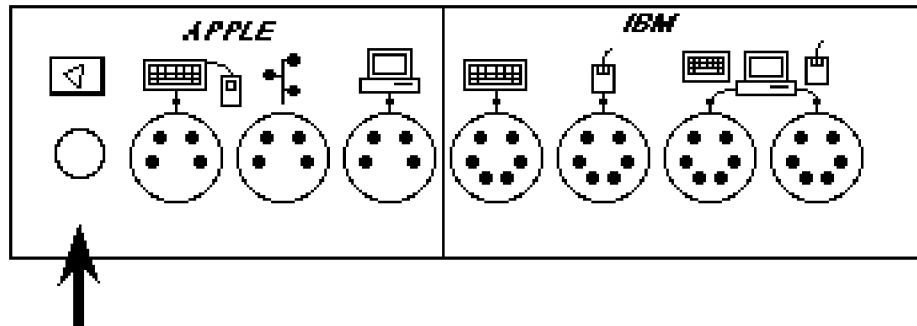
7. The T-TAM is connected. The T-TAM should be positioned between your computer and the keyboard as shown in the diagram below.
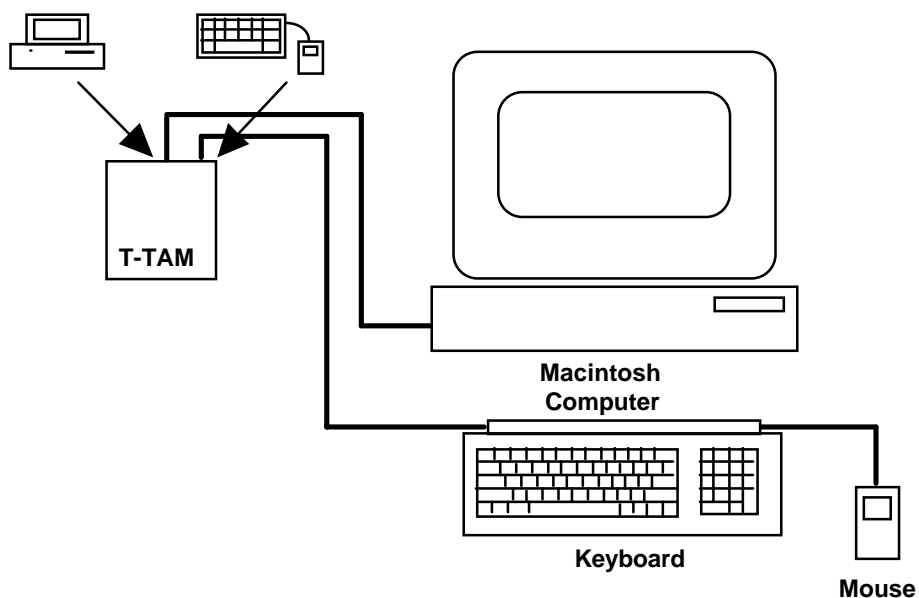
Turn to the section **USING THE T-TAM TO ADJUST FEATURES ON THE COMPUTER KEYBOARD**, page 71, to learn more about these features.

III. Using the T-TAM to Adjust the Keyboard Functions of the IBM or PS/2 Computer

Using the T-TAM to Link an AlphaTalker, DeltaTalker, Touch Talker, Light Talker or Liberator to an IBM Computer

These instructions refer to the connections on the IBM portion (**right** side) of the back panel of the T-TAM and assume that your keyboard and mouse are connected properly to your computer.

1. Turn the computer OFF.

2. Disconnect the keyboard cable from the computer and plug it into the T-TAM socket marked with the keyboard symbol (pictured below).

   If your computer uses the larger 5-pin heads on its cables, you must remove the short cable adapters from the T-TAM cables and plug them into the ends of your keyboard and mouse cables. Otherwise, leave them connected to the long T-TAM cables.
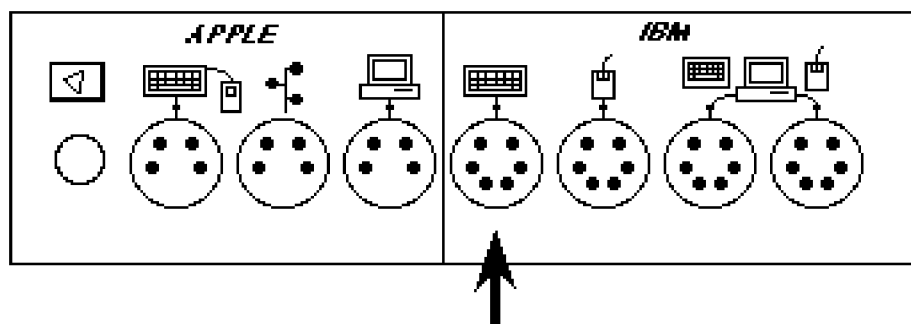
3. Now take one of the two T-TAM computer cables and plug one end into the T-TAM socket marked with the computer-keyboard symbol (pictured below). Plug the other end into your computer where the keyboard was plugged in.
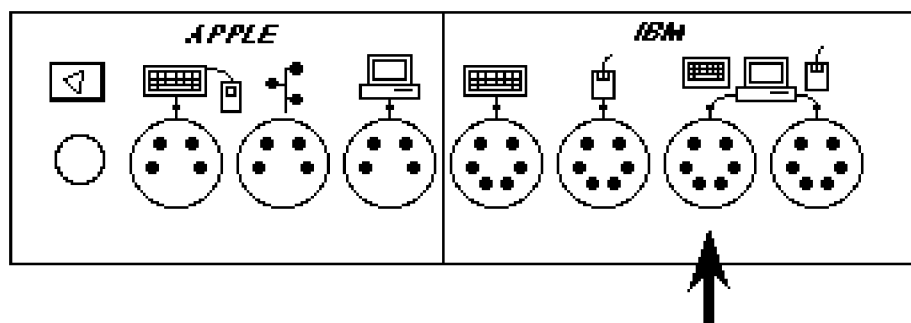
4. Disconnect the mouse cable from the computer. Plug the mouse into the T-TAM socket marked with the mouse symbol (pictured below).
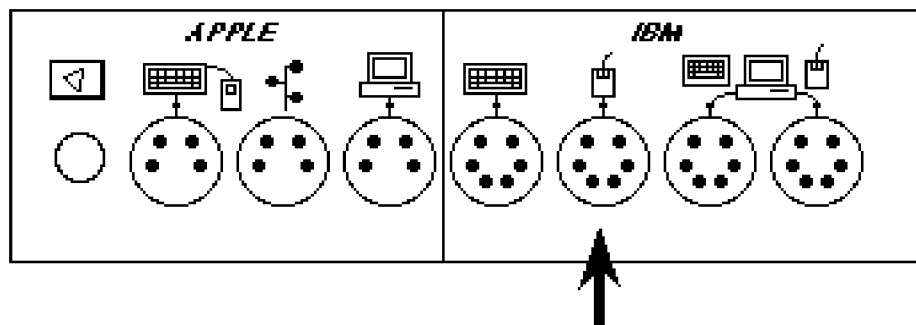
5. Use the other cable provided with the T-TAM and plug one end into the back of the computer where the mouse was. Plug the other end into the back of the T-TAM in the socket marked with the computer-mouse symbol (pictured below).
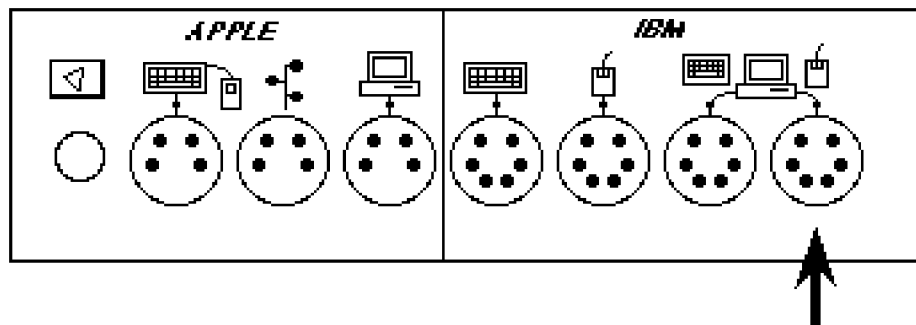
6. *If you are using a communication aid, complete this step.*

On **TT/LT** to the T-TAM, plug one end of an RSC cable into Port B on your TT/LT and the other end into the front of the T-TAM.

On **Liberator,** plug the small round end of the RSC-1L cable into the RS-232 port on the lower left corner of the left side panel of the Liberator and the other end to the front of your T-TAM.

On **AlphaTalker, AlphaTalker II or DeltaTalker,** connect the small round end of the RSC-1L cable to the port labeled RS-232 on the back of the device. Connect the other end of the cable to the front of the T-TAM.

7. The T-TAM is now connected. If you are using the T-TAM to link an AlphaTalker, AlphaTalker II, DeltaTalker, Touch Talker, Light Talker or Liberator and an IBM or PS/2 computer, refer to Diagram 1. If you will be using the T-TAM with an IBM or PS/2 computer to enhance the computer's keyboard, refer to Diagram 2.

to computer
PS/2 mouse
port

to computer
keyboard
port

PS/2 mouse

to standard
keyboard

IBM
Computer

T-TAM

Communication
aid

PS/2
Mouse

Standard
Keyboard

Diagram 1

to computer
PS/2 mouse
port

to computer
keyboard
port

PS/2 mouse

to standard
keyboard

T-TAM

**IBM
Computer**

**Standard
Keyboard**

**PS/2
Mouse**
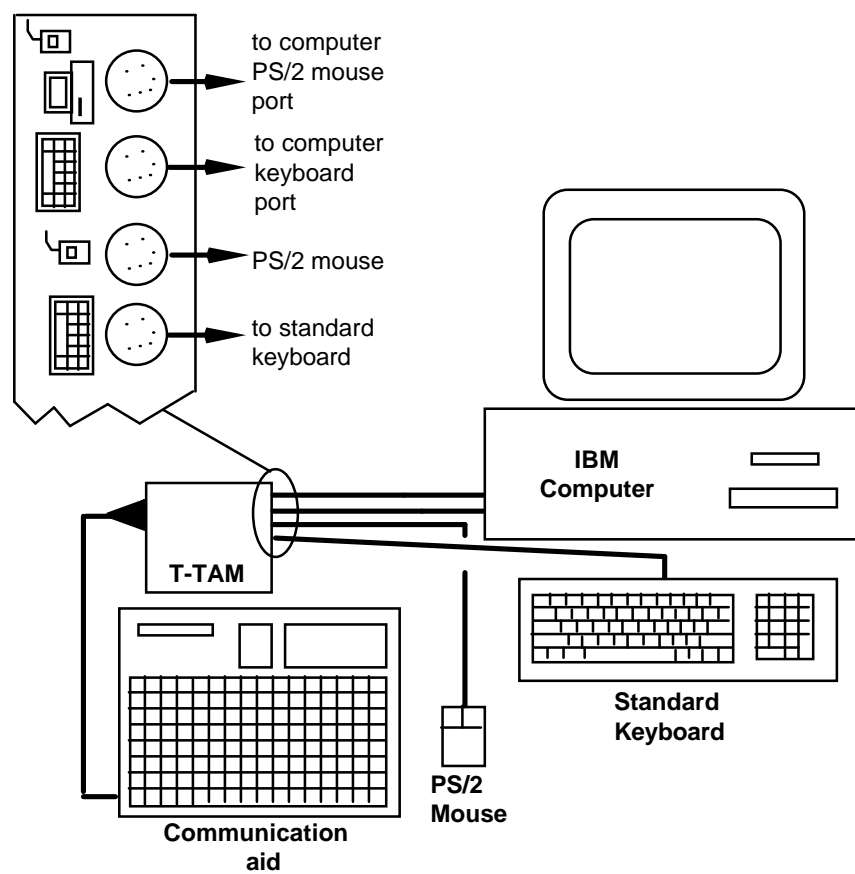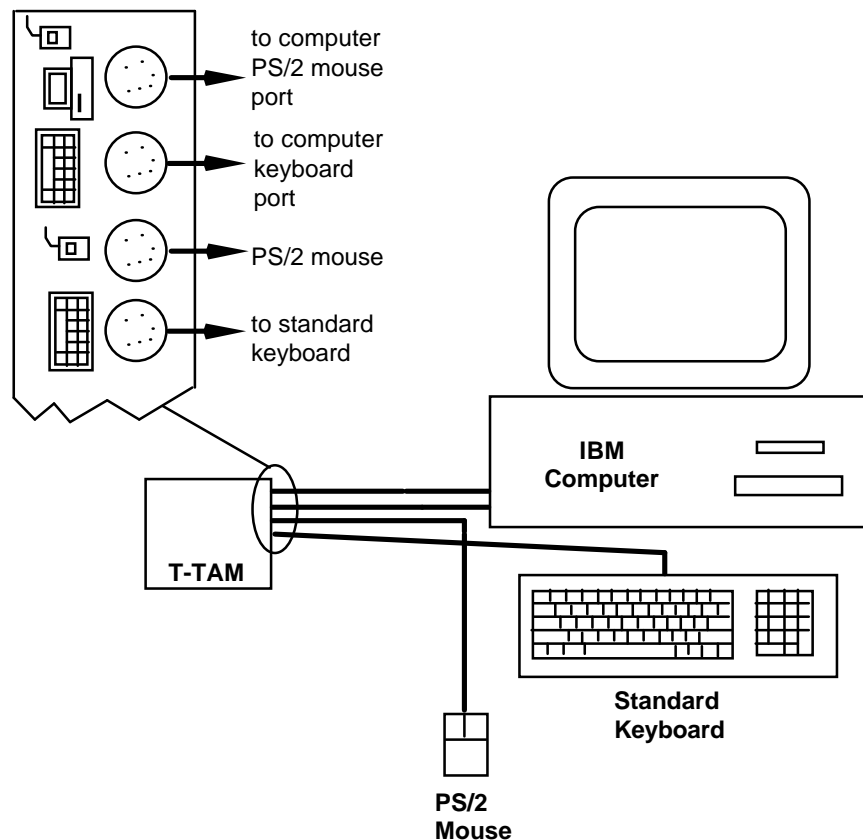
Diagram 2

If you are using the T-TAM to link the IBM computer and a communication aid, turn to one of these sections for more information about setting your aid up for computer access:

- USING A TOUCH TALKER OR LIGHT TALKER WITH THE T-TAM : page 19
- USING THE LIBERATOR WITH THE T-TAM: page 33
- USING A DELTATALKER WITH THE T-TAM: page 45
- USING AN ALPHATALKER or ALPHATALKER II WITH THE T-TAM: Page 59

If you are using the T-TAM with an IBM computer to enhance the computer's keyboard functions, turn to the section:

- USING THE T-TAM TO ADJUST FEATURES ON THE COMPUTER KEYBOARD: page 71

Using a Touch Talker or Light Talker With the T-TAM

Before using your communication aid to access a personal computer, you should consider the following:

•Be familiar with the operation of your TT/LT and its vocabulary management system (Minspeak). Understand the purpose and use of your fixed and custom overlays. Be familiar with the process of storing vocabulary in your device and understand the concept of a one icon theme.

