Pointmaker® PVI-73

Multiple-Sync Video Marker

User's Manual

P/N 700053 0897-50

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Section One:
Getting Started

INTRODUCTION

The ***Pointmaker*® *PVI-73* multiple-sync video marker**, by Boeckeler Instruments, Inc., is an innovative video components that allow users to draw and direct arrows or other pointers over a variety of video and computer images. The ***Pointmaker*** video marker is a visual aid for group discussion, allowing presenters to quickly and easily annotate areas of interest on monitors or displays used in boardrooms, classrooms, sports or weather broadcasts, videoconferences, courtrooms and more. Video systems utilizing a video recorder or video printer can record both the image and the ***Pointmaker*** markers for future presentations.

Drawing lines and pointers are controlled by the user during a presentation through the use of one or more controllers. Compatible devices include the light pen (**PVI-73L**) and digitizing tablet (**PVI-73D**). The **PVI-73** is also compatible with a mouse pen, certain touch screens, some remote pointing devices, and other mouse devices.

The ***Pointmaker*** offers several simple-to-use graphics, called ***markers***. There are two types of markers with which to annotate a video image. These are ***pointers*** and ***drawn lines*** . Among the 12 pointers available, there is a selection of 8 ***arrows***, each oriented at a different angle; 2 ***dot pointers***, small and large; and 2 ***cross hairs pointers***, small and large. Of course, there is an option to display no pointer at all. The second marking capability is drawing. Users can select to draw in 1 of 3 different ***line thicknesses***, with or without ***drop shadows***. Pointers and drawn lines may be used in combination to annotate the image.

For additional presentation impact, one of ***7 colors*** may be applied to each marker. For example, a green circle can be displayed with red arrows and a yellow cross hairs pointer. And, if a video image is not desired, presenters may quickly call up a solid ***background*** on the screen and use it like a chalkboard on which to make notes.

As easily as the markers are created, so are they easily ***erased*,** either one at a time until the screen is ***clear***, or all at once.

The ***Pointmaker* PVI-73** has ***multiple scanning capabilities***, making it compatible with many common video standards found in video and computer products. This model can be used with monochrome EIA RS-170, composite NTSC, RGB, Y/C (S-Video), VGA and Macintosh sources and displays. Scan rate compatibility ranges from 15.75 kHz to most SVGA scan rates up to 71.7 kHz. Most Macintosh scan rates are also handled, up to 48 kHz. The **PVI-73** can handle **horizontal and vertical syncs** that are either **composite** or **separate**.

Export models are available for use with CCIR and PAL video standards. Components required to use the standard ***Pointmaker* PVI-73** are listed in *Figure **1.1*** below.

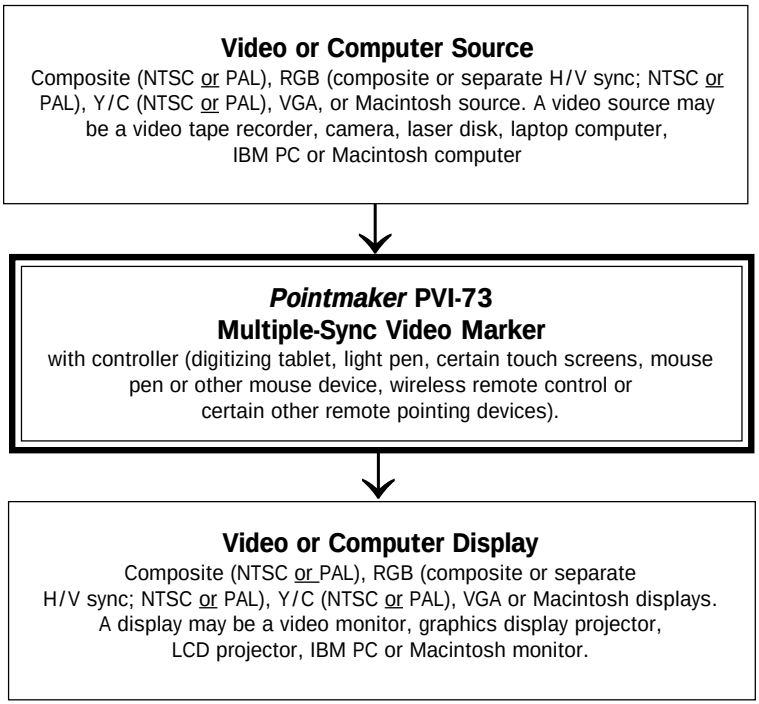

*Figure **1.1***
General System Configuration

FEATURES

VIDEO MARKER

- **Freehand drawing** mode in three different line thicknesses; fine, medium and bold, with or without a drop shadow.

- **Pointers** including arrows, dots and cross hairs, which may be moved or anchored anywhere on the screen. Arrows may be preset to point in one of 8 different angles. Dots and cross hairs may be pre-selected in a small or large size.

- The ability to **position and anchor** a combination of several pointers and drawings on the screen at once.

- Options for **clearing lines and pointers** from an overlay all at once or one at a time, beginning with the most recently anchored marker.

- Ability to **attribute a different color to each marker** on the screen. Up to 7 different colors are available for quick access. The color palette can be minimized by presetting selections in a palette menu.

- A **drop shadow** effect may be selected to further optimize the display of drawn lines.

- A **multiple scanning capability** that allows use with NTSC composite, RGB, Y/C (S-Video), or VGA systems with scan rates between 15.75 kHz and 38 kHz. The **PVI-73** additionally features compatibility with SVGA equipment with scan rates up to 71.7 kHz, and Macintosh equipment with scan rates up to 48 kHz. PC compatibility includes many nonstandard video scan rates in Windows '95®.

- **Template Choice** feature in the **PVI-73D** with digitizing tablet allows users to choose between a "Presenter" template with its greater variety of setup icons, or the streamlined "Broadcaster" template suitable for on-air use.

(continued)

- **Sync generation** allows the ***Pointmaker*** to automatically select the sync if no live video is desired. Instead of a live image, a solid **background** appears, ready to be used as one would use a chalk-board.

- **A Setup Menu** provides an easy means to make presentation style selections before the presentation. The menu offers pointer type, background, color palette, brightness levels, a help menu and controller calibration (needed by some controllers to optimize use).

- **Pen Proximity** feature in the **PVI-73D** with digitizing tablet and **PVI-73L** with light pen allows users to determine what happens to the active pointer as the pen is moved away from the tablet or screen. The pointer can be made to disappear as the pen is pulled away, or to remain on the video image, ready for positioning.

- **Brightness adjustment**, selected from the ***Setup Menu,*** gives users the opportunity to set the brightness of the ***Pointmaker*** markers to coincide with the brightness level of the video signal, so that the markers are displayed optimally for standard video or for professional broadcasting.

- **Onscreen Help** to assist presenters with quickly setting up their presentation.

- **A/V programmable** so that A/V remote control systems can control the ***Pointmaker*** using commands supplied in this manual.

- The **PVI-73** is designed for use in **videoconferencing**, so that when two units are installed (with linked codecs, for example), both ends can view and write over a shared image.

COMPONENTS

DIGITIZING TABLET (PVI-73D)

The ***Pointmaker*** **DT-30 digitizing tablet** (refer to *Figure **1.2***) is sold separately by Boeckeler Instruments, Inc., or comes standard with **PVI-73D** model. In general, the tablet is used to draw, position pointers or make menu selections by converting the position and movements of the stylus into digital information that is represented on the monitor or screen. Additionally, most setup choices can be made by pressing a tablet icon (rather than entering an on screen setup menu). *NOTE: Setup choices will not be available on the tablet if the Broadcaster template was selected in the Setup Menu. The Broadcaster template is designed especially for on-air use, so that users won't inadvertently change setup features while presenting. Refer to page 64 for details.*

The broad definition of the two areas (or zones) on the tablet, and the two buttons on the stylus are listed below. Refer to this section, if needed, when general instructions later in the manual ask users to make setup selections, to position or anchor a pointer, to draw or to move a cursor.

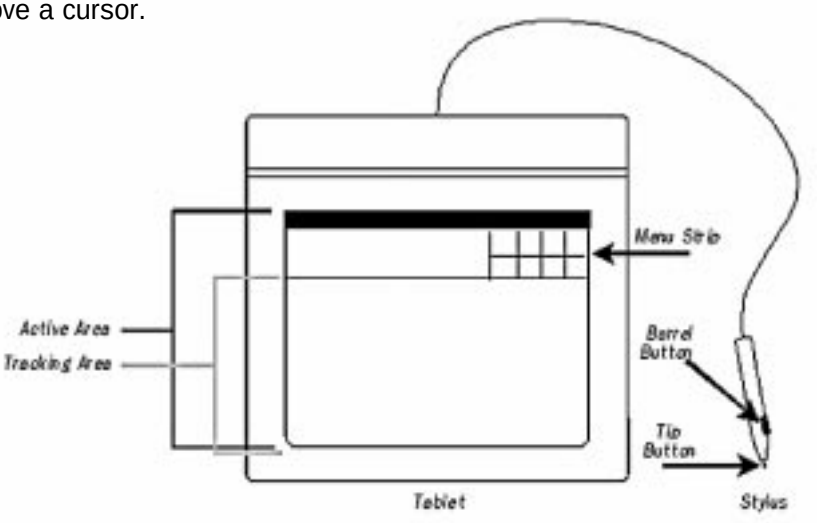

*Figure **1.2***
Pointmaker **Digitizing Tablet**

ACTIVE AREA The maximum area on the ***Pointmaker*** digitizing tablet that responds to the stylus. This area measures 5" x 5" and includes the *Menu Strip*, as well as the *Tracking Area*.

TRACKING AREA The region within the tablet's *Active Area* that responds to the stylus movements. The *Tracking Area* corresponds to the screen area on the monitor or display. ***Pointmaker*** users draw and point with the stylus in the *Tracking Area*.

MENU STRIP The icons (or options) at the top of the *Active Area* which are pressed to change video standards, select pointer type, erase or clear markers, or to change marker colors. On the Presenter template, additional icons include those for selecting background, brightness, and line style. The Broadcaster template includes a Proximity toggle. When activated, the active pointer will disappear each time the pen is lifted from the *Tracking Area*.

TIP BUTTON When pressed on a *Menu Strip* icon, the *Tip Button* activates that icon's function. When the *Tip Button* is pressed anywhere on the *Tracking Area* and dragged, pointing or drawing takes place (depending on whether a pointer icon or line style icon was selected). The *Tip Button* is used in combination with the *Barrel Button* to access the ***Setup Menu*** from which to make selections not available in the *Menu Strip*.

BARREL BUTTON When *clicked*, this button anchors the active pointer, if a pointer is displayed. The *Barrel Button* is also used in combination with the *Tip Button* to call up the ***Setup Menu*** .

Marker and Cursor Movement

Unlike a mouse controller, a tablet allows users to make their drawings and place pointers with *absolute* positioning. This means that the position of the stylus on the tablet surface corresponds directly to the position of the pointer, drawn line or cursor on the screen. If you place the stylus in the lower-left corner of the tablet, the cursor moves to the lower-left corner of the screen. Absolute positioning may take a few moments to adjust to if presenters have never used a tablet.

LIGHT PEN (PVI-73L)

The ***Pointmaker* LP-32 light pen controller** (refer to *Figure **1.3***) is sold separately by Boeckeler Instruments, or comes standard with **PVI-73(L)** model. The light pen functions as a primary interface with the ***Pointmaker***. In general, the pen is used like a writing utensil when it is drawn against the screen to position pointers or to draw. The broad definitions of the two buttons on the light pen controller are listed below. Refer to this section, if needed, when general instructions later in the manual ask users to position or anchor a pointer, to draw or to position a cursor.

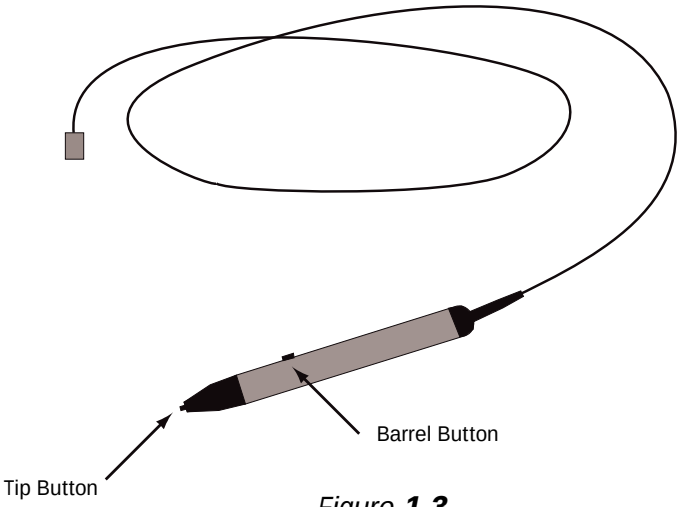

*Figure **1.3***
***Pointmaker* Light Pen Controller**

TIP BUTTON

The *Tip Button* positions active (positionable) pointers when lightly traced across the screen of the monitor. Pointers are anchored by pressing the tip button into the screen and releasing. Freehand drawing is accomplished when the *Tip Button* is pressed into the screen and "drawn" across the screen much like a writing utensil. The *Tip Button* is used in combination with the *Barrel Button* to change the color of a marker or to access the ***Setup Menu.***

BARREL BUTTON

When *clicked*, this button erases the most recently anchored marker. When *pressed*, this button clears the screen entirely of markers. The *Barrel Button* is also used in combination with the *Tip Button* to toggle through the color palette or call up the ***Setup Menu*** from which to make a variety of selections including pointer type, line style, color palette, brightness, background, hardware setup, help, or light pen calibration.

Marker and Cursor Movement

When operating the ***Pointmaker*** with the light pen controller, the cursor or active marker may be moved anywhere on the screen by moving the light pen across the screen as one would move a writing utensil. The pointer or drawing line will follow this movement at a specified offset. For example, "dragging" the pen to the left on the screen will correspondingly move the marker to the left on the screen. If the tip button is pressed into the screen while drawing to the left, the line will be drawn to the left.

Calibration of the light pen sets the margin (or offset) between the point that the light pen touches the screen and the point that drawing takes place. A greater margin or offset allows presenters to draw without obscuring the view with a hand or finger. Choosing no offset will assist users in predicting where a drawing line will begin. Users calibrate the light pen each time a new monitor or display is used. Calibration instructions are covered in ***Section Two****: Using the Markers;* "Calibrating Pointmaker Controllers."

TOUCH SCREEN (Elographics)

The ***Pointmaker* PVI-73** is engineered for use with some Elographics *AccuTouch*® and *IntelliTouch*® touch screen products sold by that manufacturer. The touch screen functions as a primary interface for the ***Pointmaker***. *We recommend that when using a touch screen, other controllers not be used (i.e., the light pen or ditigizing tablet).*

In general, the touch screen can be used to draw, position pointers or make menu selections by converting the position and pressure of the human finger into digital information that is represented on the screen. This detection is a result of the finger (or other energy-absorbing object) interrupting the touch screen's surface field of acoustic waves.

The broad definition of the areas (or zones) on the touch screen are listed below. Refer to this section (and *Figure* ***1.4***, if needed) when general instructions later in the manual ask users to make setup selections, to position or anchor a pointer, to draw or to move a cursor.

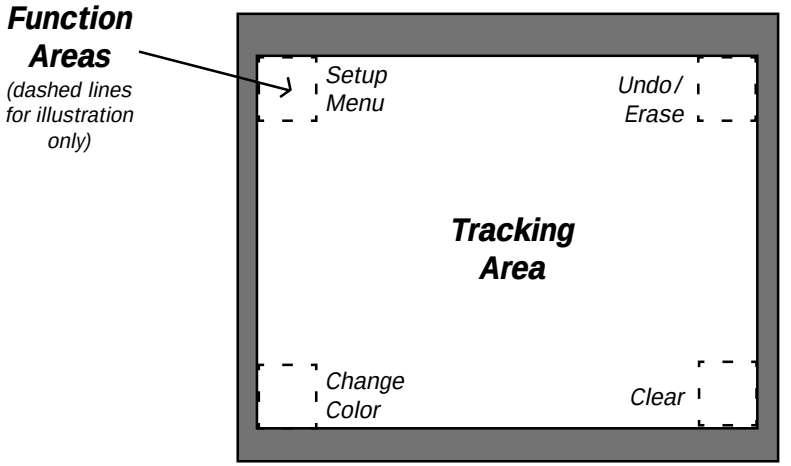

Figure ***1.4***
Elographics Touch screen when used with a *Pointmaker*

TRACKING AREA The area on the touch screen that responds to the movements of a human finger. Users draw and point in this Tracking *Area*.

FUNCTION AREAS The four corners on the touch screen that, when tapped, activate a function. Tapping the *upper left corner* calls up the ***Setup Menu*** from which to make a variety of selections including pointer type, line style, color palette, brightness, background, hardware setup or help. Tapping the *lower left corner* changes the color of the next pointer that will be displayed or next line to be drawn. Tapping the *lower right corner* clears the screen of all markers (drawn lines and pointers). Tapping the *upper right corner* will undo (erase) only the most recently anchored marker.

Marker and Cursor Movement

When operating the ***Pointmaker*** with an Elographics touch screen, the pointer will be displayed and anchored anytime a user taps the screen (unless the pointer is disabled in the ***Setup Menu***). Users cannot reposition a pointer on the touch screen; however, a pointer may be cleared or erased from the screen. Drawing takes place when users press a finger on the *Tracking Area* of the screen and draw. Menu selections are made by tapping the options in the menu that is displayed.

Calibrating the touch screen enhances the intuitive feel of drawing on the display. Users calibrate the touch screen upon the first installation and whenever a new touch screen or monitor is used. Calibration instructions are covered under *Controller Installation* in this section.

OTHER DRAWING DEVICES (general)

Several other drawing devices are compatible with the **PVI-73 *Pointmaker* video marker**. These include Microscoft® mouse controllers, mouse pens, and some wireless remote devices. These devices may be used like a writing utensil to draw, position pointers or move a cursor by "drawing" them across a mouse pad or (in the case of remote controls) in mid-air when aimed at the display. The broad definition of the two buttons on these type of mouse controllers are listed below. Refer to this section, if needed, when general instructions later in the manual ask users to position or anchor a pointer, to draw or to move a cursor.

LEFT BUTTON or **FIRST BUTTON** — When *clicked*, the *Left (or First) Button* anchors pointers on the screen at the point they were positioned. Freehand drawing is accomplished when the *Left Button* is pressed down while continuing to write or draw with the pen across a smooth surface (or in midair, in the case of a remote control). The *Left Button* is used in combination with the *Right (or Second) Button* to change the color of a marker or to access the ***Setup Menu***.