•Be familiar with the operation of your personal computer and the software that you plan to use. Know which special computer functions you want to perform from your communication aid.

Getting Started

Make sure that all your cable connections are correct and that your TT/LT and computer are working correctly.

> ➲**Note:**
>
> Your Touch Talker or Light Talker should already be connected to your T-TAM and computer. **If it is not connected**, please refer to page 11-18 for instructions to do this.

Step 1: Turn On Your Computer

Turn on your computer. You should hear a short beep lasting about 1 second from the T-TAM. This indicates that the T-TAM is on and working properly. If you don' t hear a beep or if the beep lasts longer than 1 second, the T-TAM may not be working correctly. Turn off your computer, double check your connections and restart your computer.

Step 2: Open a File

If you hear a beep and the computer seems to be working properly, open a word processing document or a file that you can type text into on your computer.

> ➲**Note:**
>
> Your computer keyboard functions normally when the T-TAM is connected.

**Step 3: Turn On Your Communication Aid, Determine the Operating System and Open
The Serial Port**

1. Place your fixed overlay on top of the keyguard and secure it with the top two pins. Turn your TT/LT on in fixed overlay by pressing location **I-1** while you press the **On** button. The display on your device should contain the letters **L** and **F** in the lower right hand corner.

2. Identify the operating system in your TT/LT. If the cursor on the screen of your device is a solid black triangle, you have EMOS (Enhanced Minspeak Operating System). If the cursor is a short line, you have TMOS (Traditional Minspeak Operating System).

3. If you have TMOS, activate location **I-6** until your display reads **Serial Buffer Off.**

4. If you have EMOS, activate location **I-6.** Your display reads **Top=Printer Bottom=Computer Access.** Activate location **I-6** again (or any other key on the bottom half of the device) to accept **Computer Access**. Your display then reads **Computer Set.**

5. Now activate location **I-5** until your display reads **Baud Rate = 300. Make sure the T-TAM's baud rate is also set to 300**. (Move the switch on the front panel of the T-TAM to the 300 position.)

6. Activate location **I-4** until your display reads **Serial Port B.** We recommend that you use **Serial Port B** when using a computer.

7. Activate location **J-6**. Your display should read **Serial On Baud Rate = 300.**

8. Activate location **M-7** and location **M-6** to return to your custom overlay and to communication mode.

Step 4: Send Text to the Computer

You may now begin to send text to the computer. Use icons (Minspeak) or spelling to type words or letters in a word processor document. Please try this to make sure everything is working. Notice that your TT/LT can't perform special computer functions such as backspace, return, arrow keys or function keys. When you are able to send text, turn off your computer and continue with the next section. In the next section, you will learn how to put these special computer functions into your TT/LT.

➲Note:

If you are unable to send text to the computer, please recheck your connections and try these steps again before proceeding further.

Adding Computer Functions to Your Touch Talker or Light Talker

In this section you will learn how to add special computer commands to your custom overlay and store them in your TT/LT.

Complete each step in the order given and read this entire chapter before you begin to store anything in your device.

Step 1: Determine Which Minspeak Application Program (MAP) You Are Using.

Identify the vocabulary in your communication device. If you are using one of the Minspeak Application Programs™ (MAP™s) listed below, you have letters, numbers, punctuation and a space character stored in spell mode. You have icon sequences that generate words, phrases and sentences in communication mode.

> **WORDS STRATEGY**®
> **IEP+**™
> **LANGUAGE, LEARNING & LIVING**™

If you are using PRC's factory overlay, the letters, numbers, punctuation marks and a space character are stored in spell mode. If you have created your own vocabulary, you should have letters, numbers, punctuation marks and a space character stored in spell mode.

In the space below, list the MAP you are using. If you aren't using a MAP, list the letters, numbers and punctuation marks you have stored in spell mode.

Step 2: Adding Touch Talker or Light Talker Functions to Your Custom Overlay.

There are several Touch Talker/Light Talker functions that are practical to have on your custom overlay when you are using a computer. If they are not already on your custom overlay, you may want to add these functions:

Delete Character, Speech On, Speech Off, Serial On and Serial Off

Speech On and **Speech Off** allow you to work on the computer without voice feedback. **Serial On** and **Serial Off** allow you to stop sending information to the computer without disconnecting cables. This is important if you need to speak but don' t want what you' re saying sent to the computer. You may also want to store **No Theme and One Icon Theme** on your custom overlay. Some of the special computer commands you are storing in your communication device can be stored in a theme.

Use the **Build Custom Overlay** procedure described in the TT/LT operational manual to store these functions on your custom overlay. Please refer to that manual for additional instructions.

In the space below, list the TT/LT functions you want to add to your custom overlay. Also mark the location you would like to store each of these functions.

For example: Delete Character store at O4.

Step 3: Choose the Computer Functions You Want to Use.

There are keys on your computer keyboard that you want to have stored on your TT/LT. These keys allow you to control the computer from your communication aid. For example, if you want to type papers or letters, there are six basic computer keys that let you create and edit documents from your TT/LT. These six computer keys are:

<BACKSPACE>, <RETURN>, <RIGHT ARROW>, <LEFT ARROW>, <UP ARROW>, and <DOWN ARROW>

Take some time to decide which computer keys or functions you want to use on your communication aid. You can include mouse functions and keyboard functions. Identify the 5 to 10 most important computer keys or functions that you want to use. These are the computer functions that you should store in your communication aid. After your skills develop, you may want to store additional computer functions.

In the space below, list the computer keys or functions that you want to use on your communication aid.

Continue reading this section before you begin storing any commands in your TT/LT.

Step 4: Organize Special Computer Commands On Your Overlay.

You are now ready to begin adding labels for these special computer commands to your overlay. How you organize your overlay depends on whether you have TMOS or EMOS and how many special computer functions you want to store in your device.

Read this entire step before you begin to mark your overlay.

If You Have EMOS

The Touch Talker and Light Talker have special keys which perform functions. For example, CLEAR DISPLAY clears the display of your communication aid and DELETE CHARACTER deletes the last character that appears on the display.

Some of these function keys are also available for storing special computer functions and are called Dual Role Function Keys. There are eleven TT/LT Dual Role Function Keys. When you set your device for computer access, their TT/LT functions are turned off and the special computer functions are available for use. Their TT/LT functions are restored when you turn your serial port off and stop using a computer.

The Dual Role Function keys are frequently used on a TT/LT when communicating, but are never used when you are accessing a computer. This makes them good locations for storing special computer commands.

These are the eleven keys that have a Dual Role Function:

LEFT ARROW	**RIGHT ARROW**
TEXT MARKER	**SPEECH MARKER**
TEXT & SPEECH MARKER	**SEND DISPLAY**
DELETE SELECTION	**DELETE WORD**
DELETE CHARACTER	**STORE**
STORE FUNCTION	

Identify and list which of these eleven keys you have on your custom overlay. Assign a special computer command to each of these key locations and label your overlay. It is helpful to match similar key names to computer functions. For example, assign the computer **backspace** to **DELETE CHAR**, the computer **right arrow** to the **TT/LT RIGHT ARROW** and the computer **left arrow** to the **TT/LT LEFT ARROW.**

If you want to store more computer commands than you have dual role function keys, continue reading this section to learn about one-icon themes.

If you have assigned all your special computer commands, you are ready to proceed to step six and to begin to store them in your communication aid.

A one-icon theme may be used if there are not enough Dual Role Function keys available for all your special computer commands. Using a one-icon theme allows you to store your special computer commands and mouse cursor commands under icon sequences in Minspeak mode.

You may also want to store spelling characters, numbers and punctuation in a one icon theme with your computer commands. Storing spelling characters, numbers and punctuation in the "computer" theme can save frequent switching between communication and spell mode. If you're not sure you need to put spelling characters in the one icon theme, you can always add them at a later date.

⮎**Note**:

If you are using a computer that requires a mouse and you want to control the mouse from your communication aid, you should store the mouse commands in a separate "mouse" theme.

Using a One Icon Theme

Choose the first icon of your one icon theme. If you have a "computer" icon and want to use it as the first icon, you should be aware that any vocabulary stored under this icon as a single hit will be masked or hidden. Either carefully identify any message that is stored under the computer icon and move this message or choose a different icon for your one-icon theme. You may want to use a blank or seldom used location to create a computer icon.

Remember

If you create a new location, you must label it.
Refer to your communication aid manual for this procedure.

Design an Overlay

Now design your overlay and select locations for your various computer functions. The patterns you choose should be organized so that it is easy to learn and work with. Make a list of the icons and which special computer functions you are storing under each icon. Label these locations on your overlay. If you have decided to include spelling characters in your one-icon theme, you may assign them to their existing spell mode location on your overlay. Designing an overlay first makes storing a much simpler process.

If You Have TMOS

If you want to store one or two special computer functions, and you have blank locations available, you can assign them to these blank locations. Go to step six and begin storing.

A one-icon theme may be used to store your special computer commands if there are not enough blank locations available. Using a one-icon theme allows you to store your special computer commands and mouse cursor commands under icon sequences in Minspeak mode.

You may also want to store spelling characters, numbers and punctuation in a one icon theme with your computer commands. Storing spelling characters, numbers and punctuation in the "computer" theme can save frequent switching between communication and spell mode. If you' re not sure you need to put spelling characters in the one icon theme, you can always add them at a later date.

➲Note:

If you are using a computer that requires a mouse and you want to control the mouse from your communication aid, you should store the mouse commands in a separate "mouse" theme.

Using a One Icon Theme

Choose the first icon of your one icon theme. If you have a "computer" icon and want to use it as the first icon, you should be aware that any vocabulary stored under this icon as a single hit will be masked or hidden. Either carefully identify any message that is stored under the computer icon and move this message or choose a different icon for your one-icon theme. You may want to use a blank or seldom used location to create a computer icon.

Remember

If you create a new location, you must label it.
Refer to your communication aid manual for this procedure.

Design an Overlay

Now design your overlay and select locations for your various computer functions. The patterns you choose should be organized so that it is easy to learn and work with. Make a list of the icons and which special computer functions you are storing under each icon. Label these locations on your overlay. If you have decided to include spelling characters in your one-icon theme, you may assign them to their existing spell mode location on your overlay. Designing an overlay first makes storing a much simpler process.

In the space below, list the computer keys you are going to store and the locations or icon sequences you plan to store them under. If you are using a theme list the first icon for your theme and its location.

Step 5: Identify the Computer Messages You Want to Store in Your TT/LT.

There are several different types of special computer messages or commands that you can store in your TT/LT. Each of these commands are described on the next few pages.

Following the description, refer to Appendix A to learn the exact messages to store in your TT/LT. At the end of this section, the steps for storing are outlined.

Remember

All special computer keys are stored using an escape **<esc>** sequence to let the T-TAM know that you are sending a computer command, not regular text.

This escape sequence is created by activating **CTRL [** (CONTROL LEFT BRACKET) on your fixed overlay. This escape sequence is referred to as **<esc>** throughout the rest of this manual.

About "Special Name" Computer Keys

Computer keys that have special names include:

<BACKSPACE>, <RIGHT ARROW>, <LEFT ARROW>, <PAGE UP>, <PAGE DOWN>, <FUNCTION KEYS(F1, F2, F3)>, and <NUMERIC KEYPAD(1-9, +, =, -, *, etc.)>.

The computer identifies each of these keys through a code name or message.

> **For Example:**

COMPUTER KEY	CODE NAME
<BACKSPACE>	backspace
<F8>	F8
<NUMERIC KEYPAD 9>	Kp9
<RIGHT ARROW>	right

APPENDIX-A contains a complete list of all these special computer keys and the exact messages you must store in your communication aid.

About Computer Modifier Keys

Modifier keys change the way *other* keys on the computer's keyboard work.

Modifier keys include:

<ALT>, <CONTROL>, <SHIFT>, <COMMAND> and <OPTION>.

These keys may be held down electronically until one additional key is entered and then released electronically. You can also combine several modifier keys at once.

You must store special messages in your TT/LT to tell these keys what you want them to do.

> **For example:**
> To tell the computer to *hold down the <SHIFT> key*, you would need to type the word "hold" in front of the <SHIFT> key name.
>
> To tell the computer to *combine the <COMMAND> and <SHIFT> keys,* you would type the word "combine" in front of the <COMMAND> and <SHIFT> key names.

APPENDIX-A contains a complete list of all these modifier keys and the exact messages you must use to store them in your communication aid.

About Mouse Cursor Movements and Mouse Button Keys

You can send messages from your communication aid to the computer that tell it to move the mouse cursor.

There are **two types of mouse cursor movement** commands.

1. The **MOVE** command moves the mouse cursor a *specific distance* on the screen. For example, a **MOVE** command can tell the mouse cursor to move 1 inch to the right.

2. The **GOTO** command moves the mouse cursor to an *assigned location* on the screen. For example, a **GOTO** command sends the mouse cursor to an assigned location on the screen. There can be a frequently used menu or icon at this location.

Both types of mouse cursor movement commands use screen coordinates which correspond to any horizontal change (across the screen) and any vertical change (down the screen) of the mouse cursor. Screen coordinates range from 1 to 2000 and correspond to the number of pixels (picture dots) that are on your monitor screen. This number varies with the brand of monitor you are using.

Horizontal plus (+) values move the mouse to the right and **minus (-)** values move it to the left.

Vertical plus (+) values move the mouse downward and **minus (-)** values move the mouse upward.
The mouse moves **diagonally** when both a **horizontal and vertical** value are sent.

The **first** value given is the **horizontal** value, the **second** is the **vertical** value.

> **For example:**
> <esc>,move, +75(horizontal),-75(vertical).
> This relocates the mouse cursor approximately 1 inch to the right and 1 inch up from where it was first located on the screen.

Mouse reset

This command moves the mouse to the upper left corner of the computer screen. This command coordinates your mouse and monitor for accurate movement when you use GOTO commands. It also lets you bring the mouse back on the screen when you send it to far.

Mouse button

Mouse button actions include: single click, double click, and holding the mouse button for dragging. You can perform mouse button actions from your communication aid by storing messages that tell the computer what to do.

> **For example:**
> <esc>,moulock. locks the mouse button down for dragging.
>
> <esc>,mourel. releases the mouse button from its locked state.

APPENDIX-A has specific messages to store mouse cursor movement commands, mouse button commands and mouse reset in your communication aid.

⮌Note:

The "mouse speed" in the computer *must* be set to its **slowest** speed or "tablet" mode for the mouse cursor movement commands to work properly. Please see your computer manual if you' re not certain how to do this.

Step 6: Storing in Your Touch Talker or Light Talker

You are now ready to store computer functions in your communication device. The steps below outline the process you will perform on your Touch Talker or Light Talker to store these commands.

Remember

Save the memory in your communication aid **before** you begin to store any new commands.

---

1. Press location **I-1** while you press the **On** button to turn your TT/LT on in **Fixed overlay**. There should be an **F** in the lower right hand corner of your display screen.

2. Activate **CLEAR DISPLAY**

3. Activate **STORE.** Your display reads **Select Icon Sequence.**

4. On your **Custom overlay** select the location (s) where you have chosen to store your special computer command. Remember to choose your computer icon first if you are using a one icon theme.

5. On your **Fixed overlay,** activate **END.** Your display reads **Ready to Spell.**

6. Activate **CTRL** (location **I-8**), Activate **[** (location **D-4**). Your display shows a blank space as the <**esc**> character. This is the <**esc**> character that tells the computer to prepare for a special computer command.

7. Now type in the special computer command.

    Type the message *exactly* **as it appears in Appendix A**. Put spaces and commas only where they appear and always end with a period.

8. Activate **STORE.** If you have EMOS, your display reads **Storing......**
    If you have TMOS, your display will be blank.

Continue to store all your computer functions in this manner, repeating steps 2 - 8 until you are finished.

When you have correctly entered an emulator command you will see a blank space on your display followed by the command: for example, the command

<CTRL>[backspace.

Appears on your display as: (empty space)backspace.

➲Note:

Storing letters, numbers, and punctuation in your computer theme is the same as storing vocabulary (words and phrases) in your communication aid. Please refer to your communication aid manual if you need more assistance with this.

Using a Liberator With the T-TAM

Before using your Liberator to access a personal computer:

•Be familiar with the operation of your Liberator and its vocabulary management system (Minspeak). Understand the purpose and use of your toolbox and custom overlay. Be familiar with the process of storing vocabulary in your device and understand the concept of a one icon theme.

•Be familiar with the operation of your personal computer and the software that you plan to use. Know which special computer functions you want to perform from your communication aid.

Getting Started

Make sure that all of your cable connections are correct and that your Liberator and computer are working correctly.

➲Note:

Your Liberator should already be connected to your T-TAM and computer.
If it is not connected, please refer to pages 11-18 for instructions to do this.

Step 1: Turn On Your Computer

Turn on your computer. You should hear a short beep lasting about 1 second from the T-TAM. This indicates that the T-TAM is on and working properly. If you don' t hear a beep or if the beep lasts longer than 1 second, the T-TAM may not be working correctly. Turn off your computer, double check your connections and restart your computer.

Step 2: Open A File

If you hear a beep and the computer seems to be working properly, open a word processing document or file that you can type text into from your computer.

Step 3: Turn On Your Liberator and Open the Serial Port.

Open your toolbox and activate the OUTPUT MENU. Use the following settings to access a computer:

> Printer Mode = **OFF or INTERNAL**
> Serial Output Mode = **IMMEDIATE**
> Baud Rate = **300 or 1200**
> Data Bits = **8**
> Stop Bits = **2**
> Parity = **NONE**
> Characters Per Line = **Unlimited**
>
> **Make sure the T-TAM and Liberator baud rates are the same. Either move the switch on the T-TAM front panel to 1200 or 300, or change the Liberator's baud rate to match the T-TAM setting.**

⮌**Note:**

"Character Pacing Delay" (in the OUTPUT MENU) may be used to slow down the rate that characters are sent to the T-TAM. This is useful when you are sending long strings of text or if the T-TAM is not sending all of the characters to the computer.

Step 4: Send Text to the Computer.

You may now begin to send text to the computer. Use icons (Minspeak) or spelling to type words or letters in a word processor document. Please try this to make sure everything is working. Notice that your Liberator can' t perform special computer functions such as backspace, return, arrow keys, or function keys. When you are able to send text, turn off your computer and continue with the next section. In the next section, you will learn how to put these special computer commands in your Liberator.

⮌**Note:**

If you are unable to send text to the computer, please recheck your connections and try these steps again before proceeding further.

Adding Computer Functions to Your Liberator

In this section you will learn how to add special computer commands to your custom overlay and store them in your Liberator.

Complete each step in the order given and read this entire chapter before you begin to store anything in your device.

Step 1: Determine Which Minspeak Application Program (MAP) You Are Using.

Identify the vocabulary in your communication device. If you are using one of the Minspeak Application Programs (MAPs) listed below, you have letters, numbers punctuation and a space character stored in spell mode. You have icon sequences that generate words, phrases and sentences in communication mode.

> **UNITY**®
> **WORDS STRATEGY**®
> **IEP+**™
> **LANGUAGE, LEARNING & LIVING**™

If you used PRC' s factory overlay, letters, numbers, punctuation and a space character are stored in spell mode. If you have created your own vocabulary, you should have letters, numbers punctuation marks and a space character stored in spell mode.

In the space below, list the MAP you are using. If you are not using a MAP, list the letters, numbers and punctuation marks you have stored in spell mode.

Step 2: Adding Liberator Tools to Your Custom Overlay.

There are several Liberator tools that are practical to have on your custom overlay when you are using a computer. If these tools are not already on your custom overlay, you may want to add them now:

THEMES MENU, OUTPUT MENU, CLEAR DISPLAY, DELETE CHARACTER, DELETE SELECTION, DELETE ICON, SPEECH OFF, SPEECH ON

SPEECH ON and **SPEECH OFF** let you work on the computer without voice feedback. The **OUTPUT MENU** lets you stop sending information to the computer without disconnecting cables. This becomes important if you need to speak but don' t want what you' re saying sent to the computer. The **THEME MENU** is useful on your custom overlay if you store some of the special computer commands in a theme.

Store these Liberator tools using the ASSIGN KEY MENU in the toolbox. Refer to the Liberator manual chapter ADDING TOOLS for additional information.

In the space below, list the Liberator Tools you plan to store on your custom overlay and the location you plan to store them.

For example: **Delete Character:** store at location O6.

Step 3: Choose the Computer Functions You Want to Use.

There are keys on your computer keyboard that you will want to have stored on your Liberator. These keys allow you to control the computer from your Liberator. For example, if you want to type papers or letters, there are six basic computer keys or functions that allow you to create and edit documents from your Liberator. These six computer functions are:

<BACKSPACE>, **<RETURN>**, **<RIGHT ARROW>**, **<LEFT ARROW>**, **<UP ARROW>**, and **<DOWN ARROW>**

Take some time to decide which computer keys or functions you want to use on your Liberator. You can include mouse functions and keyboard functions. Identify the 5 to 10 most important computer keys or functions that you want to use. These are the computer functions that you should store in your Liberator. After your skills develop, you may want to store additional computer functions.

In the space below, list the computer keys or functions you want to use on your Liberator.

Continue reading this section before you begin storing these commands in your Liberator.

Step 4: Organizing Special Computer Commands On Your Overlay.

The next step is to add these special computer commands to your Liberator overlay. Special computer commands may be added to your Liberator two different ways.

I.   Computer commands or keys can be stored under a one icon "computer" theme. Using a one-icon theme lets you store computer commands under icon sequences in Minspeak mode. Themes are useful for organizing computer keys and mouse commands.

Computer commands such as Function keys (F1, F2, etc.), CTRL, ALT and COMMAND should be stored in a "computer" theme. If you plan to store mouse cursor movements, you may want to store them under a separate one-icon "mouse" theme.

II.   Some computer commands or keys may be stored as a spell mode assignment or a Minspeak tool. Computer keys such as the arrow keys and backspace or delete may be stored under the arrow keys and delete character on your Liberator. These computer keys can be assigned as a Spell Mode assignment and a Minspeak tool.

Storing computer keys under similar Liberator keys makes it easy to remember where these keys are and what they do.

Storing computer keys as spell mode assignments and/or as Minspeak tools lets you activate them without entering a theme.

Take some time to figure out which computer commands you would like to store in a theme and which you would like to store in a spell mode or Minspeak tool assignment. You can store some computer keys as spell mode and Minspeak tool assignments and some computer keys in a theme.

⮌**Note:**

For additional information on using themes, read the chapter in the Liberator manual on **THEMES**.

Using A One-Icon Theme

If you are using a theme, choose the first icon in your one-icon theme. If you have a "computer" icon and wish to use it as your first icon, you should be aware that vocabulary stored under this icon as a single hit will be hidden or masked when you are in the computer theme. Either carefully identify any message that is stored under the "computer" icon and move the message or choose a different icon for your one icon theme. You may want to use a blank or seldom used location to create a computer icon.

⮌**Note:**

If you create a new location, you must label it.
Refer to your communication aid manual for this procedure.

Design an Overlay

Now design your overlay and select locations for your various computer functions. The pattern you choose should be organized so that it is easy to learn and work with. Make a list of the icons and which special computer functions you are storing under each icon, then label those locations on your overlay. List which computer functions will be stored as spell mode assignments or Minspeak tools and which functions will be stored in a theme.

If you have decided to include spelling characters in a one icon theme, you may assign them to their existing spell mode location on your overlay. Designing an overlay first makes storing a much simpler process.

Remember:

When selecting locations for these commands, you should choose icons or locations that are easy to remember.

For example, you could store the "backspace" command in the DELETE CHAR. location and the arrow keys in the arrow icons on your overlay.

In the space below, list the computer keys or functions you plan to store and the locations or icon sequences you are going to store them under. If you are using a theme, list the first icon in your theme and its location.

Step 5: Identify Computer Messages to Store in Your Liberator

There are several different types of special computer commands or messages that you can store in your Liberator. The commands are described below.

Following the description, refer to **APPENDIX-A** to learn the exact messages to store in your Liberator. The steps for storing in your Liberator are outlined at the end of this section.

Remember:

All special computer keys are stored using an escape **<esc>** sequence to let the T-TAM know that you are sending a computer command, not regular text. This escape sequence is created by activating **CTRL [** (CONTROL LEFT BRACKET) in your toolbox. This escape sequence is referred to as **<esc>** throughout the rest of this manual.

About "Special Name" Computer Keys

Computer keys that have special names include:

<BACKSPACE>, <RIGHT ARROW>, <LEFT ARROW>, <PAGE UP>, <PAGE DOWN>, <FUNCTION KEYS(F1, F2, F3)>, and <NUMERIC KEYPAD(1-9, +, =, -, *, etc.)>

The computer identifies each of these keys through a code name or message.

For Example:

COMPUTER KEY	CODE NAME
<BACKSPACE>	backspace
<F8>	F8
<NUMERIC KEYPAD 9>	Kp9
<RIGHT ARROW>	right

APPENDIX-A contains a complete list of all these special computer keys and the exact messages you must store in your communication aid.

About Computer Modifier Keys

Modifier keys change the way *other* keys on the computer's keyboard work. Modifier keys include:

<ALT>, <CONTROL>, <SHIFT>, <COMMAND> and <OPTION>.

These keys may be held down electronically until one additional key is entered and then released electronically. You can also combine several modifier keys at once.

You must store special messages in your Liberator to tell these keys what you want them to do.

> **For example:**
>
> To tell the computer to *hold down the <SHIFT> key*, you would need to type the word "hold" in front of the <SHIFT> key name.
>
> To tell the computer to *combine the <COMMAND> and <SHIFT> keys,* you would type the word "combine" in front of the <COMMAND> and <SHIFT> key names.

APPENDIX-A contains a complete list of all these modifier keys and the exact messages you must use to store them in your communication aid.

About Mouse Cursor Movements and Mouse Button Keys

You can send messages from your communication aid to the computer that tell it to move the mouse cursor.

There are two types of mouse cursor movement commands.

1. The **MOVE** command moves the mouse cursor a *specific distance* on the screen. For example, a **MOVE** command can tell the mouse cursor to move 1 inch to the right.

2. The **GOTO** command moves the mouse cursor to an *assigned location* on the screen. For example, a **GOTO** command can send the mouse cursor to a frequently used menu or icon at a specific location on the screen.

Both types of mouse cursor movement commands use screen coordinates which correspond to any horizontal change (across the screen) and any vertical change (down the screen) of the mouse cursor. Screen coordinates range from 1 to 2000 and correspond to the number of pixels (picture dots) that are on your monitor screen. This number varies with the brand of monitor you are using.

Horizontal plus (+) values move the mouse to the right and **minus (-)** values move it to the left.

Vertical plus (+) values move the mouse downward and **minus (-)** values move the mouse upward.

The mouse moves **diagonally** when both a **horizontal and vertical** value are sent.

The **first** value given is the **horizontal** value, the **second** is the **vertical** value.

> **For example:**
> <esc>,move, +75(horizontal),-75(vertical).
> This relocates the mouse cursor approximately 1 inch to the right and 1 inch up from where it was first located on the screen.

Mouse reset

This command moves the mouse to the upper left corner of the computer screen. This command coordinates your mouse and monitor for accurate movement when you use GOTO commands. It also lets you bring the mouse back on the screen when you send it too far.

Mouse button

Mouse button actions include: single click, double click, and holding the mouse button for dragging. You can perform mouse button actions from your communication aid by storing messages that tell the computer what to do.

For example:
<esc>,moulock. locks the mouse button down for dragging.

<esc>,mourel. releases the mouse button from its locked state.

APPENDIX-A has specific messages to store mouse cursor movement commands, mouse button commands and mouse reset into your communication aid.