RIGHT BUTTON or **SECOND BUTTON** — When *clicked*, this button erases the most recently anchored marker. When *pressed*, this button clears the screen entirely of markers. The *Right (or Second) Button* is also used in combination with the *Left (or First) Button* to toggle

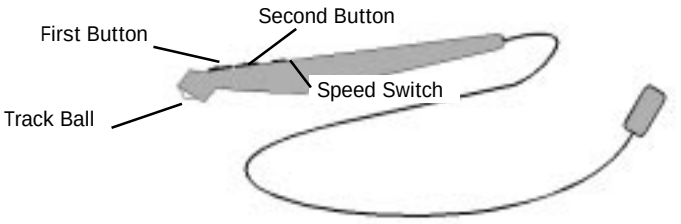

*Figure **1.5***
Mouse Pen Controller

through the color palette orcall up the ***Setup Menu*** from which to make avariety of selections including pointer type, line style, color palette, brightness, background, hardware setup or help.

TRACK BALL Moves the cursor or active pointer anywhere on the screen according to how the ball is rolled across a smooth surface.

SPEED SWITCH (mouse pen only) Switches the speed of the mouse pen's track ball from slow to fast.

Marker and Cursor Movement

When operating the ***Pointmaker*** with the mouse or remote control, the cursor or active marker may be moved anywhere on the screen by moving the mouse's *track ball* across a smooth surface, or by moving the remote control in midair. The active marker or cursor will move respectively. For example, "dragging" the mouse to the left on the mouse pad or aiming the remote control to the left of the remote receiver will correspondingly move the marker to the left on the screen. Directing the device to the right while drawing will draw a line to the right.

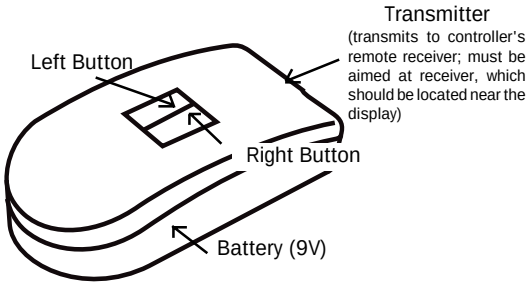

*Figure **1.6***
Wireless Remote Control

INSTALLATION

To install the *Pointmaker* with composite NTSC video sources and displays or composite PAL sources and displays:

1. **Make all connections before applying power**.

2. Video source connection (refer to *Figure **1.7***): :

   A. **Using a BNC cable, connect the *Pointmaker* NTSC IN connector to the video output connector on the video source** (e.g., VCR, camera, laser disk player, etc.).

   NOTE: *Only NTSC input to NTSC output on video source.*

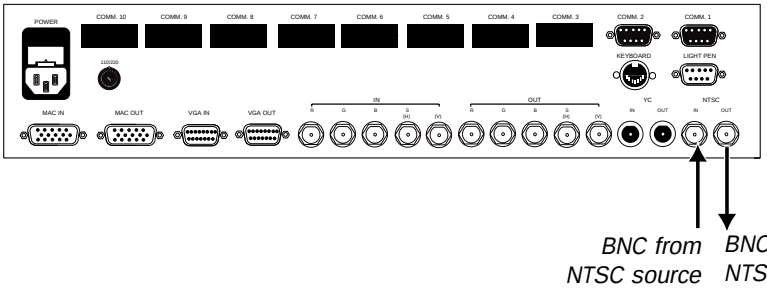

*Figure **1.7***
Back Panel, *Pointmaker*
NTSC connections

3. Monitor/display connection (refer to *Figure **1.7***):

   A. **Using a second BNC cable, connect the *Pointmaker* NTSC OUT connector to the video input connector on the video display** (e.g., monitor, projector, etc.).

   NOTE: *Only connect NTSC output to NTSC input.*

NOTE: *On power up, the* ***Pointmaker*** *will automatically sync with the installed monitor or display. If a different display will be used during a presentation, turn off the* ***Pointmaker****, connect the new monitor, then power up.*

4. **Install the appropriate controller for the *Pointmaker*** (digitizing tablet, light pen, touch screen, remote control or other mouse device).

   NOTE: *Detailed installation instructions for each controller are featured at the end of this chapter. Controller installation is the same for any video standard.*

5. Power supply:

   A. **Ensure that the VOLTAGE SWITCH on the back of the *Pointmaker* is in the proper position to coincide with the power source** (refer to *Figure* ***1.7***).

   B. **Plug the power cord into the back of the *Pointmaker* and then into any grounded outlet** (refer to *Figure* ***1.7***).

   C. **Plug the video source and monitor power cords into any grounded outlet**.

   D. **Turn on the video source and monitor and then press the power button on the front panel of the *Pointmaker*** (an indicator light will be displayed to signify that power is on).

   NOTE: *In order for the* ***Pointmaker*** *to properly sync with the video signal, the video source should be turned on first.*

   E. For the wireless remote control, be sure to also **turn on the remote receiver** if a power switch is present (some versions of the remote receiver do not have power switches).

   After a moment, the monitor will display a video image. A copyright message will briefly appear. If this is not properly displayed, recheck the installation or call Boeckeler Instruments for assistance at (800) 552-2262 or (520)745-0001.

To install the *Pointmaker* with Y/C or S-Video (NTSC or PAL) sources and monitors (refer to *Figure 1.8*)

1. Make all connections before applying power.

2. Video source connection:

   A. **Using a 4-pin mini din cable (S-video cable), connect the *Pointmaker* Y/C IN connector to the video output connector on the video source** (e.g., VCR, camera, laser disk player, etc.).

   NOTE: *Only connect Y/C input to Y/C output.*

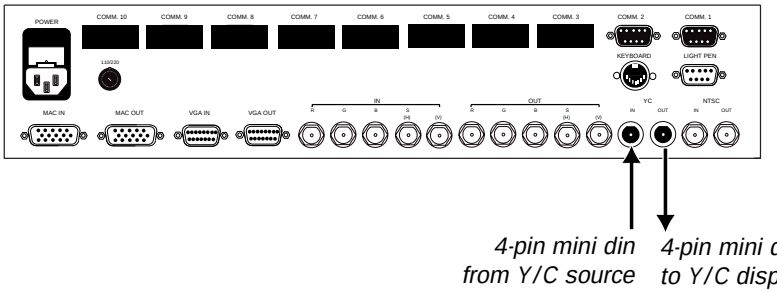

*Figure **1.8***
Back Panel, *Pointmaker* for Y/C (S-Video) connections

3. Monitor/display connection:

   A. **Using a second 4-pin mini din cable, connect the *Pointmaker* Y/C OUT connector to the video input connector on the video display** (e.g., monitor, projector, etc.).

   NOTE: Only connect Y/C output to Y/C input.

   NOTE: *On power up, the **Pointmaker** will automatically sync with the installed monitor or display. If a different display will be used during a presentation, turn off the **Pointmaker**, connect the new display then power up.*

4. **Install appropriate controller for *Pointmaker*** (digitizing tablet, light pen, touch screen, remote control, or other mouse device).

   NOTE: *Detailed installation instructions for each controller are featured at the end of this chapter. Controller installation is the same for any video standard.*

5. Power supply:

   A. **Ensure that the VOLTAGE switch on the back of the *Pointmaker* is in the proper position to coincide with the power source** (refer to *Figure **1.8***).

   B. **Plug the power cord into the back of the *Pointmaker* and then into any grounded outlet** (refer to *Figure **1.8***).

   C. **Plug the video source and monitor power cords into any grounded outlet**.

   D. For the wireless remote control, be sure to additionally **plug the remote receiver power cord into any grounded outlet**.

   E. **Turn on the video source and monitor and then press the power button on the front panel of the *Pointmaker*** (an indicator light will be displayed to signify that power is on).

   NOTE: *In order for the **Pointmaker** to properly sync with the video signal, the video source should be turned on first.*

   F. For the wireless remote control, be sure to also **turn on the remote receiver** if a power switch is present (some versions of the remote receiver do not have power switches).

   After a moment, the monitor will display a video image. A copyright message will briefly appear. If this is not properly displayed, recheck the installation or call Boeckeler Instruments for assistance at (800) 552-2262 or (520)573-7100.

To install the *Pointmaker* with RGB (NTSC or PAL) sources and displays:

1. Make all connections before applying power.

2. Video source connection for RGB systems with composite sync (refer to *Figure* ***1.9***):

   A. **Using an RGB and sync cable (or 4 BNC cables), connect the three *Pointmaker* RGB IN connectors to the corresponding RGB output connectors on the video source** (e.g., VCR, camera, laser disk player, etc.).

   B. **Connect the *Pointmaker* SYNC IN connector to the sync output connector on the video source.**

   NOTE: *Only connect RGB input to RGB output.*

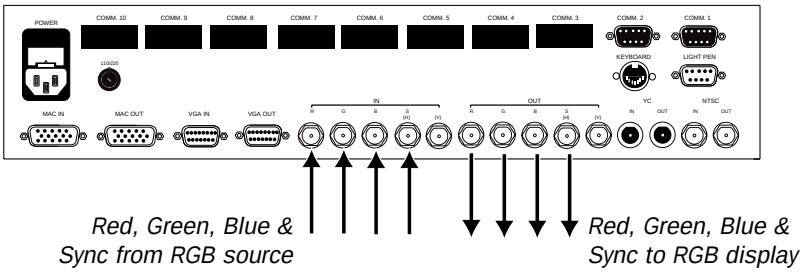

Figure ***1.9***
Back Panel, *Pointmaker* for RGB connections (composite sync)

3. Monitor/display connections for RGB systems with composite sync:

   A. **Using an RGB and sync cable (or four BNC cables), connect the four *Pointmaker* RGB/SYNC OUT connectors to the corresponding RGB/SYNC input connectors on the video display** (e.g., monitor, projector, etc.).

   NOTE: *Only connect RGB output to RGB input.*

NOTE: *On power up, the* ***Pointmaker*** *will automatically sync with the installed monitor. If a different monitor will be used during a presentation, turn off the* ***Pointmaker****, connect the new monitor, then power up.*

4. Video source connections for RGB H/V systems with separate horizontal and vertical sync (refer to *Figure* ***1.10***):

   A. **Using an RGB H/V cable, connect the red, green and blue *Pointmaker* RGB IN connectors to the corresponding RGB output connectors on the video source** (e.g., VCR, camera, laser disk player, etc.).

   B. **Connect the *Pointmaker* "H" IN (SYNC IN) connector to the horizontal output connector on the video source.**

   C. **Connect the *Pointmaker* "V" IN connector to the vertical output connector on the video source.**

   NOTE: *Only connect RGB H/V input to RGB H/V output.*

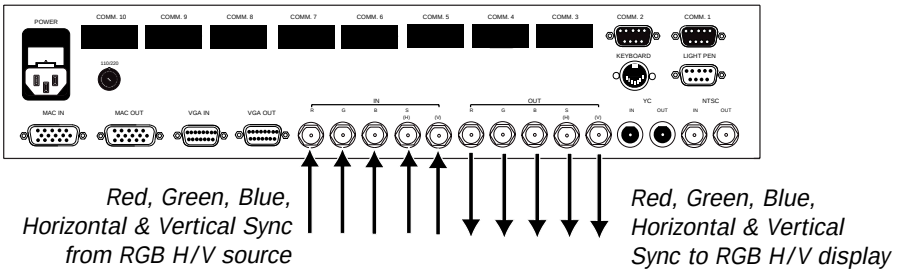

Figure ***1.10***
Back Panel, *Pointmaker* for RGB H/V connections

5. Monitor/display connections for RGB H/V(refer to *Figure* ***1.10***):

   A. **Using an RGB H/V cable, connect the red, green and blue *Pointmaker* RGB OUT connectors to the corresponding RGB input connectors on the video display** (e.g., monitor, projector).

B. **Connect the *Pointmaker* "H" OUT (SYNC OUT) connector to the horizontal input connector on the video display.**

C. **Connect the *Pointmaker* "V" OUT connector to the vertical input connector on the video display.**

NOTE: *Only connect RGB H/V output to RGB H/V input.*

NOTE: *On power up, the* ***Pointmaker*** *will automatically sync with the installed monitor. If a different monitor will be used during a presentation, turn off the* ***Pointmaker****, connect the new monitor, then power up.*

6. **Install the appropriate controller for *the Pointmaker*** (digitizing tablet,light pen, touch screen, remote control, or other mouse device).

   NOTE: *Detailed installation instructions for each controller are featured at the end of this chapter. Controller installation is the same for any video standard.*

7. Power supply:

   A. **Ensure that the VOLTAGE SWITCH on the back of the *Pointmaker* is in the proper position to coincide with the power source** (refer to *Figure* ***1.10***).

   B. **Plug the power cord into the back of the *Pointmaker* and then into any grounded outlet** (refer to *Figure* ***1.10***).

   C. **Plug the video source and monitor power cords into any grounded outlet**.

   D. For a wireless remote control, be sure to additionally **plug the remote receiver power cord into any grounded outlet**.

   E. **Turn on the video source and monitor and then press the power button on the front panel of the *Pointmaker*** (an indicator light will be displayed to signify that power is on).

NOTE: *In order for the* ***Pointmaker*** *to properly sync with the video signal, the video source should be turned on first.*

F. For the wireless remote control, be sure to also **turn on the remote receiver** if there is a power switch (some versions of the remote receiver do not have power switches).

After a moment, the monitor will display a video image. A copyright message will briefly appear. If this is not properly displayed, recheck the installation or call Boeckeler Instruments for assistance at (800) 552-2262 or (520)573-7100.

To install the *Pointmaker* with PC (VGA) or Macintosh sources and monitors (refer to *Figure 1.11*)

1. Make all connections before applying power.

2. VGA computer/monitor connections (for PC):

   A. **Connect the *Pointmaker* VGA IN connector (15-pin HD) to the monitor output port on the VGA computer**.

   B. **Connect the *Pointmaker* VGA OUT connector (15-pin HD) to the input connector on the VGA monitor.**

   NOTE: *The VGA connector on the **Pointmaker** features separate horizontal and vertical sync. If desired, VGA may be installed using the RGB H/V connectors (refer to instructions on page 20). Only connect VGA input to VGA output (or RGB H/V input to RGB H/V output).*

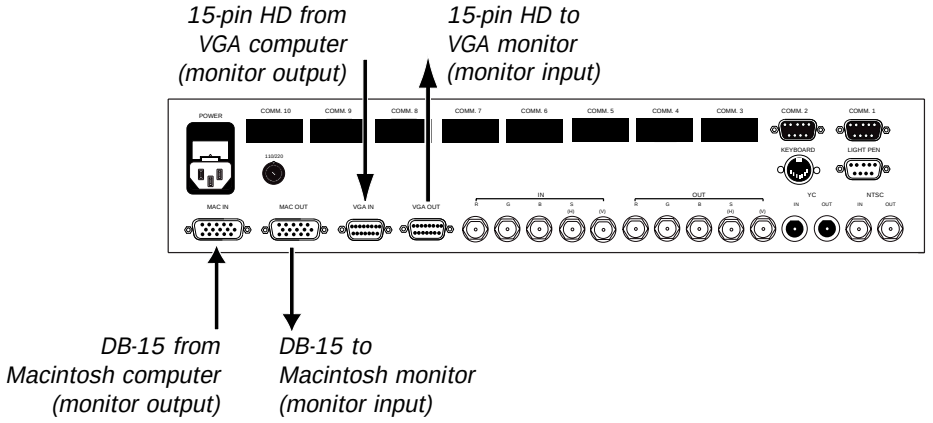

*Figure **1.11***
Back Panel, *Pointmaker* for PC and Macintosh connections

3. Macintosh computer/monitor connections:

   A. **Connect the *Pointmaker* MAC IN connector (DB-15) to the monitor output port on the Macintosh computer**.

   B. **Connect the *Pointmaker* MAC OUT connector (DB-15) to the input connector on the Macintosh monitor.**

   NOTE: *The Macintosh connector on the* ***Pointmaker*** *features the ability to handle composite sync or separate horizontal and vertical sync, depending on the type of system connected. If desired, Macintosh systems with separate horizontal and vertical sync may be installed using the RGB H/V connectors (refer to instructions on page 20) . Macintosh systems with composite sync may be installed using the RGB/S connectors (refer to instructions on page 19). Only connect MAC input to MAC output (or RGB H/V input to RGB H/V output; or RGB/S input to RGB/S output).*

   NOTE: *On power up, the* ***Pointmaker*** *will automatically sync with the installed monitor. If a different monitor will be used during a presentation, turn off the* ***Pointmaker****, connect the new monitor, then power up.*

4. **Install the appropriate controller for *the Pointmaker*** (digitizing tablet, light pen, touch screen, remote control, or other mouse device).

   NOTE: *Detailed installation instructions for each controller are featured at the end of this chapter. Controller installation is the same for any video standard.*

5. Power supply:

   A. **Ensure that the VOLTAGE SWITCH on the back of the *Pointmaker* is in the proper position to coincide with the power source** (refer to *Figure* ***1.11***).

   B. **Plug the power cord into the back of the *Pointmaker* and then into any grounded outlet** (refer to *Figure* ***1.11***).

C. **Plug the computer source and monitor power cords into any grounded outlet**.

D. For a wireless remote control, be sure to additionally **plug the remote receiver power cord into any grounded outlet**.

E. **Turn on the computer source and monitor and then press the power button on the front panel of the *Pointmaker*** (an indicator light will be displayed to signify that power is on).

NOTE: *In order for the **Pointmaker** to properly sync with the video signal, the source should be turned on first.*

F. For the wireless remote control, be sure to also **turn on the remote receiver** if there is a power switch (some versions of the remote receiver do not have power switches).

After a moment, the monitor will display a computer image. A copyright message will briefly appear. If this is not properly displayed, recheck the installation or call Boeckeler Instruments for assistance at (800) 552-2262 or (520)573-7100.

To install the *Pointmaker* with A/V programmable remote control systems refer to the back of the manual, ***Section Three:*** *Commands for Using the RS-232 port*, or call Boeckeler Instruments, Inc., at (800) 552-2262 or (520)573-7100. These systems would utilize the RS-232 port on the back of the ***Pointmaker***.

If using the Pointmaker with a PC Windows '95 environment please note that some nonstandard display settings for the monitor may not be compatible with the *Pointmaker*. For suggested settings, refer to ***Section Four:*** *Appendix, "The Pointmaker and Windows 95*."

VIDEOCONFERENCE INSTALLATION

The Boeckeler® ***Pointmaker***® **PVI-73 multiple-sync video marker** can also be used for videoconferencing. In this application, the **PVI-73** is a visual aid for discussing shared schematics, technical data, medical images, replays of events, or any other videoconference image that requires detailed explanation or analysis. The **PVI-73** can be used in conjunction with a document imaging device or other visual presenter.

The **PVI-73** is connected between the codec and video monitor, and can operate either NTSC or S-Video (Y/C). Since two **PVI-73** units are usually operated in tandem, both ends can view and write over the shared image. While each user can create and clear his/her own markers, neither user can erase the other's markers during the videoconference. In order for one **PVI-73** to transmit instructions to the other, a modem is typically used at each end to establish an RS-232 link. If available, the data port on a codec may be used instead.