➲**Note:**

The mouse speed in the computer *must* be set to its **slowest** speed or "tablet" mode for the mouse cursor movement commands to work properly. Please see your computer manual if you' re not certain how to do this.

Step 6: Storing In Your Liberator

You are now ready to store computer functions into your Liberator. There are two different methods for storing computer functions in your Liberator.

1. If you are using a "computer" or "mouse" theme, follow the directions for **Storing In A THEME.**

2. If you are storing in empty spell mode locations and/or adding Minspeak Tools, follow the directions for **Storing Using ASSIGN KEY MENU**.

Remember:

Save the memory in your communication aid **before** you begin to store any new commands.

Storing In a THEME

1. Open the Toolbox on your Liberator. Select the **THEMES MENU** and select **1 Icon Theme** .

2. The Liberator asks for the icon you are going to use for your one icon theme. Close the Toolbox and select the icon you have chosen for your "computer" theme. The Liberator tells you that a **One Icon Theme has been set**.

3. Open the Toolbox and activate **CLEAR DISPLAY**. Select **STORE**. Your display reads **Spell Text To Store-Then Select Store**.

4. Activate **FUNCTION INSERT**. Select **CTRL** (location D-8). Activate **FUNCTION INSERT**. Begin to spell **Serial Off**. When the menu of tools appears, select **Serial Off**. Type a description of the special computer command or mouse cursor movement that you are going to store.

   The description you type appears on your Liberator screen when you are using the computer command. Type descriptions of key names or mouse movement messages that tell you what special computer function you are performing.

   For example, *Move mouse 1 inch Right and 1 inch up,* would tell you what mouse movement you can expect to see on the computer screen. *Return* would tell you that you are sending a "return" command to the computer.

5. Activate **FUNCTION INSERT**. Select **CTRL** (location D-8). Activate **FUNCTION INSERT**. Begin to spell **Serial Marker.** When the menu of tools appears, select **Serial Marker**.

6. Activate **CTRL** (location D-8), Activate **[** (location N-6). Your Liberator display shows a small arrow pointing to the left. This is the **<esc>** character that tells the computer to prepare for a special computer command.

7. Now type in the special computer command **(see APPENDIX-A.)** Type the message exactly as it appears in **APPENDIX-A**. Put spaces and commas only where they appear and always end with a period.

8. Select **FUNCTION INSERT** and begin to spell **Serial Marker**. When the menu of tools appears, select **Serial Marker**. Activate **STORE**. Your display reads **Select Icon Sequence-Then Enter.**

9. Close your toolbox and select an icon sequence. Remember, the computer icon has already been chosen as the first icon so you don't   need to select it again. Select **ENTER** to store your message under the icon sequence you have chosen. Your display reads **Text has been Stored**.

Continue to store all your special computer commands in this manner, repeating steps 3-7 until you are finished.

This is an example of what the display screen on your Liberator may look like when an emulator command has been entered correctly.

Emulator command	What you see on your communication aid screen
<CTRL>[right.	<Control><Serial Off>Right Arrow<Control><Serial Marker> • right.<Serial Marker>

Storing Using the ASSIGN KEY MENU

1. Open the Toolbox and select ASSIGN KEY MENU. Close the Toolbox and select the key where you want to add the special computer command.

2. Open the Toolbox and select **Spelling** to add to Spell Mode <u>or</u> Select **Minspeak Tool** to add as a Minspeak Tool.

⮌Note:

When storing as a Spell Mode assignment or Minspeak Tool, the Liberator will not report the name of the computer key you are using. The computer key should perform a function similar to the Liberator key you are storing it under.

If you would like the Liberator to speak the name of the computer key you are using, Activate FUNCTION INSERT. Begin to spell Speech Marker. When the menu of tools appears, select **Speech Marker.** Type the name of the key you wish the Liberator to speak. Continue with the directions below.

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3. The cursor should be at the end of any text in your work space. Activate FUNCTION INSERT. Select CTRL (location D-8). Activate FUNCTION INSERT. Begin to spell Serial Marker. When the menu of tools appears, select **Serial Marker**.

4. Activate CTRL (location D-8), Activate **[** (left bracket, location N-6). Your display shows a small arrow pointing to the left. This is the **<esc>** character that tells the computer to prepare for a special computer command.

5. Now type in the special computer command **(see APPENDIX-A.)** Type the message exactly as it appears in **APPENDIX-A.** Put spaces and commas only where they appear and always end with a period.

6. Select FUNCTION INSERT and begin to spell **Serial Marker**. When the menu of tools appears, select **Serial Marker**. Activate STORE. Your display returns to the ASSIGN KEY MENU. To store the special computer commands in both spell mode and as a Minspeak tool, choose "**Make same assignment for both modes**." Then choose "**Copy Spelling Assignment to Minspeak**" or "**Copy Minspeak Assignment to Spelling**."

7. Select "**View next key**" to continue assigning keys. Select **EXIT** to exit the ASSIGN KEY MENU.

This is an example of what the display screen on your Liberator may look like when an emulator command has been entered correctly.

Emulator command   **What you see on your communication aid screen**
<CTRL>[right.   <RIGHT><Control><Serial Marker>• right.<Serial Marker>

Using a DeltaTalker with the T-TAM

Before using your DeltaTalker to access a personal computer:

•Be familiar with the operation of your DeltaTalker and its vocabulary management system (Minspeak). Understand the purpose and use of your toolbox and custom overlay. Be familiar with the process of storing vocabulary in your device and understand the concept of a one icon theme.

•Be familiar with the operation of your personal computer and the software that you plan to use. Know which special computer functions you want to perform from your communication aid.

Getting Started

Make sure that all of your cable connections are correct and that your DeltaTalker and computer are working correctly.

➲Note:

Your DeltaTalker should already be connected to your T-TAM and computer.
If it is not connected, please refer to pages 11-18 for instructions to do this.

Step 1: Turn On Your Computer

Turn on your computer. You should hear a short beep lasting about 1 second from the T-TAM. This indicates that the T-TAM is on and working properly. If you don' t hear a beep or if the beep lasts longer than 1 second, the T-TAM may not be working correctly. Turn off your computer, double check your connections and restart your computer.

Step 2: Open a File

If you hear a beep and the computer seems to be working properly, open a word processing document or file that you can type text into from your computer.

Step 3: Turn On Your DeltaTalker and Turn On the Serial Port.

Open your toolbox and select the OUTPUT MENU. Use the following settings to access a computer:

Serial Output = **ON**
Serial Output Mode = **IMMEDIATE**
Baud Rate = **300 or 1200**
Character Pacing = **OFF**

Make sure the T-TAM and DeltaTalker baud rates are the same. Either move the switch on the front panel of the T-TAM to match the DeltaTalker's baud rate or set the DeltaTalker to match the T-TAM.

➲**Note:** If you are using DeltaTalker IR software, set **Serial Port = IR WINDOW**

➲**Note:**

"Character Pacing Delay" (in the OUTPUT MENU) may be used to slow down the rate that characters are sent to the T-TAM. This is useful when you are sending long strings of text or if the T-TAM is not sending all of the characters to the computer.

Step 4: Send Text to the Computer.

You may now begin to send text to the computer. Use icons (Minspeak) or spelling to type words or letters in a word processor document. Please try this to make sure everything is working. Notice that your DeltaTalker can't perform special computer functions such as backspace, arrow keys, or function keys. In the next section, you will learn how to put these special computer commands in your DeltaTalker. When you are able to send text, turn off your computer and continue with the next section.

➲**Note:**

If you are unable to send text to the computer, please recheck your connections and try these steps again before proceeding further.

Adding Computer Functions To Your DeltaTalker

In this section you will learn how to add special computer commands to your custom overlay and store them in your DeltaTalker.

Complete each step in the order given and read this entire chapter before you begin to store anything in your device.

Step 1: Determine Which Minspeak Application Program (MAP) You Are Using

Identify the vocabulary in your communication device. If you are using one of the Minspeak Application Programs (MAPs) listed below, you have letters, numbers punctuation and a space character stored in spell mode. You have icon sequences that generate words, phrases and sentences in communication mode.

UNITY®
WORDS STRATEGY®
IEP+™
LANGUAGE, LEARNING & LIVING™

If you are using PRC' s factory overlay, letters, numbers, punctuation and a space character are stored in spell mode. If you have created your own vocabulary, you should have letters, numbers punctuation marks and a space character stored in spell mode.

In the space below, list the MAP you are using. If you are not using a MAP, list the letters, numbers and punctuation marks you have stored in spell mode.

Step 2: Adding DeltaTalker Tools To Your Custom Overlay

There are several DeltaTalker tools that are practical to have on your custom overlay when you are using a computer. If these tools are not already on your custom overlay, you may want to add them now:

EXIT THEME, SPEECH ON/OFF, OUTPUT MENU or SETTINGS KEY

Speech On/**Off** lets you work on the computer without voice feedback. The **OUTPUT MENU** or a **Settings Key** lets you stop sending information to the computer without disconnecting cables. This becomes important if you need to speak but don' t want what you' re saying sent to the computer. **EXIT THEME** is needed if you store some of the special computer commands in a theme.

Store these DeltaTalker tools using the ASSIGN MINSPEAK or ASSIGN SPELL keys in the toolbox. For additional information refer to the **PERSONALIZE YOUR OVERLAY** chapter in the DeltaTalker manual. See the **Assigning Keys** pages.

In the space below, list the DeltaTalker Tools you plan to store on your custom overlay and the location you plan to store them.

For example: **Exit Theme:** store at location O6.

Step 3: Choose the Computer Functions You Want to Use.

There are keys on your computer keyboard that you will want to have stored on your DeltaTalker. These keys allow you to control the computer from your DeltaTalker. For example, if you want to type papers or letters, there are six basic computer keys or functions that allow you to create and edit documents from your DeltaTalker. These six computer functions are:

<BACKSPACE>, **<RETURN>**, **<RIGHT ARROW>**, **<LEFT ARROW>**, **<UP ARROW>**, and **<DOWN ARROW>**

If you are using a Macintosh computer, the **<RETURN>** key on your DeltaTalker is set up to work as a computer RETURN key. You can use the RETURN key in Spell mode. If you are using an IBM PC or clone, you must assign the computer RETURN key to a key on your DeltaTalker in Spell mode.

 Take some time to decide what other computer keys or functions you want to use on your DeltaTalker. You can include mouse functions and keyboard functions. Identify the 5 to 10 most important computer keys or functions that you want to use. These are the computer functions that you should store in your DeltaTalker. After your skills develop, you may want to store additional computer functions.

In the space below, list the computer keys or functions you want to use on your DeltaTalker.

Continue reading this section before you begin storing these commands in your DeltaTalker.

Step 4: Organize Special Computer Commands On Your Overlay.

The next step is to add these special computer commands to your DeltaTalker overlay. Special computer commands may be added to your DeltaTalker two different ways.

I.   Computer commands or keys can be stored under a one icon "computer" theme. Using a one-icon theme lets you store computer commands under icon sequences in Minspeak mode. Themes are useful for organizing computer keys and mouse commands.

Computer commands such as Function keys (F1, F2, etc.), CTRL, ALT and COMMAND should be stored in a "computer" theme. If you plan to store mouse cursor movements, you may want to store them under a separate one-icon "mouse" theme.

II.   Some computer commands or keys may be added to a DeltaTalker tool on the custom overlay. Computer keys such as the arrow keys, backspace or delete keys and the RETURN key may be added to the arrow, DELETE. CHAR., and RETURN keys on your DeltaTalker. These computer keys can be added in Spell Mode or Minspeak Mode.

Adding computer keys to similar DeltaTalker keys makes it easy to remember where these keys are and what they do.

Adding computer keys in Spell mode and/or Minspeak mode lets you activate them without entering a theme.

Take some time to figure out the computer commands you would like to store in a theme and those commands you would like to add to DeltaTalker tools in spell mode or Minspeak mode. You can add some computer keys to DeltaTalker tools and store some computer keys in a theme.

➲Note:

For additional information on using themes, see pages 54-59 in the **STORING MESSAGES** section of the DeltaTalker manual. See also pages 111-113 in the DeltaTalker manual.

Using a One-Icon Theme

If you are using a theme, choose the first icon in your one-icon theme. If you have a "computer" icon and want to use it as your first icon, you should be aware that any vocabulary stored under this icon as a single activation will be hidden or masked when you are in the computer theme. Either carefully identify any message that is stored under the "computer" icon and move the message or choose a different icon for your one icon theme. You may want to use a blank or seldom used location to create a computer icon.

➲Note:

If you create a new location, you must label or rename it.
Refer to your communication aid manual for this procedure.

Design an Overlay

Now design your overlay and select locations for your various computer functions. The pattern you choose should be organized so that it is easy to learn and work with. Make a list of the icons and those special computer functions you are storing under each icon. Now mark those locations on your overlay. List those computer functions that will be added to spell mode or Minspeak tools and those functions that will be stored in a theme.

If you have decided to include spelling characters in a one icon theme, you may assign them to their existing spell mode location on your overlay. Designing an overlay first makes storing a much simpler process.

Remember:

When selecting locations for these commands, you should choose icons or locations that are easy to remember.

For example, you could store the "backspace" command in the DELETE CHAR. location, the arrow keys in the arrow icon locations and the RETURN key (if you are using a PC, not a Macintosh) at the RETURN location on your overlay.

In the space below, list the computer keys or functions you plan to store and the locations or icon sequences you are going to store them under. If you are using a theme, list the first icon in your theme and its location.

Remember:

With a Macintosh computer, the <REUTRN> key on the DeltaTalker already works like a computer RETURN key. You do not have to store it.

With a PC, you must store the RETURN key as a computer key.

Step 5: Identify Computer Messages to Store in Your DeltaTalker

There are several different types of special computer commands or messages that you can store in your DeltaTalker. The commands are described below.

Following the description, refer to **APPENDIX-A** to learn the exact messages to store in your DeltaTalker. The steps for storing in your DeltaTalker are outlined at the end of this section.

Remember:

All special computer keys are stored using an escape **<esc>** sequence to let the T-TAM know that you are sending a computer command, not regular text. This escape sequence is located at B-5 (above the = sign) in the DeltaTalker toolbox. Activating **CTRL [** (CONTROL LEFT BRACKET) in the toolbox will also create an **<esc>** sequence. This escape sequence is referred to as **<esc>** throughout the rest of this manual.