To install a videoconferencing system utilizing two PVI-73 units :

1. **Make all connections before applying power**.

2. Video line connections **(refer to** *Figure* ***1.12*****)**:

   A. **Follow the *Pointmaker* installation procedures appropriate to the type of video system and controller(s) used** (e.g., follow Y/C installation instructions if Y/C video components are used; light pen installation instructions if a light pen is used).

   Use the configuration below as a guideline to connecting the two systems together.

   NOTE: *Video system installation begins on page 15. Controller installation begins on page 32 .*

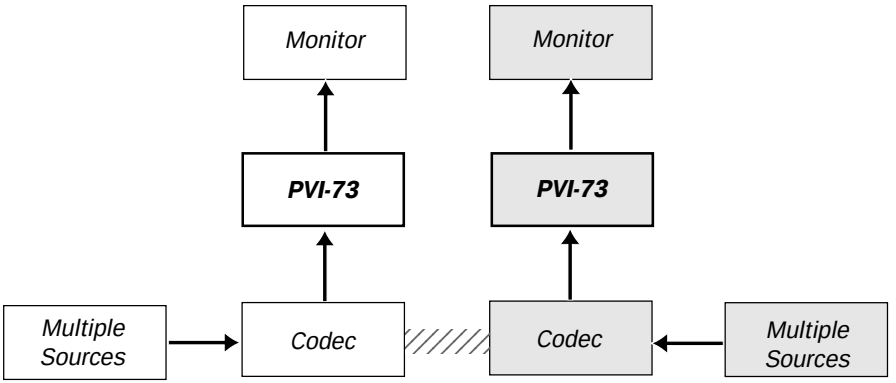

Figure ***1.12***
General Configuration of Video Connections

3. Data line connections **(refer to** *Figure* ***1.13*****)** :

   If a data port is available on the codec, use the left configuration in *Figure* ***1.13*** as a guideline.

A. **Connect an available PVI-73 COMM port to the data port on the codec**, and make all other connections as required by the codec manufacturer.

4. **If a data port is not available on the codec, use a modem and follow the right-hand configuration in *Figure 1.13* as a guideline**.

   A. **Connect the PVI-73 RS-232 port to the modem**, and make all other connections as required by the modem manufacturer.

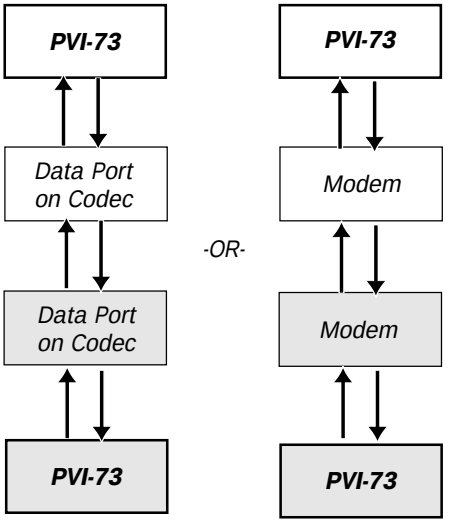

*Figure **1.13***
General Configuration of Data Line Connections

B. Be sure that each modem is turned on before powering up each **PVI-73**. This ensures that the **PVI-73** will be able to initialize the modem.

5. **Before dialing, select HARDWARE SETUP from the PVI-73 Setup Menu**.

   NOTE: *The last two menu options in the HARDWARE SETUP Menu assist in making a connection.*

INITIATE MODEM CONNECTION

COMPLETE MODEM CONNECTION

D. **Using the phone attached to the modem, a user at one end dials the other to establish a phone line connection**.

E. **After the call has been successfully connected, a user at one end selects the INITIATE MODEM CONNECTION option**.

F. **When the other user hears the tone produced by the ready modem, he/she selects COMPLETE MODEM CONNECTION**.

The message CONNECTION OK will appear on screen when the connection has been successfully established.

NOTE: *It may take more than one attempt to obtain a successful connection. When connection between the two* ***PVI-73*** *units has been established, videoconferencing can proceed.*

If you have installation questions or a different configuration than those described, call Boeckeler Instruments, Inc., (800) 552-2262 or (520)573-7100

Alternate installation for a videoconferencing system utilizing one PVI-73 unit:

1. **Make all connections before applying power**.

2. Video connections:

   A. **Follow the *Pointmaker* installation procedures appropriate to the type of video system and controller(s) used** (e.g., follow Y/C installation instructions if Y/C video components are used; light pen installation instructions if a light pen is used).

   Use the configuration below as a guideline to connecting the two systems together.

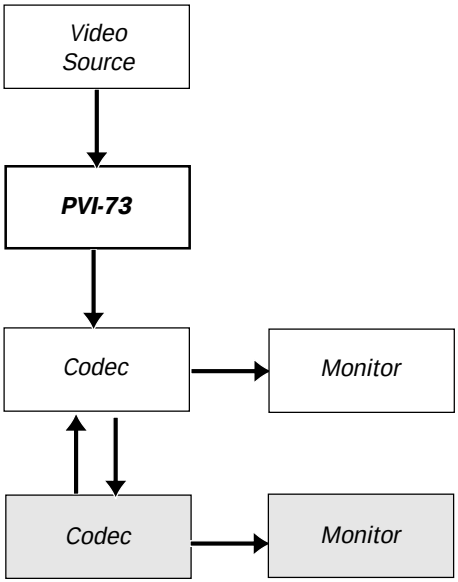

*Figure **1.14***
General Configuration
When One PVI-73 is Utilized

NOTE: *Video system installation begins on page 15. Controller installation begins on page 32 .*

3. Because only one ***Pointmaker*** unit is being installed, users will not need to INITIATE or COMPLETE a modem connection in the **Hardware Setup Menu**.

If you have installation questions or a different configuration than those described, call Boeckeler Instruments, Inc., (800) 552-2262 or (520)573-7100

CONTROLLER INSTALLATION

To install the *Pointmaker* light pen (refer to *Figure* *1.15*)

1. **Make all connections before applying power.**

2. **Connect the light pen cable to the LIGHT PEN port on the back of the *Pointmaker*.**

   NOTE: *The light pen can be installed and used concurrently with an installed mouse pen/device, wireless remote control or other mouse controller that utilizes a* ***COMM*** *port on the back of the* ***Pointmaker****. The* ***Pointmaker*** *will automatically detect the controller(s) installed upon power up. If users change controllers or add a new controller, they will need to power down, install the new controller(s), then power up.*

3. **For more precise drawing on the monitor screen, we suggest calibrating the light pen upon first installation, and then anytime a**

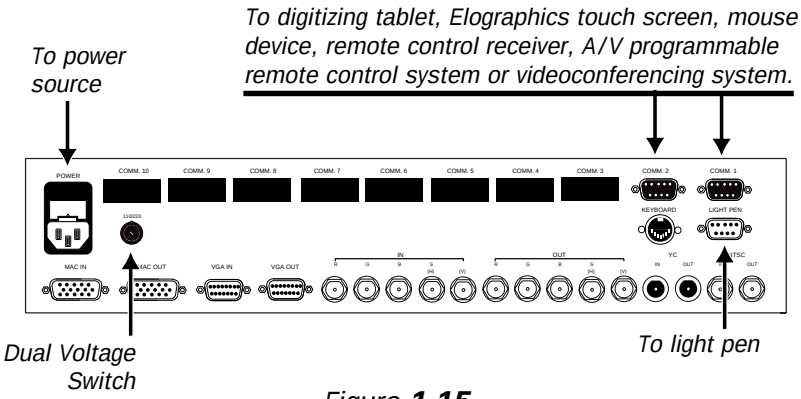

Figure ***1.15***
Back Panel, *Pointmaker*
Controller Connections

new monitor will be used with the light pen. After powering up, refer to calibration instructions that begin on page 57.

To install the light pen with the optional light pen driver and extension cable (refer to ***Figure** 1.16*)

1. **Make all connections before applying power.**

2. **Connect the LPX Extension Receiver Box to the Pointmaker.**

   A. Using DB-9 cable provided, **connect the LPX Extension receiver DB-9 Connector to the LIGHT PEN port** on the back of the *Pointmaker*.

3. **Connect the Extension Receiver Box to the Power Supply.**

   A. Using the power cord that is attached to the power supply, **connect the DC-9V connector on Extension Receiver Box to the power supply**. *Do not connect to power outlet until the rest of the connections have been made.*

4. **Connect the Extension Cable to the LPX Extension Receiver Box and LPX Extension Transmitter**.

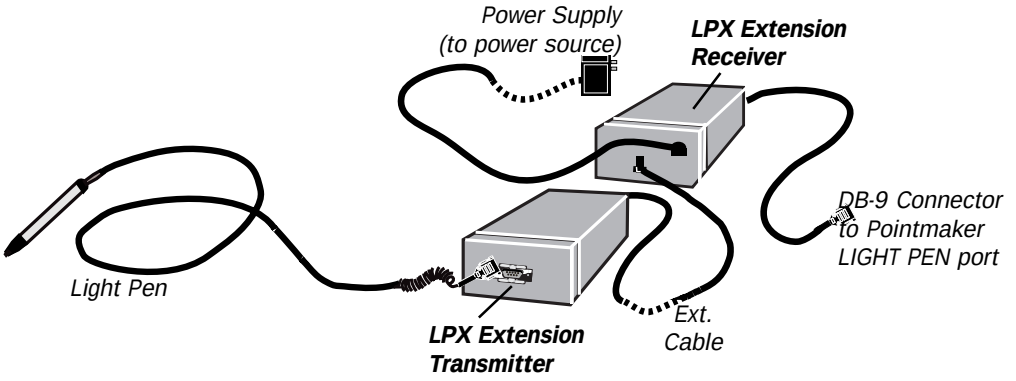

*Figure **1.16***
Installed components of the optional LPX Extension for Light Pen

A. **Using the beige LPX extension cable**, **connect the RJ-45 connector on the LPX Extension Receiver to the RJ-45 connector on the LPX Extension Transmitter.** These RJ-45 connectors resemble phone jacks.

5. **Connect the LPX Transmitter to the Light Pen.**

   A. **Using the gray light pen cable attached to the light pen, connect the light pen to the LPX transmitter DB-9 connector**.

6. **Connect the Power Supply to any grounded outlet.**

To install the *Pointmaker* digitizing tablet (refer to *Figure* *1.17* & *1.18*)

1. **Connect the stylus to the digitizing tablet (refer to *Figure* *1.17*)**.

2. **Using the RS-232 cable provided with the digitizing tablet (refer to *Figure* *1.17*), connect the female 9-pin connector to a male COMM port on the back of the *Pointmaker* (refer to *Figure* *1.18*).**

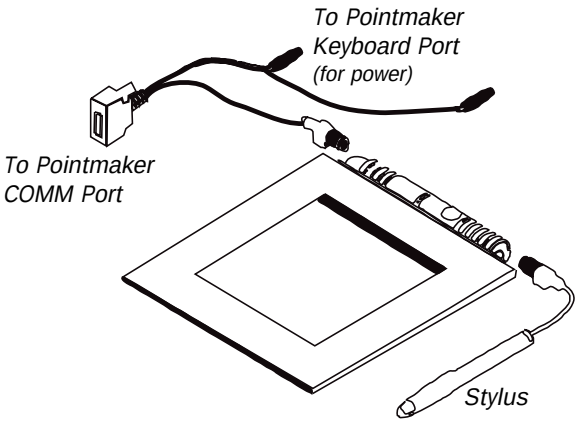

Figure ***1.17***
Installed components of the Pointmaker Digitizing Tablet

3. **Connect the other end of the RS-232 cable to the male 5-pin mini-DIN connector on the digitizing tablet** (round connector located in the upper left of the tablet as you face tablet).

4. **Connect the keyboard cable** (which runs off the RS-232 cable) **to the keyboard adapter cable provided with the digitizing tablet**. There is only one way to plug in these connectors.

5. **Connect the other end of the keyboard adapter cable to the female KEYBOARD connector on the back of the *Pointmaker* (refer to** *Figure **1.17 and 1.18***).

   NOTE: *The extra cable that runs off the keyboard adapter cable is extraneous for most applications.* ***NOTE:*** *The digitizing tablet can be installed and used concurrently with an optional light pen that utilizes the* ***LIGHT PEN*** *port on the back of the* ***Pointmaker****. The* ***Pointmaker*** *will automatically detect the controller(s) installed upon power up. If users change controllers or add a new controller, they will need to power down, install the new controller(s), then power up.*

5. **Be sure to insert the desired paper template face up under the plastic sheathe of the tablet.** The *Pointmaker* was shipped with two templates, both inserted under the sheath. Choose the Presenter or Broadcaster template and make sure the same template is activated in the ***Setup Menu*** (refer to page 64 for details).

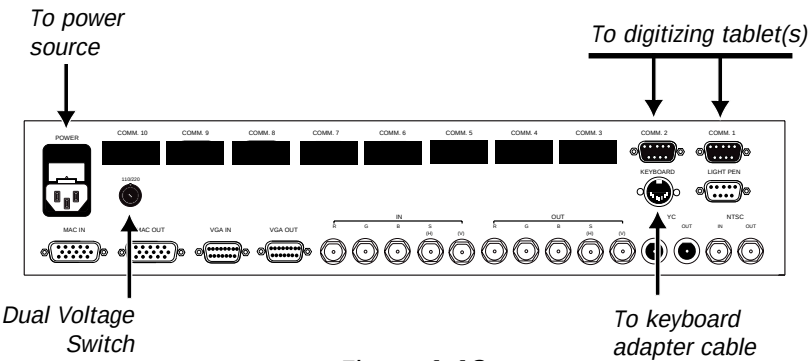

*Figure **1.18***
Back Panel, *Pointmaker*
Digitizing Tablet Connections

To install a separately purchased mouse pen or mouse device (refer to *Figure* ***1.19***)**

1. **Using the 9-pin adapter provided, connect the mouse cable to a COMM port on the back of the *Pointmaker*.**

   NOTE: *The mouse pen or device can be installed and used concurrently with a Pointmaker light pen which utilizes the* ***LIGHT PEN*** *port on the back of the* ***Pointmaker****. The* ***Pointmaker*** *will automatically detect the controller(s) installed upon power up. If users change controllers or add a new controller, they will need to power down, install the new controller(s), then power up.*

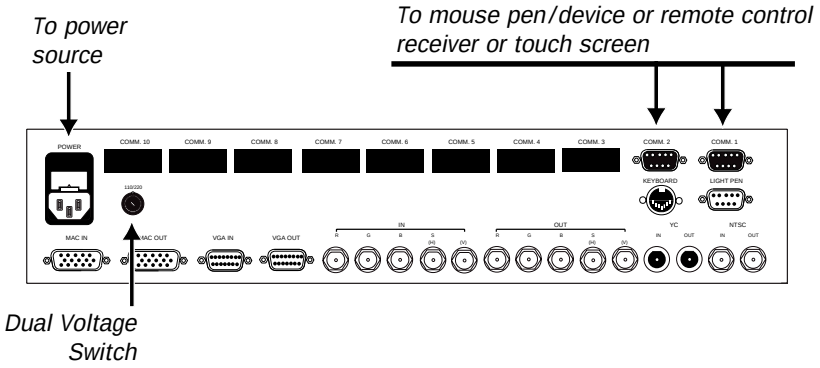

Figure ***1.19***
Back Panel, Touch Screen and Mouse Devices

To install a separately purchased wireless remote control (refer to *Figure* *1.19*)

1. **Using the 9-pin adapter provided, connect one end of the receiver cable to a COMM port on the back of the *Pointmaker*.**

2. **Connect the other end of the receiver cable to the output connector on the remote receiver.**

3. **Place the receiver near the display** so that the user will be able to

point and draw by aiming the remote control toward the display. The receiver must be at least 2" from the display. For best results place the receiver flat at least 6" above or below the video display.

NOTE: *The remote control can be installed and used concurrently with a Pointmaker light pen that utilizes the* ***LIGHT PEN*** *port on the back of the* ***Pointmaker****. The* ***Pointmaker*** *will automatically detect the controller(s) installed upon power up. If users change controllers or add a new controller, they will need to power down, install the new controller(s), then power up.*

4. **Plug the remote receiver into any grounded outlet**.

To install the *Pointmaker* with a separately purchased Elographics touch screen (refer to *Figure* *1.19 & 1.20*):

1. **Follow all video installation procedures appropriate for the video source and monitor being used.** Refer to the proper installation procedures beginning on page 15.

2. In addition to the video installation procedures noted above, **connect the Elographics RS-232 interface to an available COMM port on the back of the *Pointmaker* .**

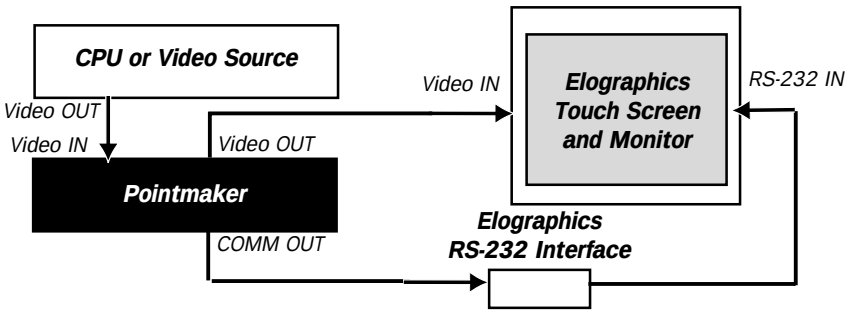

Figure ***1.20***
Configuration of *Pointmaker* with Elographics Touch Screen

NOTE: *It is suggested that the touch screen not be operated concurrently with a light pen. If presenters wish to use the Elographics monitor with the digitizing tablet, a mouse pen or mouse device, or wireless remote control, they will need to power down, unplug the touch screen from the* ***Pointmaker*** *COMM port, install the new controller, then power up. Do not disconnect the video cable between the touch screen and the* ***Pointmaker****, or video will not be displayed.*

3. Upon first power up, or whenever a new monitor is connected, be sure to **calibrate the monitor with the *Pointmaker*** .

   A. To calibrate, **power up the *Pointmaker* and wait for the copyright message to appear**.

   B. During the 8-second message, **touch the screen anywhere**.

      The ***Touch Screen Calibration Menu*** will appear on screen.

   C. **Follow instructions displayed in the menu**.

   NOTE: *Users may also calibrate from the* ***Setup Menu****. However, calibrating during start-up is the recommended method for touch screens.*

4. If desired, **copy the touch screen labels below and affix them to the corresponding corners of the touch screen.** This may be an aid to presenters unfamiliar with touch screen functions. Each label identifies the function of its assigned corner (the filled block in the corner of each square identifies which corner of the monitor it should be placed). For a set of quality adhesive labels for touch screens, call Boeckeler Instruments at (520) 573-7100.