About "Special Name" Computer Keys

Computer keys that have special names include:

<BACKSPACE>, <RIGHT ARROW>, <LEFT ARROW>, <PAGE UP>, <PAGE DOWN>, <FUNCTION KEYS(F1, F2, F3)>, and <NUMERIC KEYPAD(1-9, +, =, -, *, etc.)>

The computer identifies each of these keys through a code name or message.

For Example:

COMPUTER KEY	CODE NAME
<BACKSPACE>	backspace
<F8>	F8
<NUMERIC KEYPAD 9>	Kp9
<RIGHT ARROW>	right

APPENDIX-A contains a complete list of all these special computer keys and the exact messages you must store in your communication aid.

About Computer Modifier Keys

Modifier keys change the way *other* keys on the computer' s keyboard work. Modifier keys include:

<p align="center"><ALT>, <CONTROL>, <SHIFT>, <COMMAND> and <OPTION></p>

These keys may be held down electronically until one additional key is entered and then released electronically. You can also combine several modifier keys at once.

You must store special messages in your DeltaTalker to tell these keys what you want them to do.

> **For example:**
>
> To tell the computer to *hold down the ‹SHIFT› key*, you would need to type the word "hold" in front of the ‹SHIFT› key name.
>
> To tell the computer to *combine the ‹COMMAND› and ‹SHIFT› keys,* you would type the word "combine" in front of the ‹COMMAND› and ‹SHIFT› key names.

APPENDIX-A contains a complete list of all these modifier keys and the exact messages you must use to store them in your communication aid.

About Mouse Cursor Movements and Mouse Button Keys

You can send messages from your communication aid to the computer that tell it to move the mouse cursor.

There are two types of mouse cursor movement commands.

1. The **MOVE** command moves the mouse cursor a *specific distance* on the screen. For example, a **MOVE** command can tell the mouse cursor to move 1 inch to the right.

2. The **GOTO** command moves the mouse cursor to an *assigned location* on the screen. For example, a **GOTO** command can send the mouse cursor to a frequently used menu or icon at a specific location on the screen.

Both types of mouse cursor movement commands use screen coordinates which correspond to any horizontal change (across the screen) and any vertical change (down the screen) of the mouse cursor. Screen coordinates range from 1 to 2000 and correspond to the number of pixels (picture dots) that are on your monitor screen. This number varies with the brand of monitor you are using.

Horizontal plus (+) values move the mouse to the right and **minus (-)** values move it to the left.

Vertical plus (+) values move the mouse downward and **minus (-)** values move the mouse upward.

The mouse moves **diagonally** when both a **horizontal and vertical** value are sent.

The **first** value given is the **horizontal** value, the **second** is the **vertical** value.

> **For example:**
> <esc>,move, +75(horizontal),-75(vertical).
> This relocates the mouse cursor approximately 1 inch to the right and 1 inch up from where it was first located on the screen.

Mouse reset

This command moves the mouse to the upper left corner of the computer screen. This command coordinates your mouse and monitor for accurate movement when you use GOTO commands. It also lets you bring the mouse back on the screen when you send it too far.

Mouse button

Mouse button actions include: single click, double click, and holding the mouse button for dragging. You can perform mouse button actions from your communication aid by storing messages that tell the computer what to do.

> **For example:**
> <esc>,moulock. locks the mouse button down for dragging.
>
> <esc>,mourel. releases the mouse button from its locked state.

APPENDIX-A has specific messages to store mouse cursor movement commands, mouse button commands and mouse reset into your communication aid.

➥**Note:**

The mouse speed in the computer *must* be set to its **slowest** speed or "tablet" mode for the mouse cursor movement commands to work properly. Please see your computer manual if you' re not certain how to do this.

Step 6: Storing in Your DeltaTalker

You are now ready to store computer functions into your DeltaTalker. There are two different methods for storing computer functions in your DeltaTalker.

1. If you are using a "computer" or "mouse" theme, follow the directions for **Storing In A THEME.**

2. If you are adding computer keys to DeltaTalker tools in Spell or Minspeak mode, follow the directions for **Add DELETE or BACKSPACE and the ARROWS to DeltaTalker keys.**

Remember:

Save the memory in your communication aid **before** you begin to store any new commands.

Storing a THEME

First you must create and store the theme key.

1. Remove the keyguard and overlay. Turn on the Toolbox.

2. Activate **STORE**.

3. Activate **INSERT TOOL**.

4. Activate **1 ICON THEME**.

5. Select the icon which represents your theme (e.g., COMPUTER).

6. Activate **STORE.**

7. Activate the icon sequence you want to use to enter the theme.

8. Activate **STORE**.

Now that the theme has been created, select the icon sequence you stored the theme under to enter it. The name of the icon that represents your theme will appear on the display (e.g., COMPUTER:).

⮐**Note:**

If you store the computer theme under the computer icon as a single hit, you may have to select COMPUTER and ENTER to enter the theme.

Turn to the next page and begin to store the special computer commands in the DeltaTalker.

Storing in a Theme

Now you are ready to store the computer keys or mouse commands in the DeltaTalker.

1. If you are not already in the **"computer"** or **"mouse"** theme, enter it now. Your display should show the icon name (e.g., COMPUTER:).

2. Activate **STORE**. Your display reads Spell text to Store, then activate STORE.

3. Activate **SHIFT**, then activate **<esc>**. This creates a small arrow pointing to the left on your display.

4. Type the special computer command exactly as it appears in **Appendix A** of this manual. Put spaces and commas only where they appear and always end with a period.

5. Activate **STORE**. Your display reads Select Icon Sequence, then select Store.

6. Select the icon to represent this key or command. Activate **STORE**.

7. Continue to store all the keys in the computer theme following steps 2-6.

This is an example of what the display screen on your DeltaTalker may look like when an emulator command has been stored correctly.

Emulator Command	**What you see on you communication aid screen**
<esc>tab.	• tab.

> **⮌Note:**
>
> When computer commands are stored in this way, the command will appear on the DeltaTalker display and be spoken. To avoid this, read about **Serial Markers** in the DeltaTalker manual.

Add DELETE or BACKSPACE and the ARROWS to DeltaTalker Keys

DELETE or BACKSPACE and the four ARROW keys can be added to the DeltaTalker Arrow and Delete Character keys in **Spell** or **Minspeak** mode. Use ASSIGN MINSPEAK or ASSIGN SPELL or both to add these computer keys to the DeltaTalker tools.

1. Remove the keyguard and overlay and turn the Toolbox On.

2. Activate ASSIGN MINSPEAK or ASSIGN SPELL. The display reads Select the Key to View or Modify.

3. Activate the **Delete Character** key or one of the **Arrow** keys. The key assignment appears on your display.

4. Activate CHANGE ITEM.

5. Activate STORE. If its not already there, move the cursor to the end of the text on your display. DO NOT ERASE the text on the display.

6. Activate INSERT TOOL. Activate SERIAL MARKER.

7. Select SHIFT. Now activate **<esc>**. This creates a small arrow pointing to the left on your display.

8. Type the special computer command exactly as it appears in **Appendix A** of this manual. Put spaces and commas only where they appear and always end with a period.

9. Activate INSERT TOOL. Now activate SERIAL MARKER.

10. Activate STORE.

11. Use NEXT MENU ITEM to continue storing all four **Arrow** keys and **Delete** or **Backspace**.

This is an example of what the display screen on your DeltaTalker may look like when an emulator command has been stored correctly.

Emulator Command	What you see on your communication aid screen
<esc>left.	<left><SERIAL MARKER>• left .<SERIAL MARKER>

Using the AlphaTalker or AlphaTalker II With the T-TAM

Before using your communication aid to access a personal computer, you should consider the following:

•Be familiar with the operation of your AlphaTalker or AlphaTalker II and its vocabulary management system (Minspeak). Understand the purpose and use of your custom overlay and the toolbox. Be familiar with the process using a memory transfer interface with your device.

•Be familiar with the operation of your personal computer and the software that you plan to use. Know which special computer functions you want to perform from your communication aid.

Overview

The AlphaTalker and AlphaTalker II may be used for limited access to a personal computer. It provides you with up to **32** locations that can be used to store messages for the computer.

For Example:

1. You can store special computer commands in either AlphaTalker so it operates like a computer keyboard. Special computer commands like <CTRL>, <ALT>, <OPTION>, and <SHIFT> let you control simple educational software programs.

2. You can store text in either AlphaTalker in the form of single letters, numbers, words or short   sentences. This feature lets you use either AlphaTalker for story writing.

3. You can also store mouse commands in either AlphaTalker. Mouse commands are used for drawing programs and some educational software.

Because there are a limited number of spaces available for storing, you may want to create keyboard emulation files that can be used with specific software programs.

Continue reading this section to learn how to create a keyboard emulation file for the AlphaTalker and AlphaTalker II.

Step 1: Identify the Computer Software You Plan To Use

Each computer software program has a specific set of computer or mouse commands needed to operate it.

For example, a drawing program uses mouse commands. Word processing programs use text in the form of words or letters and a few editing keys like backspace and return. Educational software and games uses special computer commands like CTRL and ALT.

Identify the computer software you plan to use and the computer keys you will need on your AlphaTalker or AlphaTalker II to work with it. Refer to your software manual for this information.

If you plan to use several computer software programs, you may need to group those that are similar and create more than one keyboard emulation file.

In the space below, list the computer keys or functions that you want to use.

Step 2: Create an Overlay and Assign Computer Commands to Key Locations.

Using a blank overlay, mark the locations of the special computer commands you wish to store in your AlphaTalker or AlphaTalker II. Use a pattern that is organized and will be easy to remember.

You may want to use tool icons from the software program to help you remember what task you are performing. For example, a picture of a stamp in the drawing program Kid Pix will be easier to remember than a computer command such as <CTRL><M>.

If you are creating more than one keyboard emulation file, make an overlay for each file.

➲Note:

If you are making more than one keyboard emulation file and overlay,
be sure to label the file and overlay so that you know they go together.

Step 3: Identify Computer Messages to Store in Your AlphaTalker or AlphaTalker II.

There are several different types of special computer commands that you can store in either AlphaTalker. The commands are described below.

Following the description, refer to **APPENDIX-A** to learn the exact message you must store into your AlphaTalker or AlphaTalker II. The steps for storing in either AlphaTalker are outlined at the end of this section.

☝ **Remember**

All special computer keys are stored using an escape **<esc>** sequence to let the T-TAM know that you are sending a computer command, not regular text. This escape sequence is created by activating **COMMAND [** (COMMAND LEFT BRACKET) on your Macintosh computer. The escape sequence is generated using the **ESC** key on your IBM computer. This escape sequence is referred to as **<esc>** throughout the rest of this manual.

About "Special Name" Computer Keys

Computer keys that have special names include:

<BACKSPACE>, <RIGHT ARROW>, <LEFT ARROW>, <PAGE UP>, <PAGE DOWN>, <FUNCTION KEYS(F1, F2, F3)>, and <NUMERIC KEYPAD(1-9, +, =, -, *, etc.)>

The computer identifies each of these keys through a code name or message.

For Example:

COMPUTER KEY	CODE NAME
<BACKSPACE>	backspace
<F8>	F8
<NUMERIC KEYPAD 9>	Kp9
<RIGHT ARROW>	right

APPENDIX-A contains a complete list of all these special computer keys and the exact messages you must store in your communication aid.

About Computer Modifier Keys

Modifier keys change the way *other* keys on the computer's keyboard work.

Modifier keys include:

<ALT>, <CONTROL>, <SHIFT>, <COMMAND> and <OPTION>.

These keys may be held down electronically until one additional key is entered and then released electronically. You can also combine several modifier keys at once.

You must store special messages in your AlphaTalker or AlphaTalker II to tell these keys what you want them to do.

> **For example:**
> To tell the computer to *hold down the <SHIFT> key*, you would need to type the word "hold" in front of the <SHIFT> key name.
>
> To tell the computer to *combine the <COMMAND> and <SHIFT> keys,* you would type the word "combine" in front of the <COMMAND> and <SHIFT> key names.

APPENDIX-A contains a complete list of all these modifier keys and the exact messages you must use to store them in your communication aid.

About Mouse Cursor Movements and Mouse Button Key:

You can send messages from your communication aid to the computer that tell it to move the mouse cursor.

There are two types of mouse cursor movement commands.

1. The **MOVE** command moves the mouse cursor a *specific distance* on the screen. For example, a **MOVE** command can tell the mouse cursor to move 1 inch to the right.

2. The **GOTO** command moves the mouse cursor to an *assigned location* on the screen. For example, a **GOTO** command can send the mouse cursor to a frequently used menu or icon at a specific location on the screen.

Both types of mouse cursor movement commands use screen coordinates which correspond to any horizontal change (across the screen) and any vertical change (down the screen) of the mouse cursor. Screen coordinates range from 1 to 2000 and correspond to the number of pixels (picture dots) that are on your monitor screen. This number varies with the brand of monitor you are using.

Horizontal plus (+) values move the mouse to the right and **minus (-)** values move it to the left.

Vertical plus (+) values move the mouse downward and **minus (-)** values move the mouse upward.

The mouse moves **diagonally** when both a **horizontal and vertical** value are sent.

The **first** value given is the **horizontal** value, the **second** is the **vertical** value.

> **For example:**
> <esc>,move, +75(horizontal),-75(vertical).
> This relocates the mouse cursor approximately 1 inch to the right and 1 inch up from where it was first located on the screen.

Mouse reset

This command moves the mouse to the upper left corner of the computer screen. This command coordinates your mouse and monitor for accurate movement when you use GOTO commands. It also lets you bring the mouse back on the screen when you send it too far.

Mouse button

Mouse button actions include: single click, double click, and holding the mouse button for dragging. You can perform mouse button actions from your communication aid by storing messages that tell the computer what to do.

> **For example:**
>
> <esc>,moulock. locks the mouse button down for dragging.
>
> <esc>,mourel. releases the mouse button from its locked state.

APPENDIX-A has specific messages to store mouse cursor movement commands, mouse button commands and mouse reset into your communication aid.

⮌**Note:**

The ' mouse speed' in the computer **must** be set to its **slowest** speed or "tablet" mode for the mouse cursor movement commands to work properly. Please see your computer manual if you' re not certain how to do this.

Step: 4 Storing in Your AlphaTalker or AlphaTalker II

You will use your computer and the **Memory Transfer Interface (MTI)** program to create a keyboard emulation file.

Creating A Keyboard Emulation File

Follow the directions on the next page to create your keyboard emulation file.