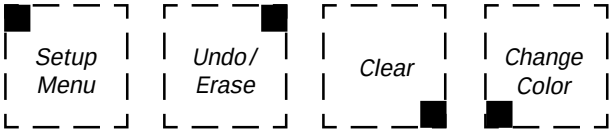

Figure ***1.21***
Touch Screen Labels

Section Two:
Using the Markers

OVERVIEW

There are three stages in developing a presentation using a ***Point-maker* PVI-73 multiple-sync video marker**. The first stage is the *setup* stage, which is accomplished by making menu selections before the presentation.

The second stage is the *marking* stage, in which presenters draw or place pointers over the video image during a presentation or during the recording of a presentation.

The third and final stage is *clearing* the marker(s) to ready the screen for a new overlay of markers, or to allow the presenter to pause and speak to the audience before proceeding to the next annotation.

Although *Help* can be accessed at any time during *Setup* or *Marking*, *Help* will be covered when discussing *Setup*.

The following procedures were written in order of these presentation stages: *Setup (including Help)*, *Marking* , then *Clearing Markers*.

SETUP

Entering the Setup Menu

To enter the *Setup Menu*:

Digitizing Tablet

1. **First press the *barrel button* and then press the *tip button* so that both buttons are simultaneously pressed for about 5 seconds**.

   The ***Setup Menu*** will appear on screen (refer to *Figure **2.1***)

   NOTE: *Most options in the Setup Menu are more directly available by pressing the corresponding icon on the tablet Menu Strip. Setup Menu options not available on the Menu Strip are setup for RS-232 parameters and accessing help messages.*

*Figure **2.1***
Setup Menu, POINTERS selected

Light Pen

1. **First press the *barrel button* and then press the *tip button* so that both buttons are simultaneously pressed for about 5 seconds**.

   The ***Setup Menu*** will appear on screen (refer to *Figure **2.1***)

   NOTE: *The tip button must be pressed soon after the barrel button, or the **Pointmaker** may interpret the barrel button press as a "clear" command, and markers may be erased from the screen.*

Touch Screen

1. **Tap the *upper left corner* of the touch screen.**

   The ***Setup Menu*** will appear on screen (refer to *Figure **2.1***)

Other devices

1. **First press the *second* (or r*ight*) *button* and then press the *first* (or *left*) *button* so that both buttons are simultaneously pressed for about 5 seconds**.

   The ***Setup Menu*** will appear on screen (refer to Figure ***2.1***)

   NOTE: *The first button must be pressed soon after the second (or right) button, or the **Pointmaker** may interpret the second button press as a "clear" command, and markers may be erased from the screen.*

Selecting a Pointer Type

To select a pointer type:

1. **In the *Setup Menu*, position the cursor over the POINTERS option (**refer to *Figure **2.1***).

NOTE: *The box over which the cursor is positioned will be outlined in black, rather than in white.*

N*OTE:* *Digitizing Tablet users do not need to access the* ***Setup Menu*** *to select a pointer type. They may simply press the tablet icon depicting the type of pointer desired.*

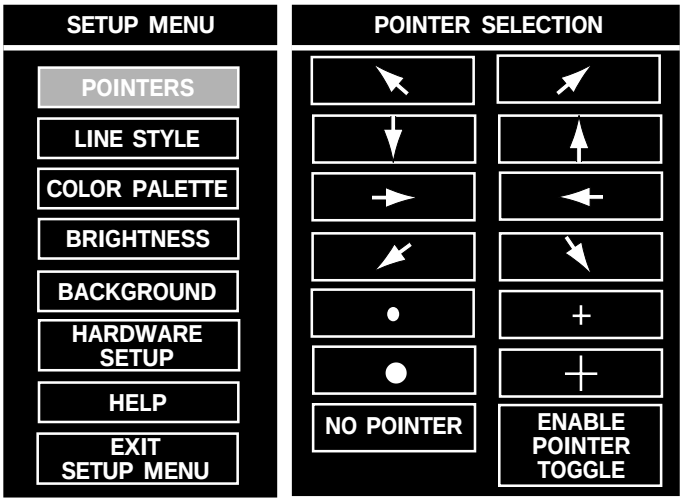

Figure ***2.2***
Pointer Selection Menu.

2. **Select the POINTERS option.** To make a menu selection:

   A. Digitizing Tablet: **Use Pointer icon on tablet rather than selecting from menu.** Pointer selection will vary depending on which template is activated. If the Broadcaster template is active, only the most commonly used pointers are available from the tablet. For the full array of pointers, the Broadcaster template user would go to the Setup Menu, select POINTERS and **position the cursor over the pointer desired, then click the pen tip button once**.

   B. Light Pen: **click the *tip button* once**.

C. Touch Screen: **tap the screen over the option box**.

D. Other Device: **click the *first (or left) button* once**.

The POINTERS option will be highlighted in pink and the ***Pointer Selection Menu*** will appear on screen alongside the ***Setup Menu*** (refer to *Figure **2.2***).

3. **Select the desired pointer** (arrow, dot, cross hairs or no pointer).

   NOTE: *The box over which the cursor is positioned will be outlined in black, rather than in white.* The option selected will be highlighted with a solid pink fill.

4. **Exit the *Pointer Selection Menu*.**

   A. **Select any option in the *Setup Menu*.**

Enabling the Pointer On / Off Toggle

The ENABLE POINTER TOGGLE option in the ***Pointer Selection Menu*** gives users the ability to click on or off the pointer during a presentation. Users might want to engage this option if they will be drawing most of the time, rather than pointing, or if they need a pointer only occasionally.

To enable or disengage the Pointer On / Off Toggle:

1. **In the *Setup Menu*, position the cursor over the POINTERS option (**refer to *Figure **2.1***).

   NOTE: *The box over which the cursor is positioned will be outlined in black, rather than in white.*

2. **Select the POINTERS option.**

   A. *Digitizing Tablet:* ***click pen tip once****.*

*NOTE: Digitizing Tablet users do not need to access the **Setup Menu** to enable the pointer toggle. They may simply press the tablet icon POINTER ON/OFF on the Presenter's or Broadcaster's template.*

B. Light Pen: **click the *tip button* once**.

C. Touch Screen: **tap the screen over the option box**.

D. Other devices: **click the *first* (or *left*) *button* once**.

The POINTERS option will be highlighted with a solid fill of pink and the ***Pointer Selection Menu*** will appear on screen alongside the ***Setup Menu*** (refer to *Figure **2.2***).

2. **Select the ENABLE POINTER TOGGLE option**.

***NOTE:** The box over which the cursor is positioned will be outlined in black, rather than in white.* When activated, the ENABLE POINTER TOGGLE will be highlighted with a solid fill of pink.

3. **Exit the *Pointer Selection Menu*.**

A. To exit the ***Pointer Selection Menu*, select any option in the *Setup Menu*.**

To toggle the pointer *off* or *on* during a presentation:

Digitizing Tablet:

1. **Press the pen tip on the *Pointer On/Off* icon on the *Menu Strip***.

The pointer will disappear. To make the pointer reappear, repeat the same procedure.

NOTE: An alternative to turning the pointer on and off on the digitizing tablet, is using the Proximity On/Off feature on the Broadcaster's template. When active, this feature causes the active

pointer to disappear each time the pen is removed from proximity of the tablet drawing area. To deactivate proximity, repeat the same procedure. To change templates, refer to instructions on page 64.

Light Pen:

1. **First press the barrel button, then press the tip button** so that both buttons are pressed until the pointer disappears. Then **release both buttons**.

   The pointer will disappear, provided that ENABLE POINTER TOGGLE was selected in the ***Pointer Selection Menu***. To make the pointer reappear, users will repeat the same procedure.

   NOTE: *This button combination is also used to change pointer color and to call up the* ***Setup Menu****. Color change requires that the tip button be clicked, rather than pressed. The* ***Setup Menu*** *requires that the barrel button and tip button are pressed together for at least 5 seconds (a longer period of time than required to make the pointer disappear).*

Touch Screen:

1. Because there is no active pointer on a touch screen, the ENABLE POINTER TOGGLE is inactive. **If users wish to turn off the pointer**, **they can select NO POINTER in the *Pointer Selection Menu***.

Other Devices:

1. **First press the second (or right) button, then press the first (or left) button** so that both buttons are pressed until the pointer disappears. Then **release both buttons**.

   The pointer will disappear, provided that ENABLE POINTER TOGGLE was selected in the ***Pointer Selection Menu***. To make the pointer reappear, users will repeat the same procedure.

   NOTE: *This button combination is also used to change pointer color and to call up the* ***Setup Menu****. Color change requires that the first button be clicked, rather than pressed. The* ***Setup Menu***

requires that the second button and first button are pressed together for at least 5 seconds (a longer period of time than required to make the pointer disappear).

Selecting a Line Style

To select a drawing line style:

1. **In the *Setup Menu*, position the cursor over the LINE STYLE option (**refer to *Figure **2.3***).

   ***NOTE:** The box over which the cursor is positioned will be outlined in black, rather than in white.*

2. **Select the LINE STYLE option.** To make a menu selection:

   Digitizing Tablet: click the pen tip once.

   NOTE: If the Presenter's tablet is active, users do not need to

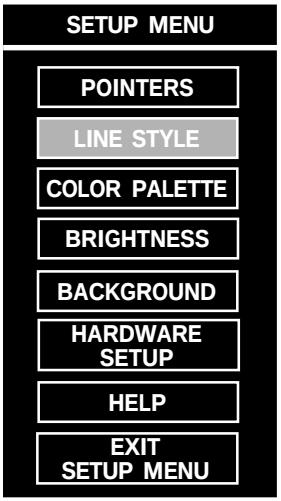

*Figure **2.3***
Setup Menu, LINE STYLE selected

access the Setup Menu to select a line style. They may simply press the tablet icon depicting the type of drawing line desired.

B. Light Pen: **click the *tip button* once**.

C. Touch Screen: **tap the screen over the option box**.

D. Other Devices: **click the *first (or left) button* once**.

The LINE STYLE option will be highlighted in pink, and the ***Line Style Menu*** will appear on screen alongside the ***Setup Menu*** (refer to *Figure **2.4***).

3. **Select the desired *line thickness* or *drop shadow* effect.**

A. **In the *Line Style Menu*, position the cursor over the desired option.**

NOTE: *The box over which the cursor is positioned will be outlined in black, rather than in white. The option selected will be highlighted with a solid pink fill.*

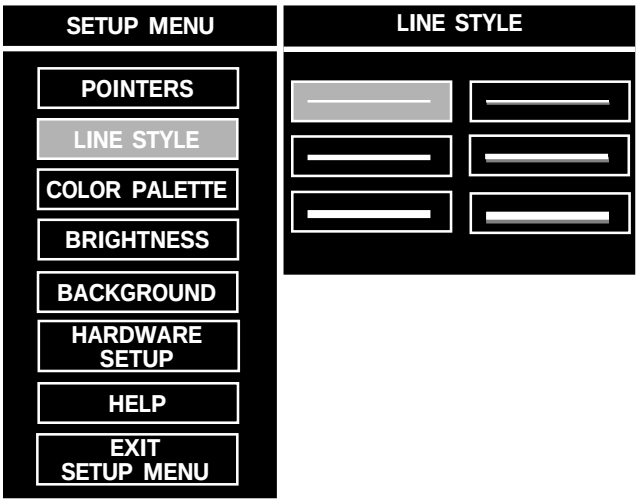

*Figure **2.4***
Line Style Menu,
fine line option selected

Drop shadows will be black for all line colors except black. Black lines do not have a drop shadow.

4. **Exit the *Line Style Menu*.**

   A. To exit the ***Line Style Menu*, select any option in the *Setup Menu*.**

Selecting a Color Palette

To select the available color palette:

1. **In the *Setup Menu*, position the cursor over the COLOR PALETTE option (**refer to *Figure **2.5***).**

*Figure **2.5***
Setup Menu, COLOR PALETTE selected

NOTE: *The box over which the cursor is positioned will be outlined in black, rather than in white.*

2. **Select the COLOR PALETTE option.**

   A. Digitizing Tablet: **Tablet users do not need to create a color palette in the Setup Menu**, since all colors are available from the tablet. Simply press the tablet icon depicting the color desired.

   B. Light Pen: **click the *tip button* once**.

   C. Touch Screen: **tap the screen over the option box**.

   D. Other Devices: **click the *first (or left) button* once**.

   The COLOR PALETTE option will be highlighted in pink and the ***Color Palette Menu*** will appear on screen alongside the ***Setup Menu*** (refer to *Figure **2.6***).

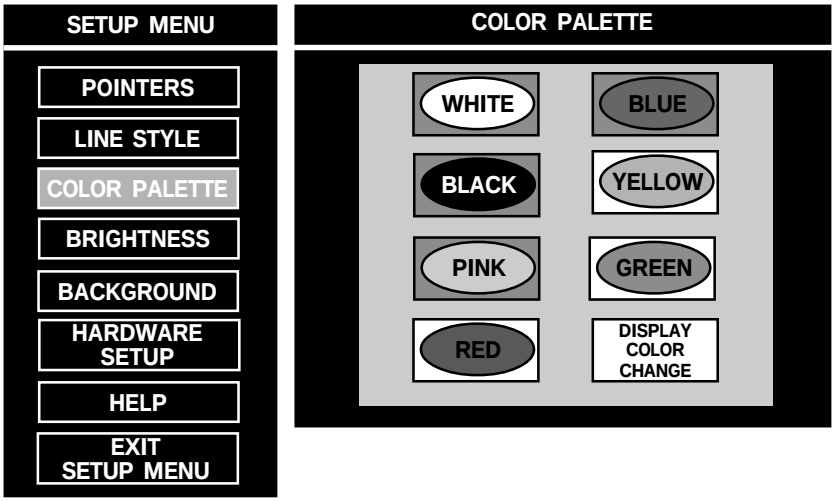

*Figure **2.6***
Color Palette Menu with white, blue, black, and pink options selected

3. **Select the *color* or *colors* which the user would like available during presentation** (1 to 7 colors).

   A. **In the *Color Palette Menu*, position the cursor over the desired option(s).** ***NOTE:*** *The box over which the cursor is positioned will be outlined in black, rather than in white. The option(s) selected will be highlighted with a solid pink fill.*

      A minimum of one color must be selected. If only one color is selected, users can deselect this color only after a second color is chosen.

      Only the colors surrounded by pink will be available to the user during the presentation.

   The live video background is displayed around the colors so that users can choose the marker color palette that will best contrast with the image.

4. **Select or disable the DISPLAY COLOR CHANGE option.**

   NOTE: *If the pointer has been disengaged, selecting the DISPLAY COLOR CHANGE option will cause a small block of color to briefly appear in the lower right of the screen to help users identify the new marker color. In the **Color Palette**, the enabled option will appear highlighted in pink.*

   For broadcasters and certain other presenters, the color block appearing on screen may not be desirable. In these cases, it is advised that the DISPLAY COLOR CHANGE option be disabled. ***NOTE:*** *Because there is no need for a color block display with the **Pointmaker** digitizing tablet, the DISPLAY COLOR CHANGE option has no affect when using that controller.*

5. **Exit the *Color Palette Menu*.**

   A. To exit the ***Color Palette Menu*, select any option in the *Setup Menu*.**

Selecting a Brightness Level

To select a brightness level for *Pointmaker* markers:

1. **In the *Setup Menu*, position the cursor over the BRIGHTNESS option (**refer to *Figure **2.7***).**

   ***NOTE:** The box over which the cursor is positioned will be outlined in black, rather than in white.*

2. **Select the BRIGHTNESS option.**

   A. Digitizing Tablet
      -- *Presenter's Template*: Users may simply press the tablet brightness icon at the level desired.
      -- *Broadcaster's Template*: Brightness must be adjusted in the ***Setup Menu***. **Click the pen tip once.**

   B. Light Pen: **click the *tip button* once**.

   C. Touch Screen: **tap the screen over the option box**.

*Figure **2.7***
Setup Menu, BRIGHTNESS selected

D. Other Devices: **click the *first (or left) button* once**.

The BRIGHTNESS option will be highlighted in pink and the ***Brightness Menu*** will appear alongside the ***Setup Menu*** (refer to *Figure **2.8***).

3. **Select the *brightness level* which would best display the *Pointmaker* markers over the video image or chalkboard**.

   A. **In the *Set Brightness Menu*, position the pink cursor over the desired level.**

      NOTE: *Moving the pink cursor to the left will decrease brightness. Moving the pink cursor to the right will increase brightness. If the brightness is set too high for the monitor, the markers will smear across the image. Typically, more brightness is required for broadcast video than for standard video.*

3. **Exit the *Set Brightness Menu*.**

   A. **Select any option in the *Setup Menu*.**

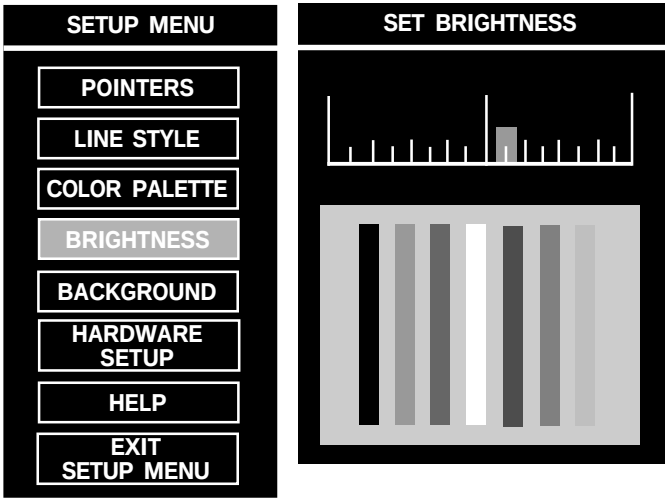

*Figure **2.8***
Set Brightness Menu

Selecting a Marking Background

To select a solid or video background on which to mark:

1. **In the *Setup Menu*, position the cursor over the BACKGROUND option (**refer to *Figure **2.9***).**

   ***NOTE:** The box over which the cursor is positioned will be outlined in black, rather than in white.*

2. **Select the BACKGROUND option.**

   A. Digitizing Tablet
      -- *Presenter's Template*: Users may simply press the tablet CHALKBOARD or VIDEO icon on the tablet.
      -- *Broadcaster's Template*: Background must be selected in the ***Setup Menu***. **Click the pen tip once.**

   B. Light Pen: **click the *tip button* once**.

   C. Touch Screen: **tap the screen over the option box**.

*Figure **2.9***
Setup Menu, BACKGROUND selected

D. Other Devices: **click the *first (or left) button* once**.

The Background option will be highlighted in pink and the ***Background Menu*** will appear on screen alongside the ***Setup Menu*** (refer to *Figure **2.10***).

2. **Select the desired *background* option**.

NOTE: *SOURCE VIDEO allows users to mark directly over the video image. CHALKBOARD allows users to mark on a solid blue background, much as one would mark on a chalkboard.*

A. In the ***Background Menu*****, position the cursor over the desired option.**

NOTE: *The box over which the cursor is positioned will be outlined in black, rather than in white. The option selected will be highlighted with a solid pink fill.*

3. **Exit the *Background Menu*.**

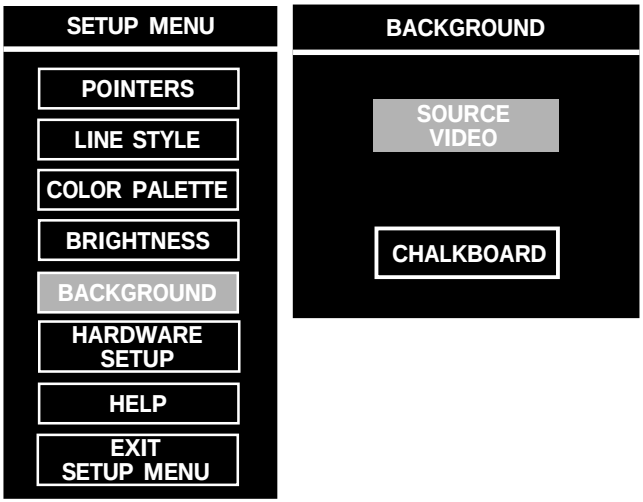

*Figure **2.10***
Background Menu,
SOURCE VIDEO selected

A. To exit the ***Background Menu*****, select any option in the *Setup Menu*.**

Calibrating *Pointmaker* Controllers

To calibrate the light pen, remote control or touch screen :

1. **In the *Setup Menu*, position the cursor over the HARDWARE SETUP option and select that option (**refer to *Figure **2.11***).**

   The **Hardware Setup Menu** will appear on screen (refer to *Figure **2.12***).

2. **Select the CALIBRATION option**.

   The **Calibration Setup Menu** will appear on screen (refer to Figure **2.13**).

3. **Select the controller to be calibrated** (e.g., LIGHT PEN CALIBRATION).

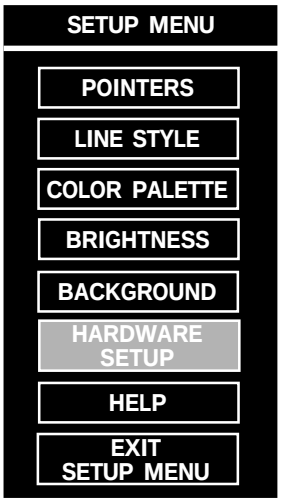

*Figure **2.11***
Setup Menu, HARDWARE SETUP selected

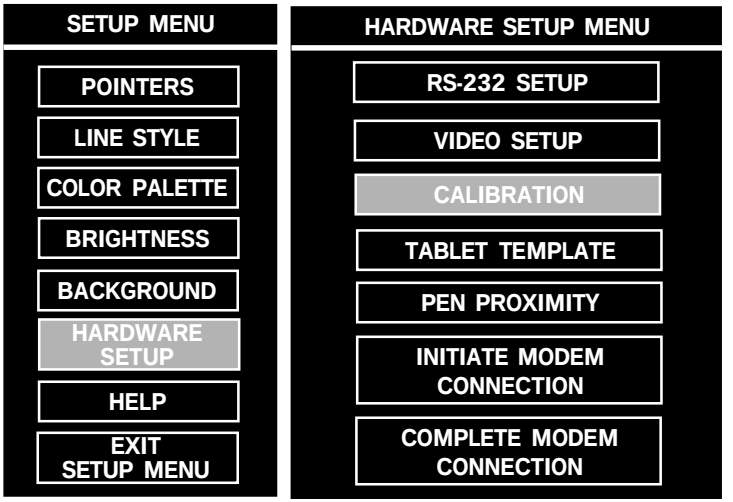

Figure ***2.12***
Hardware Setup Menu,
CALIBRATION option selected.

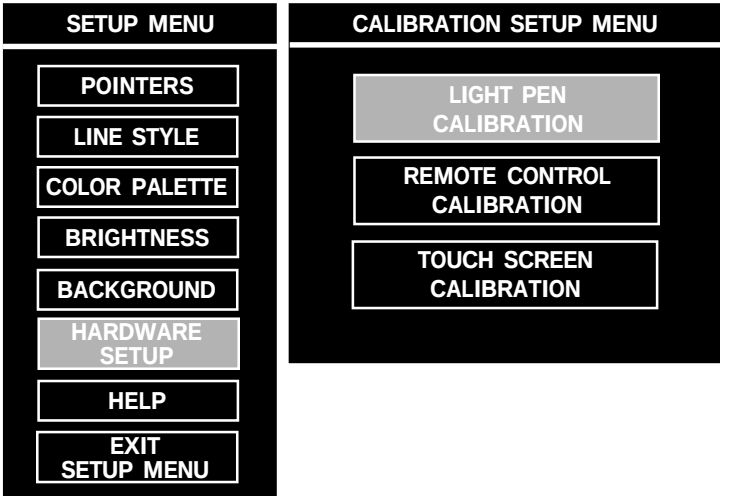

Figure ***2.13***
Calibration Menu, LIGHT
PEN CALIBRATION selected.

The CONTROLLER CALIBRATION option will be highlighted in pink (refer to ***Figure 2.13***) and the ***Calibration Procedure*** for the selected controller will appear on screen (refer to ***Figure 2.14***).

3. **Follow calibration instructions displayed in the *Calibration Procedure*.**

   After users perform final calibration procedures, the ***Calibration Procedure*** display will automatically disappear and users will be returned to the ***Setup Menu*** with ***Hardware Setup Menu***.

4. **Exit the *Hardware Setup Menu*.**

   A. To exit the ***Hardware Setup Menu*, select any option in the *Setup Menu*.**

   NOTE: *Calibration for touch screens can take place as described through the* ***Setup Menu****. However, Boeckeler recommends calibrating upon first power up by touching the copyright screen anywhere while it is being display. For details on this method of touch screen calibration, refer to calibration instructions on page 38.*

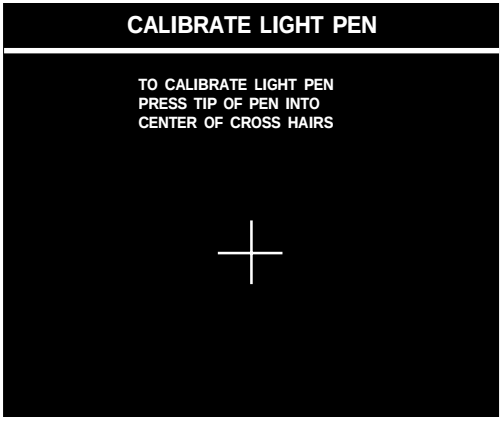

Figure ***2.14***
Calibration Procedure Displayed for the Light Pen

Setting RS-232 Parameters

All ***Pointmaker*** menu choices can be made using ASCII codes sent over the RS-232 port. This allows users to make changes during a presentation without calling up a menu in front of their audience.

To set RS-232 parameters for videoconferencing or A/V programmable remote control systems:

1. **In the *Setup Menu*, position the cursor over the HARDWARE SETUP option and select that option.**

   NOTE: *The box over which the cursor is positioned will be outlined in black, rather than in white* (refer to *Figure* ***2.15***).

2. **Select the RS-232 SETUP option**.

   The RS-232 SETUP option will be highlighted in pink and the **RS-232 *Menu*** will appear on screen alongside the ***Setup Menu*** (refer to *Figure* ***2.16***).

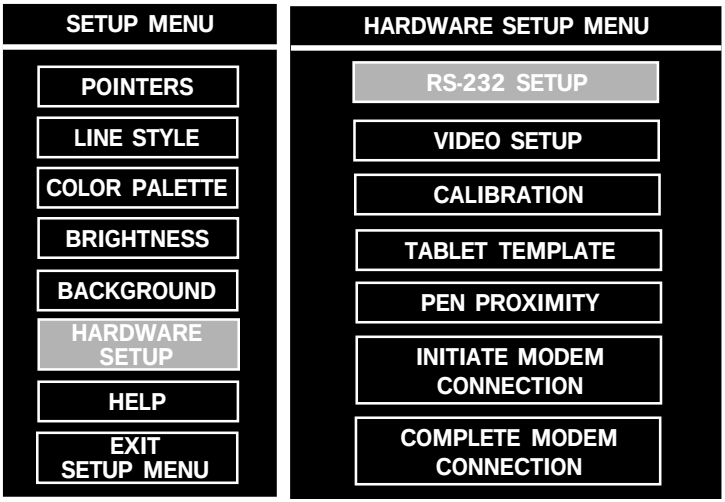

Figure ***2.15***
Setup Menu and Hardware Setup Menu, RS-232 SETUP selected

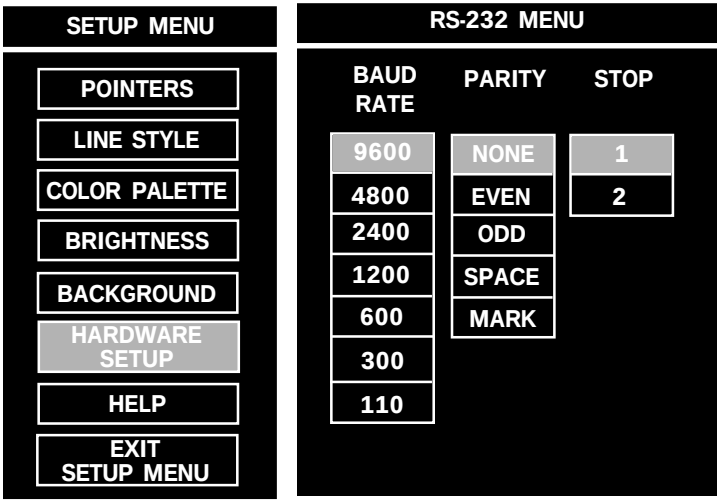

Figure ***2.16***
Setup Menu and RS-232 Menu with three options selected

3. **Select the desired baud rate, parity, and stop displayed in the *RS-232 Menu*.**

   NOTE: *Factory settings are 9600 baud, no parity, 1 stop bit. The* ***Pointmaker*** *RS-232 port is always set to 8 data bits.*

4. **Exit the *RS-232 Menu*.**

   A. To exit the ***RS-232 Menu*, select any option in the *Setup Menu*.**

Selecting Video Modes

On first installation, the ***Pointmaker*** is in the DEFAULT mode, which automatically detects the video inputs and outputs. If multiple sources are installed and the ***Pointmaker*** is set on DEFAULT the source with the highest scan rate is given priority provided there is a display that supports that source. Priority from first to last is: Macintosh, SVGA, VGA, RGB (NTSC), Y/C, NTSC composite.

The priority can be overridden by selecting a specific video mode. If a specific video mode is selected and there is an output but no input, the ***Pointmaker*** will generate its own sync, thus placing the ***Pointmaker*** in "chalkboard" mode. If there is an input, but no output, the display or monitor will not show an image.

To select a video mode :

1. **In the *Setup Menu*, position the cursor over the HARDWARE SETUP option.**

   NOTE: *The box over which the cursor is positioned will be*

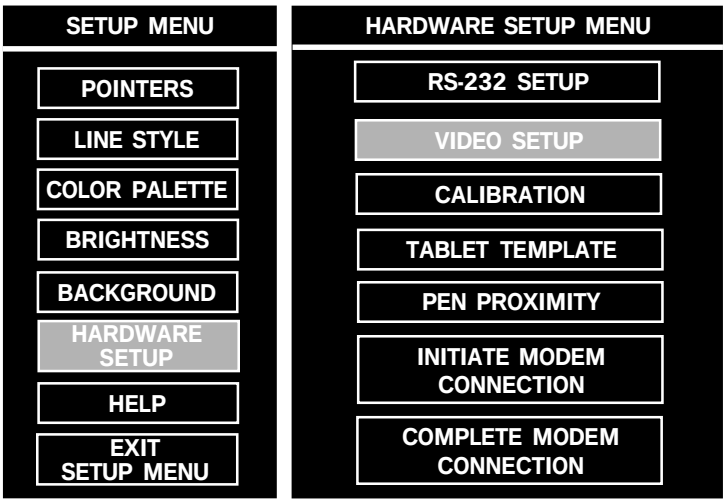

Figure ***2.17***
Setup Menu and Hardware Setup Menu
VIDEO SETUP option selected

outlined in black, rather than in white.

2. **Select the HARDWARE SETUP option.**

   The ***Hardware Setup Menu*** will appear on screen next to the ***Setup Menu*** (refer to *Figure **2.17***).

3. **In the *Hardware Setup Menu*, position the cursor over the VIDEO SETUP option.**

   NOTE: *The box over which the cursor is positioned will be outlined in black, rather than in white.*

4. **Select the VIDEO SETUP option.**

   The ***Video* Setup *Menu*** will appear on screen alongside the ***Setup Menu*** (refer to *Figure **2.18***).

5. **Select the desired video mode displayed in the *Video Setup Menu*.**

6. **To exit the *Video Setup Menu*** select any option in the ***Setup Menu.***

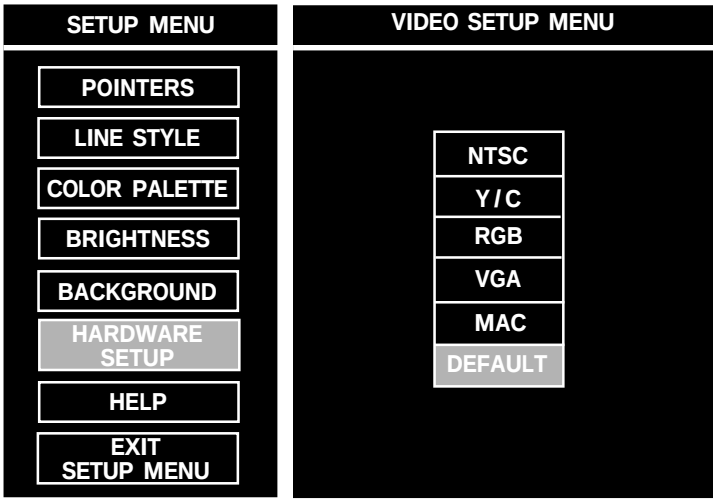

*Figure **2.18***
Setup Menu and Video Setup Menu
DEFAULT option selected

Changing Tablet Templates

The ***Pointmaker*** **PVI-73D with digitizing tablet** ships with two tablet templates. Both templates are inserted under the plastic sheath of the tablet. The template facing upwards is the active template. Boeckeler Instruments recommends that both templates be stored here, with the active template on top, face up; the disengaged template underneath, face down. When the paper templates are switched, be sure to also switch the template settings in the ***Pointmaker*** by following the procedure below.

The *Presenter Template* includes more setup options. The *Broadcaster Template* features only the most commonly used marking functions, preferred for on-air use.

To select a new tablet template:

1. **In the *Setup Menu*, position the cursor over the HARDWARE SETUP option.**

   NOTE: *The box over which the cursor is positioned will be*

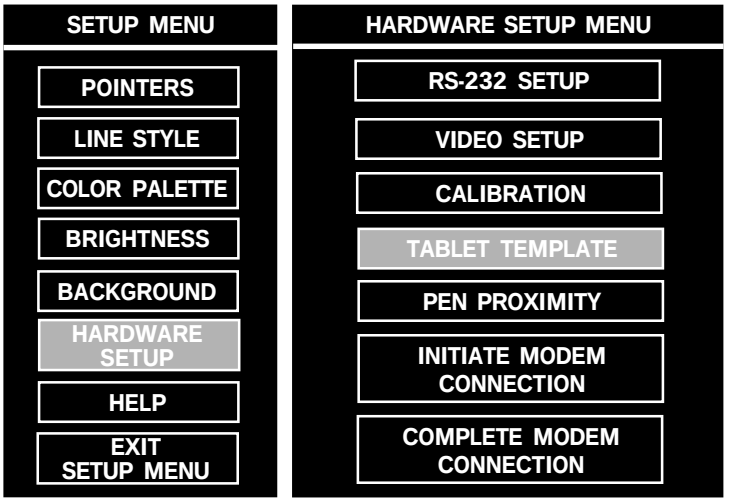

Figure ***2.19***
Setup Menu and Hardware Setup Menu
TABLET TEMPLATE selected

outlined in black, rather than in white.

2. **Select the HARDWARE SETUP option.**

   The *Hardware Setup Menu* will appear on screen alongside the Setup Menu (refer to *Figure **2.19***).

3. **In the *Hardware Setup Menu*, position the cursor over the VIDEO SETUP option.**

   ***NOTE:** The box over which the cursor is positioned will be outlined in black, rather than in white.*

4. **Select the TABLET TEMPLATE option.**

   The ***Tablet Template Menu*** will appear on screen next to the ***Setup Menu*** (refer to *Figure **2.20***).

5. **Select the desired template option**.

   ***NOTE:** Be sure that the paper template corresponding with this*

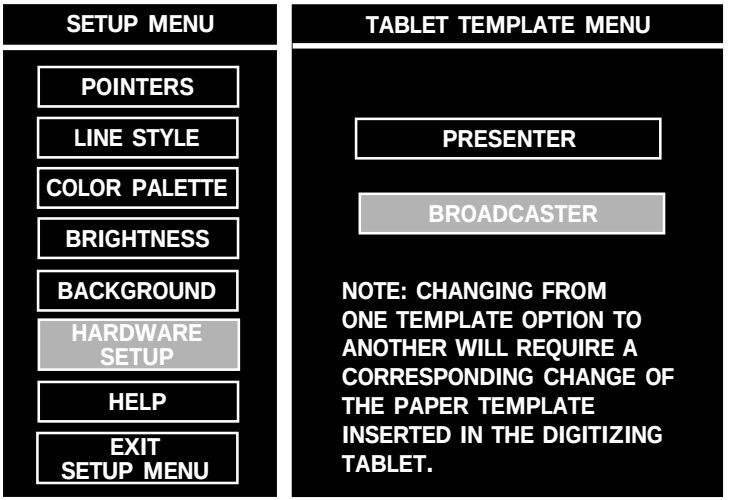

*Figure **2.20***
Setup Menu and Tablet Template Menu, BROADCASTER selected

option is face up under the tablet sheath.

6. **Exit the *Tablet Template Menu*** by selecting any option in the ***Setup Menu.***

Changing Pen Proximity

The ***Pointmaker*** digitizing tablet and light pen may be activated to have *Pen Proximity* on or off. When *Pen Proximity* is activated, the active pointer will disappear as the pen tip is moved away from the tablet (or as the light pen is moved away from the glass). When *Pen Proximity* is deactivated, the active pointer will remain on screen even when the pen is pulled away from the tablet (or when the light pen tip is moved away from the glass). This is, of course, if the active pointer has not been turned off.