+--+
| **Remember:** |
| |
| **Save the memory** in your communication aid **before** you begin to store |
| any new commands. |
+--+

Creating a Keyboard Emulation File for an AlphaTalker or AlphaTalker II

1. Remove the keyguard and overlay on the AlphaTalker or AlphaTalker II. Connect the cable that came with your MTI to your AlphaTalker or AlphaTalker II. Start the MTI program on your computer. See the AlphaTalker or AlphaTalker II operator's manual for directions on connecting the cables.

2. Save the memory in your AlphaTalker or AlphaTalker II. When the memory is saved, press <F10> on an IBM or click on "Return to Beginning" on a Mac.

> ⮌**Note:**
> You *must* use a vocabulary file to create the keyboard emulation file. If you plan to create several keyboard emulation files, you must save a vocabulary file for each one. Give each file a different name that tells you what is in it.

3. If you are using an IBM, press **F9** on the computer (keyboard emulation). If you are using a Macintosh, click on **Keyboard Emulation**.

4. **Select the file** you want to use for keyboard emulation. We suggest you use the vocabulary file you just saved.

5. Create the emulation overlay. Use the **arrow** keys on your IBM computer or the **mouse** on your Macintosh computer to select the box (key) you want. ⮌If you are using an 8 or 4 location overlay, you must use the box (key) in the *upper left corner* of each block of keys.

6. On an IBM computer, press the **ESC** key. On a Macintosh, press and hold the **COMMAND** key, then press the left bracket (**[**) key. The display box on the screen will show a small arrow pointing to the left. This is the <**esc**> character that tells the computer to prepare for a special command.

7. Type the letters, words, sentence, special computer command or mouse command you want the key to contain. Refer to **APPENDIX-A** for the exact computer or mouse command that you should type. Type the special computer and mouse commands exactly as they appear, putting commas and spaces only where they appear and always ending with a period. You may type **up to 63** characters but only a few of them will show up on the key itself. The rest of the characters will be visible in the display window near the top of your computer screen.

8. When you have finished creating your emulation overlay, you can exit the program without saving the emulation (practice), or you can save it. To save the keyboard emulation overlay on an IBM or compatible, press **F5**. On a Macintosh, click on **Save**.

This is an example of what the display on your computer screen will look like when an emulator command has been entered correctly.

Emulator command **What you see on your computer display window**
<CTRL>[left.   • left.

Step 5. Using Your AlphaTalker or AlphaTalker II for Keyboard Emulation

1. Remove the keyguard and overlay on the AlphaTalker or AlphaTalker II. Use your MTI program to load the keyboard emulation file you have just created back into your AlphaTalker. Consult your AlphaTalker or AlphaTalker II operator's manual if you need additional information on how to do this.

2. Exit the MTI program and disconnect the MTI cable.

3. Connect your AlphaTalker or AlphaTalker II and T-TAM to the computer, following the directions on pages 11-18.

4. Turn the Toolbox on in the AlphaTalker or AlphaTalker II Control Panel. Activate **Set Baud Rate** in the Toolbox and then select **Baud Rate 300 or 1200**. Turn **Keyboard Emulation** On.

➲**Note: The T-TAM's baud rate must match the AlphaTalker's. Make sure the switch on the front panel of the T-TAM is set to 300 or 1200.**

5. Start the program you want to use on your computer.

<div style="border:1px solid black">

Remember:

While you are using either AlphaTalker II for keyboard emulation,
you cannot store or speak messages.

</div>

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6. When you are finished working on the computer, remember to turn off Keyboard Emulation so that you can resume speaking.

7. Each time you want to use a different keyboard emulation file it must be loaded into the AlphaTalker or AlphaTalker II using the above procedure.

<div style="border:1px solid black">

➲ Note:

If you are using an AlphaTalker II, you can copy the ASSIGN KEYBOARD EMULATION tool to your Overlay. See the next page for instructions.

</div>

For AlphaTalker II Only:

Copy the ASSIGN KEYBOARD EMULATION tool to your overlay.

1. Press **SELECT** in the control panel and step to **TOOLS**.

2. Press the **ON/OFF** side to open the Toolbox.

3. Press **STORE** in the Control Panel.

4. The three tools that you can copy to your overlay light up. Press the **ASSIGN KEYBOARD EMULATION** key.

5. Press the key on your overlay where you want to put the **ASSIGN KEYBOARD EMULATION** tool. (Icon Prediction allows you to see where you have blank keys. No LEDs will be lit at blank keys.)

6. You hear three quick beeps. This tells you that the emulation tool has been copied to your overlay.

7. Turn the Toolbox off in the Control Panel. (Press **SELECT**. When the **TOOLS** light flashes, press the **ON/OFF** side of the **SELECT/ON/OFF** button.)

⚡ **Important Note:**

If you copy the ASSIGN KEYBOARD EMULATION tool to a key on your overlay,
do not use the key where you assign it for anything else.

Using the T-TAM to Adjust Features On the Computer Keyboard

T-TAM can be used to modify the behavior of the computer's keyboard so it can be used for typing by people with mild to moderate physical disabilities. This includes people who type using a single finger or headstick, people who have difficulty striking the correct key or releasing a key and people who are able to use the keyboard but have difficulty using a mouse. The keyboard features that the T-TAM can modify or change are described below.

Overview of Keyboard Adjustment Features

StickeyKeys changes the behavior of the modifier keys. Modifier keys include: <SHIFT>, <CONTROL>, and <ALTERNATE> on the IBM computers and <SHIFT>, <CONTROL>, <OPTION> [<ALTERNATE>], and <COMMAND> [Open Apple] on the Macintosh or Apple computers.

StickeyKeys electronically holds down the modifier key so that the person who is typing doesn't have to hold it down. Simply press the modifier key you want, release it, then press the second key that you want. StickeyKeys can also electronically latch (or "lock down") a modifier key such as <SHIFT>, so that you can type in all capitals.

SlowKeys changes the amount of time a key must be held down on the keyboard before it is sent to the computer. This helps to eliminate sending accidental key strokes to the computer.

Repeat Keys changes the delay before a key begins to repeat and the rate at which a key will repeat. This helps to eliminate errors for typists who have trouble releasing keys quickly.

MouseKeys changes the keyboard's NUMBER PAD to a mouse control pad. By using the number pad on the keyboard, an individual can perform all mouse functions. Mouse functions include mouse cursor movements, clicking and dragging.

ToggleKeys lets a user with visual impairments know whether locking keys are on or off. Locking keys are <CAPS LOCK>, <NUM LOCK> and <SCROLL LOCK>. The T-TAM emits beeps to indicate if these features are turned on or off.

Timeout disables the keyboard adjustment features you have set up when there is no keyboard or mouse activity for a period of 5 minutes.

Getting Started

Begin by making sure that your connections are correct and the T-TAM is working.

> ➲**Note:**
>
> Your T-TAM should already be connected to your computer.
> If it is not connected, please refer to pages 11-18 for instructions to do this.

Step 1: Turn On Your Computer

Turn on your computer. You should hear a short beep lasting about 1 second, from the T-TAM. This indicates that the T-TAM is on and working correctly. If you don' t hear a beep, or it lasts longer than 1 second, the T-TAM may not be connected correctly. Turn off your computer, double check your connections and restart your computer.

Step 2: Open a File

Open a word processor file on your computer and try typing from the computer' s keyboard. If letters appear on the screen, proceed to the next step. If you are not able to type letters, recheck your T-TAM connections and try again.

Step 3: Setting Keyboard Adjustment Features

The T-TAM has a set of default values for adjusting the computer' s keyboard that are available when it is first turned on. You may use the "T-TAM Adjustment" program to change these values. Once changed, the new settings are stored in memory and become your new "default" values. To view or change the default settings, run the T-TAM adjustment program.

The directions for running the T-TAM Adjustment program are on the next page.

> ➲**Note:**
>
> You don't have to run the T-TAM Adjustment program each time you want to use the T-TAM. Use this program only when you want to change its *settings*.

Starting the T-TAM Adjustment Program

A. Open a word processing document.
B. Tap the <SHIFT> key 5 times. (This turns on StickeyKeys).
C. If you' re using an IBM or compatible, tap the €TRL>, <ALTERNATE> and <. keys in that order.
D. If you' re using an Apple or Macintosh, tap the €TRL>, <OPTION> and <TAB> keys in that order.
E. The program is now on. You should hear an up siren and letters should appear on your computer monitor. The program asks you a series of questions and gives you the opportunity to accept current values or change these values. Follow the directions in the program and use the computer' s keyboard to respond to these questions.

Example of the "T-TAM Adjustment" program:

T-TAM ADJUSTMENT Program

Press RETURN ONLY when ready to EXIT this program

Press the SPACE BAR to accept the current setting. Enter 0-6 (6=fastest),
"y" for "yes" or "n" for "no" to make a change.

SLOWKEYS and REPEAT KEYS

1. Enter SlowKeys delay, 0-6 (currently = 5) ?
2. Enter delay until repeat, 0-6 (currently = 3) ?
3. Enter repeat rate, 0-6 (currently = 4) ?

MOUSEKEYS

4. Enter mouse speed, 0-6 (currently = 1) ?

QUESTIONS

5. Turn Timeout feature On, "y" or "n" (currently = n) ?
6. Turn StickeyKeys sounds On, "y" or "n" (currently = y) ?
7. Turn StickeyKeys off with two keys, "y" or "n" (currently = n)?

Press RETURN to EXIT this program.

Program EXIT successful. Your current setting are:

SlowKeys = 5 Repeat Keys Delay = 3 Repeat Keys Repeat = 4 Mouse Speed = 1
Timeout = n StickeyKeys Sounds = y

Questions 1-4 ask you to respond by typing a number "1-6". Use the numbers at the *top of your keyboard.* The T-TAM will not accept numbers from the number pad. The number you enter represents a value for that particular keyboard adjustment feature. The following table displays the number entry and its corresponding value.

T-TAM Adjustment Tables

The following tables give you the adjusted keyboard response for each of the settings you can use in the T-TAM Adjustment Program.

RepeatKeys

Number	Delay Until Key Repeats	Number	Key Repeat Rate
0	0 (off)	0	3.0 seconds
1	4.0 seconds	1	2.0
2	3.0	2	1.5
3	2.0	3	1.0
4	1.5	4	0.75
5	1.0	5	0.50
6	0.75	6	0.25

➲**Note:**

If you select "0" for Delay Until Key Repeats, the key will not repeat when pressed.

SlowKeys   ### MouseKeys

Number	Acceptance Time Delay	Number	Mouse Speed	Mouse Time to Maximum Speed
0	0 (off)	0	40 pixels/second	4.0 seconds
1	2.0 seconds	1	80	3.5
2	1.4	2	120	3.0
3	1.0	3	160	2.5
4	0.7	4	200	2.0
5	0.5	5	240	1.5
6	0.3	6	280	1.0

➲**Note:**

The ' mouse speed ' in the computer *must* be set to its **slowest** speed or "tablet" mode for the mouse cursor movement commands to work properly. Please see your computer manual if you' re not certain how to do this.

➲**Note:**

All keyboard adjustment features are turned **Off** when the computer and T-TAM are first turned **On**. ***Read the next section to learn how to turn each keyboard adjustment feature on or off by itself.***

Turning Keyboard Adjustment Features On and Off

When the T-TAM and computer are first turned On, all of the keyboard adjustment features are turned Off. The steps for turning each keyboard adjustment feature on are outlined below.

StickeyKeys

To turn **StickeyKeys On/Off** tap the <SHIFT> key 5 times in a row. After the fifth tap you hear an up-siren. This tells you that StickeyKeys has been turned on. If you tap the <SHIFT> key five times in a row **again**, you hear a down-siren. This tells you that StickeyKeys has been turned Off.

StickeyKeys can also be set so that you can turn it off by pressing a modifier key (<SHIFT>, <CONTROL> or <ALTERNATE>) at the same time as another key. This feature is set in the T-TAM adjustment program.

Once StickeyKeys is turned on, you can set it to do two different things to a modifier key (<SHIFT>, <CONTROL> or <ALTERNATE>).

1. You can latch a modifier key so that it only *affects the next key* you press.   Press the modifier key just once to latch it for one keystroke. The T-TAM emits a short low beep to tell you the key has been latched for one keystroke.

2. You can lock a modifier key so that it *affects each key pressed* until the modifier key is unlocked. Press the modifier key twice to lock it. The T-TAM emits a short low beep and a short high beep to tell you the key is locked. Press the modifier key again to release it. The T-TAM emits a low beep to tell you the key has been released.

SlowKeys and RepeatKeys

SlowKeys and **RepeatKeys** are used together. To turn SlowKeys and Repeat Keys On/Off, press and hold the <RETURN> key for about 8 seconds. After about 4 seconds you will hear three short warning beeps from the T-TAM. These warning beeps tell you that the T-TAM is about to do something. To cancel SlowKeys and RepeatKeys, release the <RETURN> key after you hear these three warning beeps.

If you continue to press down the <RETURN> key for 4 more seconds, you hear an up siren telling you that SlowKeys and RepeatKeys have been turned on.

To turn SlowKeys and RepeatKeys off, press and hold the <RETURN> key **again** for 8 seconds. The T-TAM emits three warning beeps and then a down siren. This tells you that SlowKeys and RepeatKeys have been turned off.

When SlowKeys is active with an "Acceptance Delay", you hear a soft "click" sound when a key is pressed and another soft "click" when the keystroke is released to the computer.

⮑**Note:**

If you are connected to an IBM or compatible, **SlowKeys** and **RepeatKeys** should be turned On *before* you enter any application (such as a word processing document.) Turn SlowKeys and RepeatKeys Off *after* exiting an application. Turning SlowKeys and RepeatKeys On or Off while in an application will cause the cursor to scroll down the screen and your information to disappear.

⮑**Note:**

If you are connected to an Apple or Macintosh computer, you must disable the "key repeat" function of the computer before you use SlowKeys and RepeatKeys.

To do this: select the **Apple Menu** and choose the **Control Panel**. Then choose the **Keyboard Icon** and turn Off the ' delay until repeat' function. This prevents the Mac from generating its own key repeats and lets you control this feature from the keyboard when SlowKeys and RepeatKeys are active.