To change pen proximity:

1. **In the *Setup Menu*, position the cursor over the HARDWARE SETUP option.**

   NOTE: *The box over which the cursor is positioned will be outlined in black, rather than in white.*

2. **Select the HARDWARE SETUP option.**

   The ***Hardware Setup Menu*** will appear on screen next to the ***Setup Menu*** (refer to *Figure* ***2.21***).

3. **In the *Hardware Setup Menu*, position the cursor over the PEN PROXIMITY option.**

   NOTE: *The Pen Proximity option will be filled in pink if it is active. There will be no fill if it is not active.*

4. **If the PEN PROXIMITY option is not filled in pink and you would like PEN PROXIMITY on, select the PEN PROXIMITY option**.

The PEN PROXIMITY option will be filled with pink, denoting that the feature is active.

5. **If the PEN PROXIMITY option is filled in pink and you would like PEN PROXIMITY off, select the PEN PROXIMITY option**.

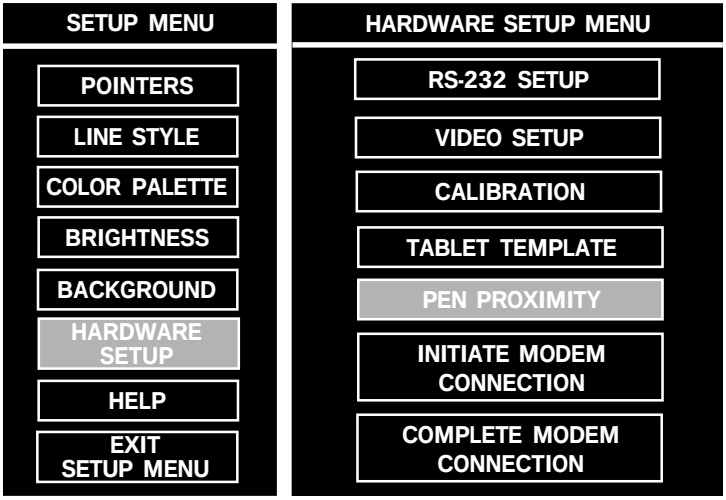

Figure ***2.21***
Setup Menu and Hardware Setup Menu, Pen Proximity Activated

The PEN PROXIMITY option will show no fill, denoting that the feature is inactive.

6. **To exit the *Hardware Setup Menu*, select any option in the *Setup Menu.***

Using the Help Messages

The ***Pointmaker Help Menu*** may be accessed before or during a presentation. As part of the setup procedure, it is wise to have the presenter familiarize himself or herself with this option, should quick tips be needed during a presentation. If presenters elect to use a hard copy version of help instead, a master for index card-sized "***Quick Notes***" are provided at the conclusion of this section.

To enter the Help Menu:

1. **In the *Setup Menu*, position the cursor over the HELP option.**

   NOTE: *The box over which the cursor is positioned will be outlined in black, rather than in white.*

2. **Select the HELP option.**

   A. Digitizing Tablet: **click the *tip button* once**.

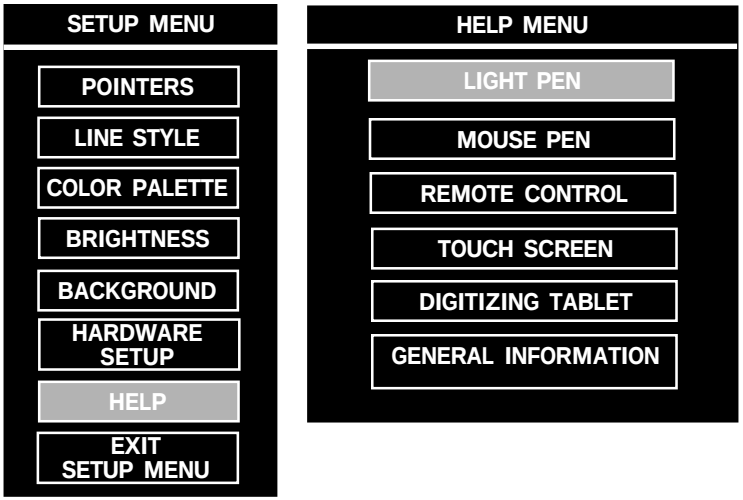

Figure ***2.22***
Setup Menu and Help Menu, LIGHT PEN Selected

B. Light Pen: **click the *tip button* once**.

C. Touch Screen: **tap the screen over the option box**.

D. Other Devices: **click the *first (or left) button* once**.

The HELP option will be highlighted in pink and the ***Help Menu*** will appear on screen alongside the ***Setup Menu*** (refer to *Figure **2.22***).

3. In the ***Help Menu***, **select the desired *controller* option**. Choosing the LIGHT PEN option, for example, will display help messages that specifically pertain to light pen operating procedures.

   The corresponding ***Help Submenu*** will appear on screen next to the ***Setup Menu*** (refer to *Figure **2.23***).

NOTE: The GENERAL INFORMATION option in the ***Help Menu*** features topics that are not dependent upon controller operation, such

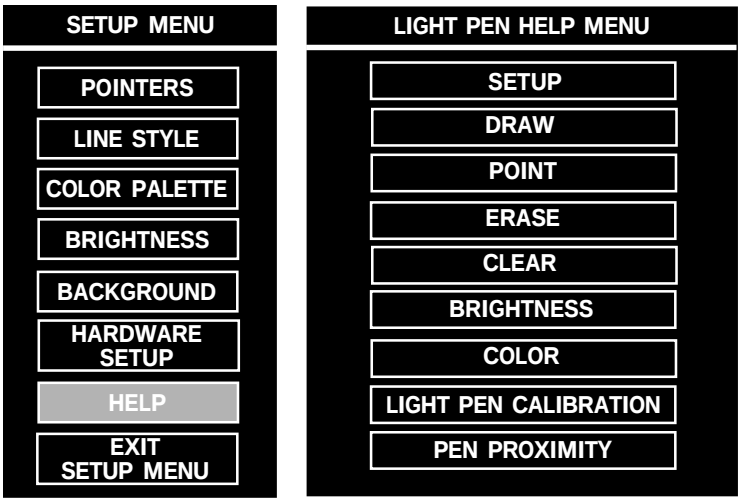

*Figure **2.23***
Help Menu after
LIGHT PEN option selected

as how the ***Pointmaker*** prioritizes video signals when operators have installed the ***Pointmaker*** with multiple video sources.

4. In the ***Controller's Help Menu*** (refer to *Figure **2.23***) **position the cursor over the desired help topic.**

   NOTE: *The box over which the cursor is positioned will be outlined in black, rather than in white.*

5. **Select the desired help topic.**

   The ***Setup Menu*** and ***Help Submenu*** will disappear and the selected help message will appear on screen.

To exit a help message or a help menu:

1. To exit a help message **follow the simple exit instructions displayed in each help message**.

   Users will be returned to the ***Controller's Help Menu***.

2. To exit all help menus **select any option in the *Setup Menu***.

Exiting the Setup Menu

To exit the *Setup Menu*:

1. **In the *Setup Menu*, position the cursor over the EXIT SETUP MENU option (**refer to *Figure **2.24***).**

   NOTE: *The box over which the cursor is positioned will be outlined in black, rather than in white.*

2. **Select the EXIT SETUP MENU option.**

   A. Digitizing Tablet: **click the *tip button* once**.

   B. Light Pen: **click the *tip button* once**.

   C. Touch Screen: **tap the screen over the option box**.

   D. Other Devices: **click the *first* (or *left*) *button* once**.

*Figure **2.24***
Setup Menu,
EXIT SETUP option selected

The ***Setup Menu*** will disappear and users will be presented with a *marker overlay*. The overlay will include any previously anchored markers, the active pointer selected in the ***Pointer Selection Menu*** (if any), and the background that was selected in the ***Background Menu***. Users are now ready for *marking*.

MARKING

The ***Pointmaker* PVI-73** equips presenters with freehand drawing capability and a choice of 12 pointers with which to mark a video image. Pointers include eight arrows, each oriented in a different direction, a large and small dot pointer and a large and small cross hairs pointer. Presenters may also choose to display no pointer, which is an option selected when drawing is the only feature desired.

Pointer options and drawing line styles are selected in the ***Setup Menu***, usually before a presentation. However, markers may be changed anytime during a presentation by selecting icons from the digitizing tablet, or by calling up the ***Setup Menu*** and selecting the POINTERS option (refer to *page 43*) or the LINE STYLE option (refer to *page 48)*.

A pointer may be changed only while it is an *active pointer*. An active pointer is a positionable arrow, dot or cross hairs pointer that may be moved anywhere on the screen. Presenters may choose to keep the pointer active in order to point at one detail of the video image at a time. Or, presenters may wish to anchor the pointer next to an image detail, then use a new active pointer to point out a second detail. Thus, two pointers will appear on screen, one anchored, and one active. Presenters may anchor as many pointers on the screen as desired. Note that when a pointer is anchored, it cannot be moved again, although it can be erased or cleared from the screen.

Users position the active pointer anywhere on the screen before drawing. The drawing lines are automatically anchored on the screen, so users do not need to anchor drawing lines. Although drawing lines are not positionable they can be erased or cleared from the screen.

A combination of pointers and drawing lines of various colors may be anchored on the screen at once. Unless the pointer is deactivated, or unless *Pen Proximity* is active for the light pen or digitizing tablet, an active pointer will always be present on screen. The following procedures provide details on how to mark a video image, after which, clearing and erasing procedures will be covered.

Entering the Marking Mode

To enter the *Marking Mode*:

1. **Turn on the *Pointmaker*** - or - **if already on, exit all menus.**

   The ***Marking Mode*** is automatically entered when the ***Pointmaker*** is powered up or when users exit the ***Setup Menu***. In short, while powered up, the ***Pointmaker*** is always in the ***Marking Mode*** until users call up the ***Setup Menu***.

   The ***Pointmaker*** marker overlay, upon which markers are placed, is invisible. The screen will show the image from the video source, plus an active pointer (unless disabled) and any markers that may have been anchored before users called up the ***Setup Menu***. When first powered up, no anchored markers will be displayed. Only a positionable pointer will appear.

Positioning a Pointer

To position an active pointer:

1. **Position the pointer anywhere on the video image to make your point**.

   A. Digitizing Tablet: **lightly drag the *tip button* across the *Tracking Area* of the tablet,** until the active pointer is at the desired location.

   B. Light pen: **lightly drag the *tip button* across the screen** until the active pointer is at the desired location.

   C. Touch Screen: as no active pointer is displayed on a touch screen, **users will position a finger at the desired location** on the screen.

   D. Other devices: **lightly drag the mouse's *track ball* across a pad or other smooth surface** until the active pointer is at the desired location - OR- **point the remote control at the display,**

and move the remote control in midair until the active pointer is at the desired location.

2. **Reposition the same active pointer anywhere on the video image to make your second point**, and continue as often as desired.

Anchoring a Pointer

To anchor a pointer:

1. Once a pointer type and pointer color is selected and the active pointer has been positioned, **anchor the active pointer**.

   A. Digitizing Tablet: **click the *barrel button* on the *Stylus***.

   B. Light pen: **click the *tip button* briefly**.

   C. Touch Screen: **tap the touch screen with a finger**.

   D. Other Devices: **click the *first* (or *left*) *button* briefly**.

   The pointer will be anchored and a new active pointer will appear on screen, identical to the first (active pointers are not displayed on touch screens, only anchored markers).

2. **Position the new active pointer and anchor when desired**.

   NOTE: *Users may anchor as many pointers or drawing lines as desired. Also, each pointer may be changed to a different pointer type before anchoring, or the pointer may be changed to a different color before anchoring. To change the appearance of a pointer, refer to the procedures listed on the next few pages.*

Turning Off / On the Pointer

To be able to turn the active pointer off or on during a presentation, users will need to have selected the ENABLE POINTER TOGGLE option while in the ***Pointer Selection Menu*** (refer to *page 45*).

To turn the active pointer off or on during a presentation:

Digitizing Tablet:

1. **Press the POINTER ON / OFF icon on the tablet *Menu Strip*.**

   The pointer will not appear when the tip button is dragged across the ***Tracking Area*** of the tablet. To make the pointer reappear, users will repeat the same procedure. ***NOTE:*** *The ENABLE POINTER TOGGLE option in the* ***Pointer Selection Menu*** *will be overridden by the tablet commands.*

   NOTE: *An alternative to turning the pointer on and off on the digitizing tablet, is using the PROXIMITY ON/OFF feature on the Broadcaster's template. When active, this feature causes the active pointer to disappear each time the pen is removed from proximity of the tablet's tracking area. To switch to the Broadcaster's template and activate Pen Proximity refer to instructions on page 64 and page 66.*

Light Pen:

1. **First press the barrel button, then press the tip button** so that both buttons are pressed until the pointer disappears. Then **release both buttons**.

   The pointer will disappear, provided that ENABLE POINTER TOGGLE was selected in the ***Pointer Selection Menu***. To make the pointer reappear, repeat the same procedure.

   NOTE: *This button combination is also used to change pointer color and to call up the* ***Setup Menu****. Color change requires that the tip button be clicked, rather than pressed. The* ***Setup Menu*** *requires that the barrel button and tip button are pressed*

together for at least 5 seconds (a longer period of time than required to make the pointer disappear).

NOTE: *An alternative to turning the pointer on and off on the light pen, is using the PROXIMITY ON/OFF feature on the Broadcaster's template. When active, this feature causes the active pointer to disappear each time the pen is removed from proximity of the monitor's glass. To switch to the Broadcaster's template and activate Pen Proximity refer to instructions on page 64 and page 67.*

Touch Screen:

1. Since no active pointer is displayed on a touch screen, **nothing needs to be done to turn on or off a pointer.** To make a pointer appear, users tap the touch screen. An anchored marker will be displayed.

Other Devices:

1. **First press the *second* (or *right*) button, then press the *first* (or *left*) button** so that both buttons are pressed until the pointer disappears. Then **release both buttons**.

   The pointer will disappear, provided that ENABLE POINTER TOGGLE was selected in the ***Pointer Selection Menu***. To make the pointer reappear, users will repeat the same procedure.

   NOTE: *This button combination is also used to change pointer color and to call up the* ***Setup Menu****. Color change requires that the first (or left) button be clicked, rather than pressed. The* ***Setup Menu*** *requires that the second (or right) button and first (or left) button are pressed together for at least 5 seconds (a longer period of time than required to make the pointer disappear*).

Drawing

To freehand draw:

1. Once the drawing line type and color are selected or confirmed, **position the active pointer anywhere on the video image where the drawing is to begin**.

   A. Digitizing Tablet: **press the *tip button* into the *Tracking Area* of the tablet and draw** it across until the drawing line or line segment is complete.

   B. Light Pen: **press the *tip button* into the screen** and draw it across the image until the drawing line or line segment is complete.

   C. Touch Screen: **press a finger into the *Tracking Area* of the touch screen and draw** it across the screen until the drawing line or line segment is complete.

   D. Other Devices: **press the *first button* while drawing the track ball across the mouse pad or other smooth surface** until the drawing line or line segment is complete - OR - **press the *left button* while moving the remote control in midair** until the drawing line or line segment is complete.

2. Reposition the active marker (if one is displayed) and, if desired, repeat the above procedures for another drawn line.

   NOTE: *Users may draw and place pointers as often as desired. Also, prior to drawing or anchoring pointers, each line or pointer may be changed to a different type or color. It is possible to have up to seven (7) different colored drawn lines and pointers on screen at once, for example.*

Changing the Color of Markers

To be able to select a new color for markers during a presentation, users may first want to check that the desired colors have been activated in the ***Color Palette Menu*** (refer to *Setup* procedures on *page 50*).

To select a new marker color during a presentation:

Digitizing Tablet:

1. **Press the *tip button* on the desired color icon located on the tablet *Menu Strip*.**

   All markers anchored from this point on will appear in the newly selected color. The ENABLE COLOR DISPLAY option in the ***Color Palette Menu*** has no effect when using the digitizing tablet.

Light pen:

1. **Press the *barrel button* and, while pressing, click the *tip button* until the desired color is displayed**.

   With each click of the *tip button*, the active pointer will change to one of the available colors previously selected in the ***Color Palette Menu.*** If the pointer has been disengaged, and the ENABLE COLOR DISPLAY option has been activated, a small block of color will briefly appear in the lower right of the screen to help users identify the new marker color.

   All markers anchored from this point on will appear in the newly selected color.

   NOTE: *Be careful to click the tip button rather than press it. Pressing the tip button could inadvertently toggle the pointer on/off or cause the* ***Setup Menu*** *to appear.*

Touch Screen:

1. Tap the *lower left corner* of the touch screen.

If the ENABLE COLOR DISPLAY option has been activated in the ***Setup Menu***, a small block of color will briefly appear in the lower right of the screen to help users identify the new marker color. With each tap of the finger the color block will display a new available color. All markers anchored from this point on will appear in the newly selected color.

Other Devices:

1. **Press the *second* (or *right*) *button* and, while pressing, click the *first* (or *left*) *button* until the desired color is displayed**.

   With each click of the *first* (or *left*) *button*, the active pointer will change to one of the available colors previously selected in the ***Color Palette Menu.*** If the pointer has been disengaged, and the ENABLE COLOR DISPLAY option has been activated, a small block of color will briefly appear in the lower right of the screen to help users identify the new marker color.

   All markers anchored from this point on will appear in the newly selected color.

   NOTE: *Be careful to click the first button rather than press it. Pressing the first button could inadvertently toggle the pointer on/off or cause the* ***Setup Menu*** *to appear.*

CLEARING MARKERS

Once markers (drawing lines and pointers) have been anchored, users may want to clear the screen of all or some of the markers before proceeding to the next point of discussion. Markers may be *erased* one at a time, beginning with the most recently anchored marker, or all markers can be *cleared* from the screen at once. The following are procedures for *erase* and *clear*.

Erasing a Marker

To erase markers one at a time:

Digitizing Tablet:

1. **Press the *tip button* on the UNDO icon located on the tablet *Menu Strip***.

   The most recently anchored marker will disappear. An active pointer will always remain on screen unless the pointer was disengaged by pressing the POINTER ON/OFF icon or by pressing the PROXIMITY ON/OFF icon.

Light pen:

1. **Click the *barrel button* once**.

   The most recently anchored marker will disappear. An active pointer will always remain on screen unless the pointer was disengaged in one of two ways in the ***Setup Menu***: by turning the pointer off in the ***Pointer Menu***, or by activating the PROXIMITY feature in the ***Hardware Setup Menu.***

Touch Screen:

1. **Tap the *upper right corner* of the touch screen**.

   The most recently anchored marker will disappear.

Other Devices:

1. **Click the *second* (or *right*) *button* once**.

   The most recently anchored marker will disappear. An active pointer will always remain on screen unless the pointer was disengaged in the ***Pointer Menu***.

Clearing all Markers

To clear the screen of all markers:

Digitizing Tablet:

1. **Press the *tip button* on the CLEAR icon located on the tablet *Menu Strip***.

   All markers will disappear. An active pointer will always remain on screen unless the pointer was disengaged by pressing the POINTER ON/OFF icon or by pressing the PROXIMITY ON/OFF icon.

Light pen:

1. **Press the *barrel button* until all the markers disappear.**

   All markers will disappear. An active pointer will always remain on screen unless the pointer was disengaged in one of two ways in the ***Setup Menu***: by turning the pointer off in the ***Pointer Menu***, or by activating the PROXIMITY feature in the ***Hardware Setup Menu.***

Touch Screen:

1. **Tap the *lower right corner* of the touch screen**.

   All markers will disappear.

Other Devices:

1. **Press the *second* (or *right*) *button* until all the markers disappear.**

   All markers will disappear. An active pointer will always remain on screen unless the pointer was disengaged in the ***Pointer Menu***.

QUICK NOTES

Because Boeckeler Instruments understands that presenters may need helpful operating tips in the form of pocket-sized notes, rather than in the form of on-screen help messages, we created ***Pointmaker Quick Notes.*** Users may copy the appropriate card, cut it along the dashed lines, then affix it to a 3x5 index card, so that the procedures may be conveniently on hand (or in pocket) during a presentation.

For the Pointmaker with Digitizing Tablet

Side 1 of 2

Pointmaker ® PVI-73D by Boeckeler ®

DRAW

Press *tip button* into *Tracking Area* of tablet and hold while drawing. **Select New Line Style** by pressing tip button on desired line icon. Users of Broadcaster Template must change line style in *Setup Menu*.

POINT

To move active pointer, lightly drag tip across tablet *Tracking Area*. To anchor, click barrel button on stylus. **Select New Pointer** by pressing tip button on desired pointer icon. Users of Broadcaster Template must change pointer type in *Setup Menu*.

ERASE

Press *tip button* on tablet's UNDO icon. Most recently anchored pointer or drawn line will erase.

CLEAR

Press *tip button* on tablet's CLEAR icon. All anchored markers will disappear.

POINTER ON / OFF (& PROXIMITY)

Press *tip button* on tablet's *Pointer On/Off* icon. Alternative is to activate Pen Proximity in *Setup Menu*. Broadcaster Template users may activate Proximity by pressing PROXIMITY icon.

More on reverse side . . .

Side 2 of 2

Side 2

COLOR

Press *tip button* on desired color icon on tablet. Using the color icon overrides any *Color Palette Menu* settings made in the Setup Menu.

BRIGHTNESS

Press *tip button* on desired level on tablet's *Brightness Scale* icon. Left decreases brightness, right increases brightness. Users of Broadcaster template must change brightness in *Setup Menu*.

TEMPLATES

Choose desired paper template, insert under plastic on tablet, and make template setting change in *Setup Menu, Hardware Setup.*

BACKGROUND

Press *tip button* on tablet's *Video* or *Chalkboard* icon for a live video or solid background. Users of Broadcaster Template must change background in *Setup Menu*.

SETUP MENU

Press *barrel button* then press *tip button* so that both are pressed together for about 5 seconds. *SETUP MENU* will appear. Make selections.

For the Pointmaker with Light Pen

Side 1 of 2

Pointmaker® PVI-73L by Boeckeler®

DRAW
Press *tip button* into screen and hold while drawing. **Select New Line Stye:** Enter *Setup Menu,* select *Line Style*.

POINT
To move active pointer, lightly drag tip across screen. To anchor, click tip into screen and quickly release.
Select New Pointer Type: Enter *Setup Menu*, select *Pointers*.

ERASE
Click the *barrel button* once. Most recently anchored pointer or drawn line will disappear.

CLEAR
Press *barrel button* until screen is clear of markers.

POINTER ON / OFF (& PROXIMITY)
Press the barrel button, and, while holding, press the tip button and hold both buttons until the pointer disappears. Release buttons. Repeat procedure to make pointer reappear. This function will operate only if the pointer toggle is enabled in *Setup Menu, Pointers.* Alternative is to activate Pen Proximity in *Setup Menu*, *Hardware*.

More on reverse side . . .

Side 2 of 2

Side 2

COLOR
Press *barrel button* and, while pressing, click *tip button*. Only preset color palette is available. To change palette, go to *Setup Menu*, *Color Palette*.

BRIGHTNESS
Set brightness level of markers by going to Setup Menu. Select *Brightness* option. Adjust level so that markers will contrast with the video image or chalkboard. Moving icon to the left decreases brightness, and moving it to the right increases brightness.

BACKGROUND
Choose *Background* from *Setup Menu*, then choose *Video* or *Chalkboard* for a live video or solid blue background.

SETUP MENU
Press *barrel button* then press *tip button* so that both are pressed together for about 5 seconds. *Setup Menu* will appear. Make selections.

CALIBRATE PEN
Choose *Hardware Setup* from *Setup Menu*, then *Calibration,* then the *Light Pen*. Follow the on-screen instructions.

For the Pointmaker with Touch Screen

Side 1 of 2

Pointmaker® PVI-73 by Boeckeler®

DRAW
Press and drag a finger on the touch screen to draw. ***NOTE:*** *Tapping will drop a pointer*. **Select New Line Stye:** Enter *Setup Menu,* select *Line Style*.

POINT
Tap finger on the touch screen. A pointer will appear and will be anchored where contact was made with the screen. ***NOTE:*** *pressing a finger on the screen will cause a drawing line to begin.* **Select New Pointer Type:** Enter *Setup Menu*, select *Pointers*.

ERASE
Tap finger on upper right corner of touch screen. The most recently anchored pointer or drawn line will be erased.

CLEAR
Tap finger on lower right corner of touch screen. All markers will disappear.

CALIBRATE TOUCH SCREEN
Power up. During copyright message, tap screen anywhere. Follow instructions on *Touch Screen Calibration Menu*. Calibrate whenever a new monitor is used. **More on reverse side . . .**

Side 2 of 2

Side 2

COLOR
Tap lower left corner of touch screen. A small block of color will briefly appear in lower right screen (unless deactivated in *Setup Menu*). Tap again to toggle to next available color. Only preset color palette is available. To change palette, go to *Setup Menu*, *Color Palette*.

BRIGHTNESS
Tap upper left corner of touch screen to access *Setup Menu*. Tap *Brightness* option. Tap desired level. Moving icon to the left decreases brightness, and moving it to the right increases brightness.

BACKGROUND
In *Setup Menu*, tap *Background* option. In *Background Menu*, tap *Video* or *Chalkboard* for a live video background or solid blue background.

SETUP MENU
Tap upper left corner of touch screen. *Setup Menu* will appear. Make selections.

For the Pointmaker with Mouse Pen or Mouse Device

Side 1 of 2

Pointmaker ® by Boeckeler ®

DRAW

Press *first* (or *left*) *button* while dragging the *track ball* across any smooth surface. **Select New Line Stye:** Enter *Setup Menu,* select *Line Style*.

POINT

To move active pointer, drag track ball across any smooth surface. To anchor, click *first* (or *left*) *button* and quickly release. **Select New Pointer Type:** Enter *Setup Menu*, select *Pointers*.

ERASE

Click the *second* (or *right*)*button* once. Most recently anchored pointer or drawn line will disappear.

CLEAR

Press *second* (or *right*) *button* until screen is clear of markers.

POINTER ON / OFF

Press the *second* (or *right*) *button*, and, while holding, press the *first* (or *left*)*button* and hold both buttons until the pointer disappears. Release. Repeat procedure to make pointer reappear. This function will operate only if the pointer toggle is enabled in *Setup Menu, Pointers.*

More on reverse side . . .

Side 2 of 2

Side 2

COLOR

Press *second* (or *right*)*button* and, while pressing, click *first* (or *left*) *button*. Only preset color palette is available. To change palette, go to *Setup Menu*, *Color Palette*.

BRIGHTNESS

Set brightness level of markers by going to *Setup Menu*. Select *Brightness* option. Moving brightness icon to the left decreases brightness, and moving it to the right increases brightness. Model colors and background will be provided on adjustment screen.

BACKGROUND

Choose *Background* from *Setup Menu*, then choose *Video* or *Chalkboard* for a live video or solid-colored background.

SETUP MENU

Press *second* (or *right*) *button* then press *first* (or *left*) *button* so that both are pressed together for about 5 seconds. *Setup Menu* will appear. Make selections.

For the Pointmaker with Wireless Remote Control

Side 1 of 2

Pointmaker ® by Boeckeler ®

DRAW
Press *left button* while moving remote control in midair (remember to point toward remote receiver).
Select New Line Stye: Enter *Setup Menu,* select *Line Style*.

POINT
To move active pointer, move remote in midair without pressing any buttons (remember to point toward remote receiver). To anchor pointer, click *left button* and quickly release.
Select New Pointer Type: Enter *Setup Menu*, select *Pointers*.

ERASE
Click the *right button* once. Most recently anchored pointer or drawn line will erase.

CLEAR
Press *right button* until screen is clear of markers.

COLOR
Press *right button* and, while pressing, click *left button*. Only preset color palette is available. To change palette, go to *Setup Menu*, *Color Palette*.

More on reverse side . . .

Side 2 of 2

Side 2

POINTER ON / OFF
Press the *right button*, and, while holding, press the *left button* and hold both buttons until the pointer disappears. Release. Repeat procedure to make pointer reappear. This function will operate only if the pointer toggle is enabled in *Setup Menu, Pointers.*

BACKGROUND
Choose *Background* from *Setup Menu*, then choose *Video* or *Chalkboard* for a live video or solid-colored background.

BRIGHTNESS
Set brightness level of markers by going to *Setup Menu*. Select *Brightness* option. Moving brightness icon to the left decreases brightness, and moving it to the right increases brightness.

SETUP MENU
Press *right button* then press *left button* so that both are pressed together for about 5 seconds. *Setup Menu* will appear. Make selections.

CALIBRATE REMOTE
Enter *Setup Menu*, then choose Hardware Setup, *Calibration*, then *Remote Control*. Follow on-screen instructions.

Section Three: Commands for Using the RS-232 Port

INTRODUCTION

The following commands can be used to program A/V programmable remote control systems so that each *Pointmaker* **PVI-73** model can be setup and operated from a remote device.

All commands begin with an escape (**ESC**) code followed by the forward parenthesis (**(**). The initiating command then appears as follows:

ESC(

All other characters which follow this command require a combination of alphanumeric codes.

AUTO DETECT (A):

When enabled, the "A" commands tell the ***Pointmaker*** whether or not to automatically detect the type of monitor being used.

Code to enable Autodetect (*default*)**:**

ESC(A1

Code to disable Autodetect:

ESC(AØ

> ***NOTE:*** *The Autodetect command is overridden by the Monitor (**M**) command.*

BACKGROUND (B):

The "B" commands tell the ***Pointmaker*** which background to use.

For a video background:

ESC(BV

For a solid chalkboard background:

ESC(BC

For a video to chalkboard toggle:

ESC(BT

COLOR ENABLE (CE):

The "CE" commands tell the ***Pointmaker*** which colors to enable or disable on the color palette that will be available to presenters. Refer to the "CS" command for how to change the color of a marker using this enabled palette.

To enable a color or colors (red is used as an example)**:**

ESC(CER1

NOTE: *To enable other colors, replace the "**R1**" (or follow the "**R1**") with the desired color code(s).*

Enable White = **W1**
Enable Black = **B1**
Enable Pink = **P1**
Enable Green = **G1**
Enable Yellow = **Y1**
Enable Cyan = **C1**
Enable Red = **R1**

To disable a color (red is used as an example)**:**

ESC(CERØ

> ***NOTE:*** *To disable colors, replace the "**RØ**" (or follow the "**RØ**") with the desired color code(s).*

Disable White = **WØ**
Disable Black = **BØ**
Disable Pink = **PØ**
Disable Green = **GØ**
Disable Yellow = **YØ**
Disable Cyan = **CØ**
Disable Red = **RØ**

CLEAR (CL):

The "CL" commands tell the ***Pointmaker*** to clear the markers from the video overlay.

To clear markers :

ESC(CL

COLOR SELECTION (CS):

The "CS" commands tell the ***Pointmaker*** which colors to attribute to a active pointer or drawing line. These commands will force an "enable" of the color selected without having to enable that color using the CE commands or going to the **Setup Menu**.

To select a new color (red is used as an example)**:**

ESC(CSR

NOTE: *To select a different available color for markers, replace the "**R**" with the desired color code(s).*

Select White = **W** Select Yellow = **Y**
Select Black = **B** Select Cyan = **C**
Select Pink = **P** Select Red = **R**
Select Green = **G**
Next Color = **N** *(Note: this command tells the **Pointmaker** to sequence forward to the next available color that has been enabled).*

To display the color change:

ESC(CSD1

NOTE: *The "Display Color Change" command tells the **Pointmaker** to briefly display a sample block of the new color. This option may be desired if a pointer is not being displayed. The option may not be desired if users wish to change colors during a live broadcast.*

To disable the color change display:

ESC(CSDØ

To toggle the color change display:

ESC(CSDT

DRAW LINE (DL):

The "DL" commands tell the ***Pointmaker*** to draw a line beginning at a certain XY pixel coordinate, and ending at a certain XY pixel coordinate. The pixel coordinate ØØØØØØØØ is at the upper left of the screen. In the command below XXXX=a numeric value for the horizontal axis. YYYY= a numeric value for the vertical axis. The first coordinate series XXXXYYYY is the beginning point of the drawn line and the second series XXXXYYYY represents the end point of the drawn line.

To draw a line:

ESC(DLXXXXYYYYXXXXYYYY

***EXAMPLE**: To begin drawing at the upper left, one might enter the coordinates ØØ25 for the horizontal coordinates of the starting point, and ØØ37 for the vertical coordinates of the starting point. This data is immediately followed by the horizontal and vertical coordinates of the end point; for example, if the horizontal coordinates for the endpoint is Ø478 and the vertical coordinates for the endpoint is Ø4ØØ, then the full command would appear as follows:*

ESC(DLØØ25ØØ37Ø478Ø4ØØ

DROP POINTER (DP):

The "DP" commands tell the ***Pointmaker*** where to drop an active pointer (or cursor) using XY pixel coordinates. The pixel coordinate ØØØØØØØØ is at the upper left of the screen. In the command below XXXX=a numeric value for the horizontal axis. YYYY= a numeric value for the vertical axis.

To move an active pointer or cursor :

ESC(DPXXXXYYYY

EXAMPLE: *To drop an active pointer in the upper left, one might enter the coordinates ØØ25 for the horizontal coordinates and ØØ37 for the vertical coordinates. The command, then, would appear as follows:*

ESC(DPØØ25ØØ37

ECHO (E):

The "E" commands tell the ***Pointmaker*** to echo the input over the RS-232 link, in full, in part or not at all.

To enable an echo of all input:

ESC(EA

To enable an echo of all input except commands:

ESC(EC

To disable an echo:

ESC(EN

INTENSITY or BRIGHTNESS (I):

The "I" commands tell the ***Pointmaker*** at what level to set the intensity or brightness for markers or by how many increments to change that level. The levels can range between ØØØ and 256. In the command below, XXX = the desired numeric value for the brightness level. Positive or negative values may be coded.

To set a brightness level (use S) :

ESC(ISXXX

In the command below, XXX = the desired numeric value by which operators wish to adjust the brightness level. A negative value requires a minus sign before the numeric value XXX.

To change a brightness level (use C):

ESC(ICXXX - OR - ESC(IC-XXX

LINE STYLE (L):

The "L" commands tell the ***Pointmaker*** which style to attribute to a drawing line.

To select a new line style ("fine line" is used as an example)**:**

ESC(LF

NOTE: *To select a different line style replace the "**F**" with the desired style code.*

Fine Line = **F**	Fine Line with Drop Shadow = **SF**
Medium Line = **M**	Medium Line with Drop Shadow = **SM**
Bold Line = **B**	Bold Line with Drop Shadow = **SB**

MARKER MOVE (C):

The "CM" commands tell the ***Pointmaker*** where to move the active marker using XY pixel coordinates. The pixel coordinate of ØØØØØØØØ is at the upper left of the screen. In the command below XXXX = a numeric value for the horizontal axis. YYYY = a numeric value for the vertical axis.

To move an active marker :

ESC(CMXXXXYYYY

EXAMPLE: *To position a marker in the upper left, one might enter the coordinates ØØ25 for the horizontal coordinates, and ØØ37 for the vertical coordinates. The command, then, would appear as follows:*

ESC(CMØØ25ØØ37

MONITOR TYPE (M):

The "M" commands tell the ***Pointmaker*** which type of monitor is being used or which monitor is being switched to, so that the proper signal is output from the ***Pointmaker***. Use "M" commands to override "A" (auto-detect) commands (e.g., when multiple display types are installed).