SlowKeys User Setup Options

If more than one person is using the T-TAM and computer, you may find that the SlowKeys settings are for someone else and difficult for you to use. The T-TAM has two different user setup options. Each of these options has its own separate SlowKeys and RepeatKeys settings. Using one of these setup options lets you override the current SlowKeys and RepeatKeys settings and make changes using the T-TAM Adjustment program. The user setup options should be used as tools to gain access to the keyboard and change T-TAM settings to your liking.

User Setup Option 1

Press and hold the <RETURN> key to turn SlowKeys off. Then press and hold the <RETURN> key down until you hear the up whistle telling you that SlowKeys is on. Keep holding the <RETURN> key until you hear **two** separate up sirens.

User Setup Option 1 does not allow any Acceptance Delay and will never have Key Repeats.

Remember:

Since this is the same way you turn SlowKeys On, you will need to hold the <RETURN> key down until you hear the three warning beeps, the up whistle, and **two** up sirens.

User Setup Option 2

Press and hold the <RETURN> key to turn SlowKeys off. Then press and hold the RETURN key down until you hear the up whistle telling you that SlowKeys is on. Keep holding the <RETURN> key until you hear **two** up sirens and **three** separate up sirens.

User Setup Option 2 has an Acceptance Delay of 2 seconds and will never have Key Repeats.

> ☞ **Remember**
>
> Since this is the same way you turn SlowKeys and User Setup Option 1 on, you will need to hold the <RETURN> key down until you hear the three warning beeps, the up whistle, two up sirens and **three** up sirens.

You cannot change the settings of User Setup Option 1 or 2. The changes you make will affect the SlowKeys settings in the *regular* mode of operation.

Once you have turned on one of the Setup Options, you can turn on the "T-TAM Adjustment" program and change the SlowKeys and RepeatKeys settings to your liking.

When you have made your changes, exit the T-TAM adjustment program. Press the <RETURN> key for 8 seconds to exit the User Setup Option. The T-TAM emits a down whistle which tells you that the User Setup Option and SlowKeys are now off.

You can now turn SlowKeys and RepeatKeys on in the usual way. The changes you made will be active and ready for you to use.

MouseKeys

> ☞ **Remember:**
>
> Your IBM computer must have a PS/2 mouse port for MouseKeys to work. AT computers and some compatibles do not have a PS/2 mouse port. Check your computer manual if you need more information about your computers ports.

To Turn MouseKeys On: press and hold the *left* <SHIFT> key, the *left* <ALTERNATE> (<OPTION> on the Macintosh) key and the <NUM LOCK> (<CLEAR> on the Macintosh) key. You hear an up-siren when MouseKeys becomes active.

If you type with one-finger, a headstick or a mouthstick:

1. First turn on StickeyKeys (5 taps on the SHIFT Key).

2. Tap on the *left* <SHIFT> key, the *left* <ALTERNATE> (<OPTION> on Macintosh) and the <NUM LOCK> (<CLEAR> on the Macintosh) key. MouseKeys is activated.

To Turn MouseKeys Off: tap ONCE on the <NUM LOCK> key (<CLEAR> on the Macintosh). You hear a single down-siren.

When MouseKeys is active, the Number Keypad on your keyboard *acts as your mouse*.

⮌**Note:**

When MouseKeys is active, you will **not** be able to type numbers from your Number Keypad.

The number keys "1, 2, 3, 4, 6, 7, 8, 9" move the mouse in a specific direction. ("5" does not move the mouse). For example, tapping the "1" Keypad key moves the mouse **down** and **one unit to the left**. Tapping the "6" Keypad key moves the mouse **one unit to the right**.

If you hold down any of the "1-9" keys (excluding 5), the mouse moves continuously in the direction of that key, starting slowly at first until it reaches maximum speed. It continues to move at maximum speed until you release the key. (Mouse speed can be changed in the "T-TAM Adjustment" Program.)

Remember:

The ' mouse speed in the computer *must* be set to its **slowest** speed or "tablet" mode for the mouse cursor movement commands to work properly. Please see your computer manual if you' re not certain how to do this.

Mouse Button Keys

Keypad Keys	Mouse Button Action
"5"	' click'
"0"	'h old' (or down)
"." (period)	' release hold' (or up)
"+" (plus)	' double click'
"/" (slash)	' left' b utton (IBM only)
"*" (asterisk)	' left' b utton (IBM only)
"-" (minus)	' right' b utton (IBM only)

The diagrams on the next page show you what each key on the Number Keypad does when MouseKeys is turned on.

⮌**Note:**

On IBM and compatible computers, MouseKeys will not work if the mouse driver is not loaded on the computer. Refer to your DOS manual for more information on installing your mouse driver.

IBM Extended Keyboard

Num Lock	Left Button	Left Button	Right Button
↖	↑	↗	+ Double Click
←	Click	→	
↙	↓	↘	Enter
0 INS Button Lock		Button Release	

IBM AT Keyboard

ESC	Num Lock	Scroll Lock	Sys Req
↖	↑	↗	Left Button
←	Click	→	Right Button
↙	↓	↘	+ Double Click
0 INS Button Lock		Button Release	

Apple Extended Keyboard

Num Lock **Clear**	=	/	*
↖	↑	↗	-
←	Click	→	Double Click
↙	↓	↘	Enter
0 INS Button Lock		Button Release	
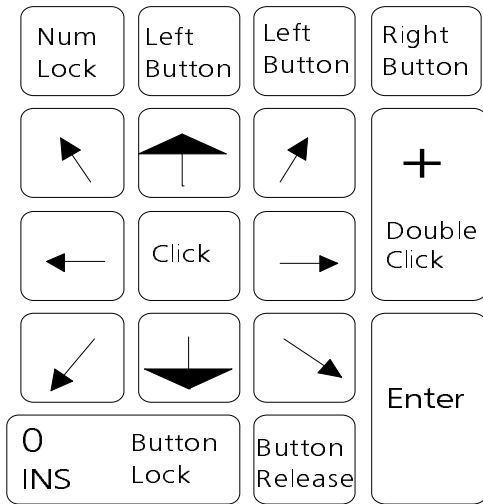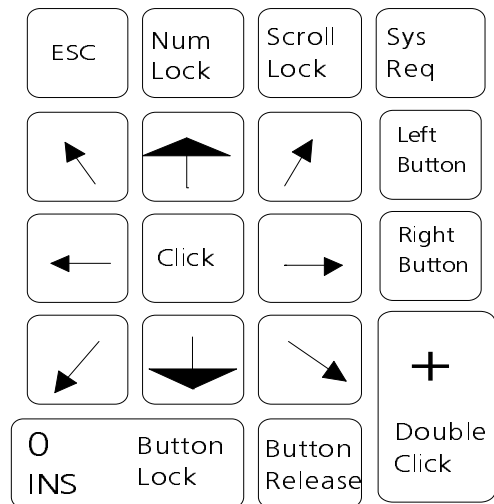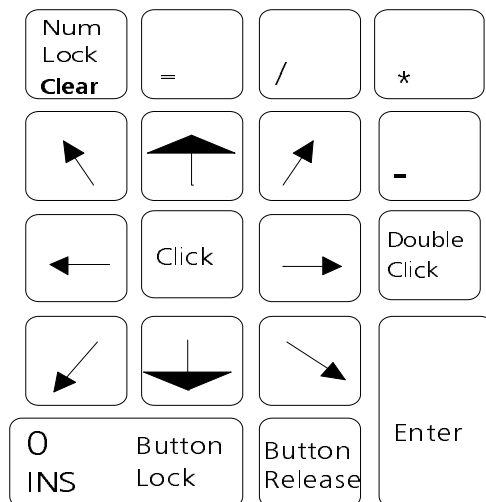
ToggleKeys

To turn **ToggleKeys ON/OFF**, press and hold the <NUM LOCK> key (<CLEAR> on Macintosh) for about 5 seconds. You hear an up-siren when ToggleKeys becomes active. To turn ToggleKeys off, press and hold the <NUM LOCK> key again for 5 seconds. You hear a down siren which lets you know that ToggleKeys is off.

Once ToggleKeys is active, when you press the <CAPS LOCK>, <NUM LOCK> or <SCROLL LOCK> keys, you hear a single high beep. This indicates that the key you pressed is **locked On**.

If you press the same key again, you hear a single low beep. This tells you that you have turned the key **Off**.

These beeps mimic the <CAPS LOCK>, <NUM LOCK> and <SCROLL LOCK> lights that are on many newer keyboards. A single high beep means the light is on and the key is locked. A single low beep means the light is off and the key has been unlocked.

ToggleKeys also functions with most keyboards that do not have the small lights that indicate the status of the <CAPS LOCK>, <NUM LOCK>, and <SCROLL LOCK> keys.

Troubleshooting Hints for
Keyboard Adjustment Features

General

Problem: When the T-TAM is first turned on, the keyboard adjustments seem to change. For example, StickeyKeys requires 6 taps on the SHIFT key instead of 5 to turn it on.

Answer: After you turn the T-TAM On or reboot the computer, the first key you tap is a signal to the T-TAM that you are ready. This first key tap **cannot** be used to turn on any of the T-TAM adjustments.

Problem: When you type on the keyboard, nothing appears on your computer screen and a ' click' sound is heard each time you tap a key.

Answer: SlowKeys is active. SlowKeys can make the keyboard appear to be "broken". When SlowKeys is active, you must hold a key down for a specified amount of time before the keystroke is sent to the computer. Follow the SlowKeys turn-off procedure on page 75 to return your keyboard to normal operation.

Problem: The Number Keypad keys do not function.

Answer: When MouseKeys is turned On, the Number Keypad on your keyboard controls your mouse and will no longer function as a Number Keypad.

Problem: The DELETE key on the number keypad will not work when you use it to re-boot your computer.

Answer: MouseKeys is active so you will not be able to use the DELETE key (IBM only) on the Number Keypad. To re-boot your computer you will have to turn MouseKeys Off.

T-TAM Adjustment Program

Problem: After the "T-TAM Adjustment" program is called up, unknown characters appear on your computer screen.

Answer: A StickeyKeys modifier key (CONTROL, ALTERNATE [OPTION], SHIFT), or the CAPS LOCK key may be pressed down. Make sure all modifier keys are Off and release the CAPS LOCK key before calling up the "T-TAM Adjustment" program.

Problem: The "T-TAM Adjustment" program does not accept your number answers even though you'v e used the correct values of 0 through 6.

Answer: The "T-TAM Adjustment" program only accepts numbers from the standard **keyboard** as correct answers. You may **not** use Number Keypad numbers or a Communication Aid to type your answers.

Problem: While running the "T-Tam Adjustment" program, you accidentally press the RETURN key before you have completed all the questions. When the program terminated, you heard a down siren which indicated that all the questions had been answered properly. What does this mean?

Answer: If you press RETURN by mistake, the T-TAM stores the answers you have already entered. Values do not change for those questions you didn' t answer.

This feature also provides you with a shortcut when you don' t want to change all the keyboard adjustments. For example, if you only want to change the value for the amount of time a key must be held down on the keyboard before it is accepted (Acceptance Delay of SlowKeys), you would only have to answer the first question of SlowKeys. You could then enter RETURN as the next answer.

There is NO short cut for answering the "T-TAM Adjustment Program" questions out of order. If you only want to change the speed of the mouse (question #4), you MUST answer questions #1, 2 and 3 first.

StickeyKeys

Problem: StickeyKeys will not turn On or Off.

Answer: When you tap the SHIFT key 5 times, you are either moving or bumping the mouse. This causes the T-TAM to restart the count on the SHIFT key. Do not move or bump the mouse.

Answer: The T-TAM thinks a modifier key (CONTROL, ALTERNATE [OPTION and COMMAND for Apple computers], or SHIFT) is still down. Tap each modifier key at least once and then try again to turn StickeyKeys On/Off.

Problem: You have turned StickeyKeys On, but find that it turns itself Off each time you tap a key.

Answer: StickeyKeys disables itself (turn itself Off) if you are capable of holding a modifier key and a non-modifier key at the same time. Modifier keys include SHIFT, CONTROL, ALTERNATE, OPTION, and COMMAND. Make sure you are not accidentally tapping two keys at the same time. (**Note:** You can disable this part of StickeyKeys with Question #7 in the "T-TAM Adjustment Program".)

Answer: The T-TAM thinks a modifier key is still down. Modifier keys include SHIFT, CONTROL, ALTERNATE, OPTION, and COMMAND. Tap each modifier key at least once and then try again to turn StickeyKeys On/Off.

SlowKeys and Repeat Keys

Problem: While you are operating in User Setup Option 1 or User Setup Option 2 using SlowKeys, you bring up the "T-TAM Adjustment " program. You make changes in the Acceptance Delay and the Repeat Key delay. When you exit the "T-TAM Adjustment" program, you hear the down-siren which indicates that your answers were accepted. However, when you continue to operate in User Setup Option 1, there is no change in the acceptance delay or repeat key delay on your keyboard.

Answer: User Setup Option 1 and User Setup Option 2 have fixed settings and will not allow you to change them. If you change the settings in the "T-TAM Adjustment" program while you are in User Setup Option 1 or 2, then you must EXIT the Setup Option and turn regular SlowKeys on again before you use the keyboard with the new settings.

MouseKeys

Problem: MouseKeys turns On but nothing happens.

Answer: On IBM computers, standard software (usually called a mouse driver, i.e. "mouse.sys" or "mouse.com"), must be installed and running on the computer for MouseKeys to function properly.

   When connected to an Apple computer, the mouse should be connected to one end of the keyboard while the other end of the keyboard is connected to the T-TAM. MouseKeys functions on the Apple Macintosh computer even if a physical mouse is not attached to the keyboard, but we do not recommend operating the computer this way.

Problem: MouseKeys is On and when you tap a mouse direction or mouse action key a ' click' is heard, but nothing happens.

Answer: SlowKeys is active. SlowKeys delays the initial actions of the mouse pointer because SlowKeys waits for a key to be pressed down for a specified amount of time. You can turn SlowKeys Off; you can shorten the amount of time a key must be held down; or you can leave SlowKeys On and hold the key down for the correct amount of time to get a mouse key response.

Answer: The software which is supplied with the mouse is not installed or running properly.

Problem: MouseKeys will not turn On.

Answer: On an IBM computer, you must have a PS/2 mouse port and the cable must be connected as described on page 15-17.

User Hints for the IBM
Space Saving Keyboard

An IBM PS/2 Model 25/30 has a **Space Saving Keyboard** with 84 keys on its keyboard. When you use this keyboard, you must make minor changes in the key activation sequences for some of the keyboard/mouse adjustment features of the T-TAM. The Space Saving Keyboard can be more difficult to use because you have to make these keyboard adjustments.

The Space Saving Keyboard combines the NUM LOCK and the SCROLL LOCK keys into one key location on the keyboard. It also does not have a separate Number Keypad.

To toggle the NUM LOCK key when you are using the Space Saving keyboard, you must press the SHIFT key, then press the NUM LOCK/SCROLL LOCK key.

When the NUM LOCK key is toggled On, the standard Number Keypad keys are located among the regular character keys on the keyboard. For example, when NUM LOCK is toggled On, the "j", "k" and "l" character keys become the "1", "2" and "3" Number Keypad keys. Also, the standard RETURN key functions like the Number Keypad ENTER key

When you are using the IBM Space Saving Keyboard, you must make the following changes to turn the Keyboard Adjustment features on or off.

StickeyKeys: 5 taps on the SHIFT key still turns StickeyKeys On/Off.

SlowKeys and RepeatKeys: The NUM LOCK key must be toggled **Off** to make the RETURN key available. (When NUM LOCK is on, the REUTRN key becomes an ENTER key.) Press and hold the RETURN key 8 seconds to turn SlowKeys/RepeatKeys On/Off.

MouseKeys: The NUM LOCK key **must** be the *third* key of the ' Turn On Sequence' for MouseKeys. .(i.e., LEFT SHIFT, LEFT ALTERNATE, NUM LOCK.) The Space Saving keyboard requires that you press the SHIFT key *before* pressing the NUM LOCK key. If you cannot press and hold multiple keys at the same time, use the steps below:

1. Turn StickeyKeys On (5 taps on the SHIFT key)
2. Tap the SHIFT key once
3. Tap the NUM LOCK/SCROLL LOCK key (this toggles NUM LOCK On.)
4. Tap LEFT SHIFT, LEFT ALTERNATE, NUM LOCK

Once MouseKeys is On, the Number Keypad keys perform all the mouse functions, but you lose the use of the character keys that the Number Keypad keys overlay.

ToggleKeys: ToggleKeys is activated by pressing and holding the NUM LOCK key for 5 seconds. The Space Saving keyboard requires that you press the SHIFT key *before* pressing the NUM LOCK key. If you cannot press and hold multiple keys at the same time follow the steps below:

1. Turn StickeyKeys On (5 taps on the SHIFT key).
2. Tap the SHIFT key TWICE (to lock the SHIFT key).
3. Press and hold the NUM LOCK key until ToggleKeys turns On/Off.
4. Tap the SHIFT key ONCE to unlock it.

Determine if Your Communication or Control Aid Will Work With the T-TAM

If you are using a Light Talker, Touch Talker, Liberator or AlphaTalker, do not worry about these guidelines. These devices are compatible with the T-TAM.

Guidelines:

In general, any communication aid which meets the following criteria can be used with the T-TAM:

1. The aid must have an RS-232 serial port capable of sending ASCII characters at 300 or 1200 baud. (This port will be connected to the serial port on the T-TAM to enable the two devices to communicate with each other.)

2. Your aid must allow you to program strings of characters, including CONTROL characters into the aid and send them out the serial port immediately. Read the manual for your aid to learn how t o set the Serial Port.

3. You must have a T-TAM RS-232 Serial Connector cable: 25 Pin female D Connector with the following cable wiring specifications:

    Pin 2   receives data input (input to T-TAM)

    Pin 3   transmits data (output from T-TAM)

    Pin 4   RTS handshaking line (input to T-TAM)

    Pin 5   CTS handshaking line (output from T-TAM)

    Pin 6   DSR handshaking line (always high output from T-TAM)

    Pin 7   ground

5. In order for your aid to talk with the T-TAM, the aid must be configured to transmit characters at 300 or 1200 baud with the following format:

    Baud Rate : 300 or 1200
    8 data bits
    1 or 2 stop bits
    no parity

    Your manual should tell you how to configure your aid in this manner. If there is nothing in your manual like this, assume that your aid is configured correctly.

    RS-232 Device Type: Data Communications Equipment (DCE)

Appendix A
IBM & Apple/Macintosh Keyboard Key Names

On the following pages, the keys for IBM computers and Apple/Macintosh computers are shown. Underneath each key, you will find the special computer command you should store in your communication aid. Storing these commands in your device lets you send that computer keystroke to the computer.

Remember:

When using a modifier key such as <CTRL>, <ALT>, <OPTION>, <SHIFT> or <COMMAND>, typing the word "hold" in front of the key name causes the key to be held until one additional character is entered.

Typing the word "combine" in front of the key name lets you combine several modifier keys.

For example:

<**esc**>,hold,shift.   causes the shift key to be held until an additional letter is entered.

<**esc**>,combine,command,shift. causes both the command and shift keys to be held until an additional letter is entered.

Computer Commands for Keyboard Emulation

Use the following commands when you are doing keyboard emulation for IBM Keyboards and Keypads

Create the <esc> command that you see below by activating   CTRL[(Control left bracket) in your Toolbox. This sequence is shown as <esc> in all commands below. On your display you will see a small left arrow.

IBM Keyboard Keys

<esc>backspace.	<esc>f5.	<esc>pagedown.
<esc>capslock.	<esc>f6.	<esc>pageup.
<esc>delete.	<esc>f7.	<esc>pause.
<esc>down.	<esc>f8.	<esc>print.
<esc>end.	<esc>f9.	<esc>right.
<esc>enter.	<esc>f10.	<esc>scroll.
<esc>esc.	<esc>f11.	<esc>tab.
<esc>f1.	<esc>f12.	<esc>up.
<esc>f2.	<esc>home.	<esc>,hold,alt.
<esc>f3.	<esc>insert.	<esc>,hold,control.
<esc>f4.	<esc>left.	<esc>,hold,shift.

Specify a right or left key by placing and "r" or an "l" in front of the key name. For example,

To hold the *left shift key*: <esc>,hold,lshift.

IBM Keypad Keys

<esc>kp0.
<esc>kp1.
<esc>kp2.
<esc>kp3.
<esc>kp4.
<esc>kp5.
<esc>kp6.
<esc>kp7.
<esc>kp8.
<esc>kp9.
<esc>kpdel.
<esc>kpdown.
<esc>kpend.
<esc>kpenter.

<esc>kpins.
<esc>kpleft.
<esc>kpminus.
<esc>kppgdn.
<esc>kpplus.
<esc>kpright.
<esc>kpslash.
<esc>kpstar.
<esc>kpup.
<esc>kpnumlock.
<esc>sysreq.

<esc>kphome.

Computer Commands For Apple/Macintosh Computer Keyboards and Keypads

Create the <esc> command that you see below by activating CTRL[(Control left bracket) in your Toolbox. This sequence is shown as <esc> in all commands below. On your display you will see a small left arrow.

If you are using an AlphaTalker, you can select <esc> from the MTI+ emulation menu.

Apple/Macintosh Keyboard Keys

<esc>backspace.	<esc>f9.	<esc>pause.
<esc>capslock.	<esc>f10.	<esc>print.
<esc>delete.	<esc>f11.	<esc>return.
<esc>end.	<esc>f12.	<esc>right.
<esc>esc.	<esc>f13.	<esc>scroll.
<esc>f1.	<esc>f14.	<esc>tab.
<esc>f2.	<esc>f 15.	<esc>up.
<esc>f3.	<esc>help.	<esc>,hold,command.
<esc>f4.	<esc>home.	<esc>,hold,control.
<esc>f5.	<esc>insert.	<esc>,hold,option.
<esc>f6.	<esc>left.	<esc>,hold,shift.
<esc>f7.	<esc>pagedown.	<esc>,hold,alt.
<esc>f8.	<esc>pageup.	

Specify a right or left key by placing an "r" or an "l" in front of the key name. For example,

To hold the *left shift key*: <esc>,hold,lshift.

Apple/Macintosh Keypad Keys

<esc>kp0.
<esc>kp1.
<esc>kp2.
<esc>kp3.
<esc>kp4.
<esc>kp5.
<esc>kp6.
<esc>kp7.
<esc>kp8.
<esc>kp9.
<esc>clear.
<esc>kpdel.
<esc>kpdown.
<esc>kpend.
<esc>kpenter.
<esc>kpequal.
<esc>kphome.
<esc>kpins.
<esc>kpleft.
<esc>kpminus.
<esc>kppd.
<esc>kppgdn.
<esc>kppgup.
<esc>kpplus.
<esc>kpright.
<esc>kpslash.
<esc>kpstar.
<esc>kpup.
<esc>numlock.
<esc>reset.

On the following pages, the commands for **mouse cursor movements** and mouse button keys are shown. Each emulator command is given along with the action it does on the computer.

Mouse Button Commands

Emulator Command	Mouse Button Action
<**esc**>,click.	Clicks only button on Apple/Macintosh and left button on IBM
<**esc**>,click,right.	Clicks right button of 2 button mouse
<**esc**>,click,left.	Clicks left button of 2 button mouse
<**esc**>,dblclick.	Double clicks only button on Apple/Mac and left button on IBM
<**esc**>,dblclick,right.	Double clicks right button of 2 button mouse
<**esc**>,dblclick,left.	Double clicks left button of 3 button mouse
<**esc**>,moulock.	Locks only button on Apple/Mac and left button on IBM
<**esc**>,moulock,right.	Locks right button of 2 button mouse
<**esc**>,moulock,left.	Locks left button of 2 button mouse
<**esc**>,mourel.	Releases all mouse buttons that were locked
<**esc**>,mourel,right.	Releases right button of 2 button mouse
<**esc**>,mourel,left.	Releases left button of 2 button mouse

Mouse Cursor Movement Commands

Move commands move the mouse cursor a *specific distance* on the screen.

Horizontal plus (+) values move the mouse to the right and **minus (-)** values move it to the left. **Vertical plus** (+) values move the mouse downward and **minus (-)** values move the mouse upward. The mouse moves **diagonally** when both a **horizontal and vertical** value are sent. The **first** value given is the **horizontal** value, the **second** is the **vertical** value.

The numbers in the example below tell the computer how far to move the mouse each time this command is used. Increase this number for larger distances, decrease it for shorter distances. The number may vary from 1 to 500.

Emulator Command	Mouse Cursor Movement You See on the Screen
<**esc**>,move,+5,0.	Moves the mouse cursor 5 pixels to the right.
<**esc**>,move,-5,0.	Moves the mouse cursor 5 pixels to the left
<**esc**>,move,0,+5.	Moves the mouse cursor 5 pixels down
<**esc**>,move,0,-5.	Moves the mouse cursor 5 pixels up
<**esc**>,move,+10,+10.	Moves the mouse cursor 10 pixels diagonally downward and right
<**esc**>,move,-10,+10.	Moves the mouse cursor 10 pixels diagonally downward and left
<**esc**>,move,-10,-10.	Moves the mouse cursor 10 pixels diagonally upward and left
<**esc**>,move, +10,-10.	Moves the mouse cursor 10 pixels diagonally upward and right

Mouse Reset

Emulator Command	Mouse Cursor Movement You See on the Screen
<**esc**>,moureset.	Resets the mouse and sends it to the upper left corner of the screen

GOTO commands send the mouse to an *assigned location* on the screen.

GOTO commands always start from the *upper left corner* of your screen and send the mouse to an assigned location.

The location is assigned by the numbers you enter in the command. The **first** value given is the **horizontal** value, the **second** is the **vertical** value. Since a GOTO command always starts from the upper left corner of the screen, it always uses **positive** numbers.

The numbers vary depending on where you want to send the mouse and the type of computer you are using. You need to experiment with your computer and mouse to determine where a specific set of numbers such as those in the example below will send the mouse.

Because GOTO commands start in the upper left corner of the screen, you need to use the *mouse reset command* as the first mouse command. This "calibrates" the mouse when the T-TAM and computer are first turned on.

Emulator Command	**Mouse Cursor Movement You See on the Screen**
<**esc**>,goto,+100,+150.	Moves the mouse to a specific location on the screen.
<**esc**>,moureset.	Resets the mouse and sends it to the upper left corner of the screen

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➲**Note:**

The GOTO command will not work correctly if you send the mouse past the edge of the screen.

The mouse speed in your computer must also be set to "tablet" or slow.

Reset the T-TAM

When the T-TAM receives a command or characters it cannot interpret, it emits an error beep. Sending a reset command will restart the T-TAM.

To Reset the T-TAM on Touch Talker or Light Talker

Follow the steps on page 31 for storing an emulator command . When your display reads **Ready to Spell**, enter the following sequence of keys:

1. Activate **CTRL** (location **I-8**) **@** (location **A-1**)
2. Activate **CTRL @**
3. Activate **CTRL @**
Your display shows three blanks.

To Reset the T-TAM on Liberator

Follow the steps for storing the emulator command using a One-Icon Theme on page 43. When the directions ask you to enter the <**esc**> sequence and the emulator command, enter the following sequence of keys instead:

1. Activate FUNCTION INSERT. Begin to spell ' Send' . When the tools menus appear, select ' Send-ASCII-char.' Select 0 (zero). Activate ENTER.

2. Activate FUNCTION INSERT. Begin to spell ' Send' . When the tools menus appear, select ' Send-ASCII-char.' Select 0 (zero). Activate ENTER.

3. Activate FUNCTION INSERT. Begin to spell ' Send' . When the tools menus appear, select ' Send-ASCII-char.' Select 0 (zero). Activate ENTER.

Your display should include this string of text:

Send-ASCII-Char (0)Send-ASCII-Char (0)Send-ASCII-Char (0)

To Reset the T-TAM on DeltaTalker

Follow the steps for storing the emulator command in a Theme on pages 55-56. When the display reads Spell Text to Store-Then Select Store, enter the following sequence of keys.

1. Activate CTRL Activate @
2. Activate CTRL Activate @
3. Activate CTRL Activate @

Your display shows three blanks.

To Reset the T-TAM on AlphaTalker or AlphaTalker II

Follow the steps for creating a keyboard emulation file on page 67. Move the cursor to an empty square and complete the following steps:

1. On a Macintosh, press and hold the COMMAND key, press the 2(@) key. Repeat this process 2 more times. Three blank spaces will appear on the display screen on your computer.

2. On the IBM, press and hold the CTRL key, press the 2(@) key. Repeat this process 2 more times. Three blank spaces will appear on the display screen on your computer.