To select a composite NTSC monitor:

ESC(MCN

To select a composite PAL monitor:

ESC(MCP

To select an NTSC Y/C (S-Video) monitor:

ESC(MYN

To select a Y/C PAL monitor:

ESC(MYP

To select an RGB monitor (for TV or computer):

ESC(MRØ

> ***NOTE:*** *Example is for composite sync NTSC RGB at 15.734 kHz. To select a different RGB signal, replace the "**RØ**" with the desired signal code. **H/V** refers to RGB with separate horizontal and vertical syncs. **V** refers to VGA.*

(television)
RGB (NTSC) with composite sync; 15.734 kHz, 60 Hz = **RØ**
RGB (NTSC) H/V; 15.734 kHz, 60 Hz = **R1**

(**computers using 4 or 5 BNC cables in and out.** *Resolutions are* ***noninterlaced*** *unless otherwise noted;* ***kHz*** *represents horizontal sync,* ***Hz*** *represents vertical sync)*

RGB (VGA) 640 x 350 composite, 31.5, 70 Hz = **R2**
RGB (VGA) 640 x 350 H/V, 31.5, 70 Hz = **R3**
RGB (VGA) 640 x 400 composite, 31.5 kHz, 70 Hz = **R4**
RGB (VGA) 640 x 400 H/V, 31.5 kHz, 70 Hz = **R5**
RGB (VGA) 640 x 480 H/V, 31.5 kHz, 60 Hz = **R7**
RGB (MAC) 640 x 480 composite, 35.5 kHz, 67 Hz = **R8**
RGB (MAC) 640 x 480 H/V, 35.5 kHz, 67 Hz = **R9**
RGB (VGA) 640 x 480 composite, 37.9 kHz, 72 Hz = **RM**
RGB (VGA) 640 x 480 H/V, 37.9 kHz, 72 Hz = **RN**
RGB (SVGA) 800 x 600 composite, 35.2 kHz, 56 Hz = **RC**
RGB (SVGA) 800 x 600 H/V, 35.2 kHz, 56 Hz = **RD**
RGB (SVGA) 800 x 600 composite, 37.9 kHz, 60 Hz =**RW**
RGB (SVGA) 800 x 600 H/V, 37.9 kHz, 60 Hz = **RX**
RGB (Mac) 832 x 624 composite sync, 44.9 kHz, 67 Hz = **R0**
RGB (Mac) 832 x 624 H/V, 44.9 kHz ,67 Hz = **RP**
RGB (SVGA) 1024 x 768 interlaced composite,35.5 kHz, 87/43 Hz = **RE**
RGB (SVGA) 1024 x 768 interlaced H/V, 35.5 kHz, 87/43 Hz = **RF**
RGB (SVGA) 1024 x 768 composite sync, 48.4 kHz, 60 Hz = **RG**
RGB (SVGA) 1024 x 768 H/V, 48.4 kHz, 60 Hz = **RH**
RGB (Mac) 1024 x 768 active high composite sync,48.0 kHz, 60 Hz = **RI**
RGB (Mac) 1024 x 768 active high H/V, 48.0 kHz, 60 Hz = **RJ**
RGB (SVGA) 1024 x 768, composite sync, 56.4 kHz, 70 Hz = **RU**
RGB (SVGA) 1024 x 768, H/V, 56.4 kHz, 70 Hz = **RV**
RGB (SVGA) 1152 x 900 composite, 61.8 kHz, 66 Hz = **RQ**
RGB (SVGA) 1152 x 900 H/V, 61.8 kHz, 66 Hz = **RR**
RGB (SVGA) 1152 x 900 composite, 71.7 kHz, 76 Hz = **RS**
RGB (SVGA) 1152 x 900 H/V, 71.7 kHz, 76 Hz = **RT**
RGB (SVGA) 1280 x 1024 composite, 63.9 kHz, 60 Hz = **RK**
RGB (SVGA) 1280 x 1024 H/V, 63.9 kHz, 60 Hz = **RL**

RGB (PAL) composite,512 x 575, 15.625 kHz, 50 Hz = **RA**
RGB (PAL) H/V,512 x 575, 15.625 kHz, 50 Hz = **RB**

To select a VGA monitor (for computers with DB-15HD connections):

ESC(MV8

> ***NOTE:*** *Example shown above is for SVGA 800 x 600, H/V at 35.2 kHz. To select a different RGB signal, replace the "**V8**" with the desired signal code. Resolutions are **noninterlaced** unless otherwise noted; **kHz** represents horizontal sync, **Hz** represents vertical sync.*

VGA 640 x 350 H/V; 31.5 kHz, 70 Hz= **V1**
VGA 640 x 400 H/V;31.5 kHz, 70 Hz= **V2**
VGA 640 x 480 H/V;31.5 kHz, 60 Hz= **V3**
VGA 640 x 480 H/V, 37.9 kHz, 72 Hz = **V8**
SVGA 800 x 600 H/V, 35.2 kHz, 56 Hz = **V4**
SVGA 1024 x 768 H/V interlaced, 35.5 kHz, 87/43 Hz = **V5**
SVGA 1024 x 768 H/V, 48.4 kHz, 60 Hz = **V6**
SVGA 1024 x 768 H/V, 56.4 kHz, 70 Hz =**VB**
SVGA 1152 x 900 H/V, 61.8 kHz, 66 Hz = **V9**
SVGA 1152 x 900 H/V, 71.7 kHz, 76 Hz = **VA**
SVGA 1280 x 1024 H/V, 63.9 kHz, 60 Hz = **V7**

To select a Macintosh monitor (for computers with DB-15 connections):

ESC(MM5

> ***NOTE:*** *Example shown above is for 832 x 624 composite Macintosh at 44.9 kHz. To select a different Macintosh signal, replace the "**M5**" with the desired signal code. Resolutions are **noninterlaced** unless otherwise noted; **kHz** represents horizontal sync, **Hz** represents vertical sync.*

Macintosh 640 x 480 composite; 35.5 kHz, 67 Hz = **M1**
Macintosh 640 x 480 H/V; 35.5 kHz, 67 Hz = **M2**
Macintosh 832 x 624 composite, 44.9 kHz, 67 Hz = **M5**
Macintosh 832 x 624 H/V, 44.9 kHz, 67 Hz = **M6**
Macintosh 1024 x 768 active high composite, 48.0 kHz, 60 Hz = **M3**
Macintosh 1024 x 768 active high H/V, 48.0 kHz. 60 Hz = **M4**

OFFSET FOR LIGHT PEN (O):

The letter "0" commands tell the ***Pointmaker*** how far to set the light pen offset margin, in terms of numbers of pixels. The pixel distance of ØØØØØØØØ represents "no offset margin". In the command below XXXX=a numeric value for the number of pixels in the horizontal axis. YYYY= a numeric value for the number of pixels in the vertical axis.

To change the offset margin on the light pen :

ESC(0XXXXYYYY

NOTE: *A negative pixel value can also be used. That is, the offset may be commanded in a negative direction horizontally (to the left of the pen tip) or in a negative direction vertically (above the pen tip). A combination of a negative and positive command would appear as follows, where the offset is adjusted slightly above the pen tip, and to the right.*

ESC(0-ØØ25ØØ37

PASS THROUGH (PA):

The "PA" commands tell the ***Pointmaker*** either to turn off the video marker overlay and let the video image alone "pass through" the system, or to turn on the video marker overlay, so that the markers can be viewed along with the video image. ***NOTE****: Pressing any button on a Pointmaker controller while this command is engaged will have no effect. An RS-232 command to disengage the pass through mode must be made before marking functions can resume.*

To enable the pass through mode:

ESC(PA1

To disengage the pass through mode:

ESC(PAØ

To toggle the pass through mode:

ESC(PAT

POINTER MOVE (CM): see also "Marker Move, Marker On/Off "

The "CM" commands tell the ***Pointmaker*** where to move the active pointer using XY pixel coordinates. The pixel coordinate ØØØØØØØØ is at the upper left of the screen. In the command below XXXX=a numeric value for the horizontal axis. YYYY= a numeric value for the vertical axis.

To move a cursor or active pointer :

ESC(CMXXXXYYYY

EXAMPLE: *To position a cursor in the upper left, one might enter the coordinates ØØ25 for the horizontal coordinates, and ØØ37 for the vertical coordinates. The command, then, would appear as follows:*

ESC(CMØØ25ØØ37

POINTER TYPE (PT):

The "PT" commands tell the ***Pointmaker*** which type of pointer to display on screen, if any, and whether or not to enable the pointer toggle.

To select a new pointer type (an up arrow is used in the example)**:**

ESC(PTUØ

> ***NOTE:*** *To select a different pointer type, replace the "**UØ**" with the desired pointer.*

Up Arrow = **UØ**
Down Arrow = **DØ**
Left Arrow = **LØ**
Right Arrow = **RØ**
Up Left Arrow = **UL**
Up Right Arrow = **UR**
Down Left Arrow = **D**
Down Right Arrow = **DR**

Circle = **C**
Small circle = **SC**
Cross hairs = **P**
Small cross hairs = **SP**
No Pointer = **N**
Next Pointer = **T5** *(**NOTE:** This command tells the **Pointmaker** to sequence forward to the next pointer type).*

To enable the pointer toggle:

ESC(PTT1

To disable the pointer toggle:

ESC(PTTØ

To turn the pointer off:

ESC(PTT2

To turn the pointer on:

ESC(PTT3

To toggle the pointer on or off:

ESC(PTT4

PROXIMITY ON/OFF (PX):

The "PX" commands tell the ***Pointmaker*** either to turn on or off the pen proximity feature that affects digitizing tablets and light pens. When proximity is on, active markers will disappear as soon as the pen is lifted from the drawing area. When proximity is off, active markers will remain on screen, whether the pen is near or far from the drawing area.

To enable proximity:

ESC(PX1

To disengage proximity:

ESC(PXØ

To toggle proximity on and off:

ESC(PXT

RESTART POINTMAKER (RS):

The "RS" command tells the ***Pointmaker*** to restart. All anchored markers will be saved. A restart is desired usually when a new controller or monitors has been added to a system configuration. Detection of the new controller or monitor is made during start-up.

To restart the *Pointmaker* :

ESC(RS

SETUP MENU (SUM):

The "SUM" command tells the ***Pointmaker*** to display the *Setup Menu* from which selections can be made to set the color palette, brightness, videoconference connections, etc.

To display the Setup Menu :

ESC(SUM

TEMPLATE CHANGE (TA) (for digitizing tablet only)**:**

The "T" commands tell the ***Pointmaker*** to use the marking features available on either the *Presenter Template* or the *Broadcaster Template*, both of which are shipped with each digitizing tablet purchased. The *Presenter Template* includes setup icons and all marker types. The *Broadcaster Template* features only the most commonly used markers and no setup icons, and is preferred for on-air use. Be sure the manually change the paper template on the digitizing tablet to match the choice selected here.

To use the Presenter Template:

ESC(TAØ

To use the Broadcaster Template:

ESC(TA1

UNDO / ERASE (U):

The "U" commands tell the ***Pointmaker*** to undo or erase an anchored marker. Each time this command is given, an anchored marker will be erased from the overlay, beginning with the most recently anchored marker.

To undo / erase a marker :

ESC(U

Section Four: Appendices

TROUBLESHOOTING GUIDE

Boeckeler's quality inspectors test each ***Pointmaker*** for software and hardware performance prior to shipment. Therefore, most problems which presenters encounter are related to installation. *Table **4.1*** below describes common problems and their solutions. If, after referring to this table, a problem still exists, call Boeckeler Instruments, Inc., at (800) 552-2262 or (520) 573-7100. Ask for technical assistance. There are no user serviceable parts in the ***Pointmaker***. Do not open the cabinet.

*Table **4.1***

Symptoms	Possible Solutions
The green indicator light on the front of the ***Pointmaker*** does not light up.	**1.** Check that the ***Pointmaker*** is plugged into a live outlet. **2.** On the back panel of the ***Pointmaker***, remove the plastic cover above the power supply connector and check for a blown fuse. Replace the fuse only with a BUSS MDL 1/2 amp slow blow.
Monitor does not light up.	**1.** Check that the monitor is plugged into a live outlet. **2.** Check that the monitor is switched on. **3.** Check that the monitor brightness and contrast controls are properly adjusted.
The ***Pointmaker*** markers appear to bloom.	**1.** Adjust system parameters on the video output device, monitor or camera (if in use) such as contrast, gain, brightness, color, light and intensity. **2.** Decrease brightness of ***Pointmaker*** markers or use a different marker color.

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Symptoms	Possible Solutions
Monitor lights up but does not display a picture.	**1.** Check that the video source and ***Pointmaker*** are each plugged into a live outlet. **2.** Check that the video source and ***Pointmaker*** are both switched on. **3.** Check that the proper cables are connected to the proper connectors on the video source, the ***Pointmaker*** and the monitor. Some sources and monitors have multiple output and input connectors. Consult your video or computer manuals for correct connection information. **4.** If the video source or monitor has a switch for 75 OHM or high Z, ensure this switch is in the 75 OHM position. **5.** On the back panel of the ***Pointmaker***, remove the plastic cover above the power supply connector and check for a blown fuse. Replace the fuse only with a 1/2 amp slow blow. A spare fuse is provided. **6.** Bypass the ***Pointmaker*** by connecting the monitor directly to the video source. If the video image still does not appear, have the video source and monitor checked.
Monitor automatically adjusts brightness so that video image is dull while markers are bright.	**1.** Monitor is automatically adjusting for the overall brightness level of the markers *and* the video image. On the ***Pointmaker***, enter SETUP MENU and select the BRIGHTNESS option. Tone down the brightness level of the markers. The monitor will adjust accordingly.

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Symptoms	Possible Solutions
Video image on monitor scrolls.	**1.** If using RGB input, ensure that the the ***Pointmaker*** horizontal and vertical sync connectors are also being used or that the RGB source is composite sync.
Monitor displays a scrambled picture.	**1.** Check the horizontal hold control on the video monitor for proper adjustment. **2.** Check that the Dual Voltage Switch (110V/220V) located on the back panel of the ***Pointmaker*** is properly set. **3.** Monitor is not compatible with video source. Use compatible system. **4.** Check to be sure that the video in and out connectors on the ***Pointmaker*** are secure. **5**. If there is no RGB or RGB H/V input to the ***Pointmaker*** (i.e., there is output only), the ***Pointmaker*** will automatically assume that a 15.75 kHz signal output is desired. If another signal is desired, then input a video source that will output the desired frequency.
Light pen, mouse pen or remote control will not operate properly.	**1.** Refer to specific section on controllers entitled *Components*, which begins on page 7.
GyroPoint remote device or Elographics touch screen will not operate properly.	**1.** Refer to section on controllers entitled *Components* on page 7 **AND** the manufacturer's operating instructions that came with the controller. For touch screens, calibration from copyright message may be needed.

THE POINTMAKER AND WINDOWS 95

As noted in the introduction to the *Operating Instructions*, the ***Pointmaker®* PVI-73** is compatible with most computer video standards. When used with a Microsoft Windows® 95 operating system, the video display settings may not be compatible with the ***Pointmaker***. Standard scan rates that are compatible with the ***Pointmaker* PVI-73** are listed in the RS-232 monitor commands, beginning on page 101.

If your application includes operation with Windows 95, and the ***Pointmaker*** markers scroll vertically up or down the screen, try changing the display setting of the computer system. Adjusting the display setting of the computer can provide a different video scan rate, one of which may be compatible with the ***Pointmaker***.

The computer may have a display utility program present, like *SciTech Display Doctor, Diamond InControl Tools* or *Matrox MGA Power Graphics*. Some display utilities can be purchased and downloaded from the Internet.

For display utilities that permit the user to change the horizontal scan rate or vertical refresh rate:

1. Select a resolution, maximum horizontal scan rate, and a maximum vertical scan rate that are compatible with the computer hardware, the ***Pointmaker***, and the display monitor/projector. You will need to restart the computer before changes can be activated.

For Windows 95 Display Settings that permit a change in monitor type:

If an independent display utility or video driver was not installed, you may want to change the display type by using the settings commands that came with Windows 95.

1. Select START < SETTINGS < CONTROL PANEL < DISPLAY.

2. In the **Display Properties** window, click on the *Settings* tab.

3. Select the *Change Display Type* button.

4. In the **Manufacturers** window, select *Standard Monitor.*

   A. For SVGA models: Under "model," choose *Super VGA* with a resolution that is compatible with the computer hardware, the ***Pointmaker***, and the display monitor/projector. For resolutions and scan rates compatible with the ***Pointmaker***, refer to RS-232 resolutions listed on pages 101-103.

5. Once selections are complete, return to the **Settings Menu** and click *Apply*. You will need to restart the computer before changes can be activated.

If you have questions, call Boeckeler Instruments at (800) 552-2262 or (520) 573-7100, or E-mail: boecklr@primenet.com.

GLOSSARY

ACTIVE POINTER
-- the arrow, cross hairs or dot which is positionable, often used as a pointer, but also used to position the starting point of a freehand drawing. When the active pointer is *anchored*, another identical active pointer appears on screen. One active pointer is always displayed while marking, unless the pointer has been disabled.

ANCHORED POINTER
-- the opposite of an *active pointer*. An anchored pointer has been placed in a fixed position on the ***Pointmaker*** overlay and cannot be moved again. However, anchored pointers or drawn lines (which are always anchored) may be erased or *cleared*.

ARROW POINTERS
-- the 8 different arrows which may be selected and placed on a ***Pointmaker*** overlay, in any number and in combination with other *markers*.

BACKGROUND
--the area behind the ***Pointmaker*** markers. Presenters may choose a source video background or a solid background.

BLOOM
-- markers or text which enlarge or blur on the monitor due to excessive brightness.

CLEAR
-- the action on the controller which allows presenters to clear the overlay of all markers at once. A single *active pointer* will remain on screen unless the pointer has been disabled.

CLICK
-- the action of quickly depressing and releasing a button on the ***Pointmaker*** controller, as opposed to a *press* of the button.

COLOR PALETTE
-- a user-defined group of colors which may be attributed to each active pointer or drawn line before anchored. From 1 to 7 colors may be selected for this palette.

CONNECTOR
-- hardware installed on cable ends to provide cable attachment to an input or output device. Input and output device ports which mate with this hardware are also called connectors.

CONTROLLER
-- a device that controls the selection, positioning, anchoring and clearing of markers on the ***Pointmaker*** overlay. Such devices for the ***Pointmaker*** include a light pen and digitizing tablet -- each sold as options by Boeckeler Instruments. Other compatible controllers include Elographics IntelliTouch and AcuTouch touch screens, some wireless remote control remote devices, and other mouse devices.

DRAW
-- the ***Pointmaker*** feature which allows presenters to freehand draw or write over a video or computer image.

DROP SHADOW
-- the ***Pointmaker*** option which allows presenters to attribute a shadow to drawing lines for the purpose of creating a line that stands out from the video image. Most colors have a black drop shadow. Black has no drop shadow.

EIA RS-170
-- the specifications describing monochrome electrical performance standards issued by the Electronic Industries Association (EIA). Also referred to as RS-170 (Recommended Standard). The EIA standard is used in North and South America, Japan and most of Asia.

ERASE / UNDO
-- the action on the controller which allows presenters to erase anchored markers on an overlay one at a time, beginning with the most recently anchored marker.

MARKERS
-- pointers (arrows, cross hairs, dots) and drawn lines which can be placed and anchored on a ***Pointmaker*** marker overlay.

NTSC
-- the commonly accepted term describing the composite color version of the EIA RS-170 video standard. The color version of EIA RS-170 is in process of standardization by the Electronics Industries Association (EIA). NTSC is used in North and South America, Japan and most of Asia.

OFFSET
-- the ***Pointmaker*** option which allows presenters to set the margin between the point the optional light pen touches the screen and the point where freehand drawing is to begin.

OVERLAY
-- a combination of one or more markers (pointers and drawn lines) placed on the screen using the capabilities of the ***Pointmaker***. These markers overlay a chosen video image. While the markers are visible, the actual overlay is invisible, allowing users to mark directly on top of a video image (or solid background if selected in the ***Setup Menu***).

PRESS
-- the action of depressing and not releasing a button on the ***Pointmaker*** controller, as opposed to a *click* of the button. A press is discontinued after the desired effect takes place on the screen.

PROXIMITY
-- a feature of the **PVI-73** that affects the light pen or digitizing tablet. When proximity is activated, the active marker automatically disappears each time the pen is lifted from the drawing area.

VIDEO SOURCE
-- a device from which the ***Pointmaker*** receives a video image, incorporates the ***Pointmaker*** graphic overlay capabilities, then outputs to the corresponding monitor. Examples of video sources include VHS recorder/players, cameras, VGA computers, standard television sets, teleconference equipment, slide to video converters, visual presenters and more.

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