

# System 6 Water Polo



## For the System 6 Sports Timer Software User Guide

F872 Rev. 1107



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# 1

## INTRODUCTION

Thank you for purchasing the System 6 Water Polo program for your System 6 Sports Timer. Water Polo is a full-featured, yet easy-to-use automatic game timing and scoring program.

You may also purchase shot clocks from CTS. Contact Colorado Time Systems' Sales Department at sales@coloradotime.com or 800-279-0111 x250 or 970-667-1000 x250, or visit our website at www.coloradotime.com for further information.

## Resources

If you should experience difficulties with any of your Colorado Time Systems' equipment, we have many resources to help you:

- **Website:** www.coloradotime.com  
The customer support section includes
  - **Tips**
  - **Manuals** which can be viewed, printed, or downloaded
  - **Software updates**
- **Email:** customerservice@coloradotime.com
  - **Telephone:** 800-287-0653 x256 or 970-667-1000 x256

## Water Polo Contents

Your Water Polo package contains the following items:

- System 6 Water Polo Keyboard Insert (part #012-415)
- Water Polo Interface Box with Cable (part #WPI6)
- One Push Button (part #PB-6)
- Water Polo User Guide (part #F872)

Immediately upon receiving your Water Polo package, perform the following steps:

- 1) Open all boxes and remove protective packaging.
- 2) Inspect all parts for damage that may have occurred during shipping. Report any damage to freight carrier immediately.

- 3) Use the enclosed Packing List to ensure that you received all items ordered. If any parts are missing, contact Colorado Time Systems' Customer Service Department, extension 256, at 800-287-0653 or 970-667-1000 immediately.

## Installation of Water Polo Software

Your System 6 will already have Water Polo software installed on it if you ordered the System 6 and the software at the same time. Otherwise, you will either receive the file on a floppy disk or electronically (by email or via the web).

Online installation: You can load software that you have purchased from the customer service section of our website, [www.coloradotime.com](http://www.coloradotime.com). After you have purchased the sport, your timer will be authorized to download the Water Polo program directly from the CTS server. Simply connect your timer to the Internet and follow the instructions listed at [www.coloradotime.com](http://www.coloradotime.com) to download your newly purchased Water Polo program

Floppy disk installation: If you want to install from a floppy disk, you can download from the website to a floppy disk. Turn on your timer and after it powers up you will be in the **SPORT LOADER**. Insert the floppy disk into the timer (the drive is on the right side of the timer). Hit the **INSTALL** Softkey and the timer will install the software for you. Remove the floppy when it is finished.

### **Software Updates**

The System 6 has the capability to connect to the Internet in order to download updates for the Water Polo program. To update your software, follow the instructions in the Sport Loader Manual. The Water Polo program should be updated before the beginning of each season.

## Scope of this User Guide

This user guide addresses all issues relating to the normal operation of the Water Polo program on the System 6 Sports Timer. It is written with the beginning timer operator in mind, but also contains detailed information of interest to experienced operators. Use the Table of Contents and Index to locate specific information quickly.

This manual is not intended to be a guide to the game of Water Polo.

References to keyboard keys and softkeys appear in ***bold italic*** type in this manual.

## Organization of Manual

Chapter 1 - Contains introductory and background information on the Water Polo program.

Chapter 2 - Covers Water Polo hardware and program setup and basic operating instructions, including instructions to help you begin using Water Polo on your System 6 right away.

Chapter 3 - This is the Reference section which describes in detail the operation of all Water Polo program features. It includes descriptions of all key functions and contains display screen examples. Use this chapter to learn how to use specific features or to refresh your memory on any aspect of Water Polo software.

Appendix A: Maintenance. Describes routine maintenance to keep your System 6 Water Polo hardware functioning correctly.

Appendix B: Specifications and power requirement information.

Appendix C: Set up information, including scoreboard module configuration, sample templates for matrix and video boards, and an equipment setup diagram.

Appendix D: Menu Tree. This appendix provides an easy-to-read guide which shows the progression of options displayed on the softkeys.

Index: Provides quick access to specific information. The index is cross-referenced and organized to make finding information in this user guide fast and easy.



# 2

## Setup/Operation

The first part of this chapter gives basic information about your System 6 Sports Timer and describes how to set up your Water Polo hardware and program. Setup is easy, and must be done correctly to ensure proper operation of your Water Polo program and System 6 Sports Timer. The second part of this chapter gives you step-by-step instructions for using the System 6 with Water Polo to control a game.

### **Battery**

An internal lithium ion battery provides backup power in case of emergency or power outage. To charge the battery, plug the System 6 into a grounded power outlet with the unit turned off. The charge time of the battery is a minimum of 3 hours, or overnight. The battery will provide approximately 45 minutes of usage time. This can be increased to 1 hour after 4 to 5 cycles of fully charging and fully discharging.

If you are discharging the battery, go to the Sport Loader Menu and let the timer run until it dies. CTS recommends completely discharging the battery once a year.

### **Proper Shutdown Procedure**

When finished using the System 6, be sure to properly shut down your timer. From Water Polo there two methods to do this.

First method:

- 1) On the softkey menu, choose *Misc*
- 2) Choose *Shutdown Completely*
- 3) Press yes to confirm that you wish to shut down the timer
- 4) When the X appears on a grey screen, turn off the timer.

Second method:

- 1) On the softkey menu, choose *Misc*
- 2) Choose *Change Sport*
- 3) Confirm that you wish to leave Water Polo
- 3) Choose *Shut Down* from the Sport Loader Menu
- 4) When the X appears on a grey screen, turn off the timer.

# Hardware Setup

Water Polo hardware set up involves connecting the System 6 to:

- Power
- Shot clocks and scoreboard
- Water Polo Interface box (optional, but recommended)
- Game horn
- Printer (if you will be printing the match's log file)

**Power:** Connect the DIN connector from the 15 volt power supply that came with your System 6 to the external power connector on the back of the System 6, and plug the adapter into a working AC outlet. Use only the recommended power supply! Use of any other power supply (including a System 5 power supply) may cause serious damage to your system.

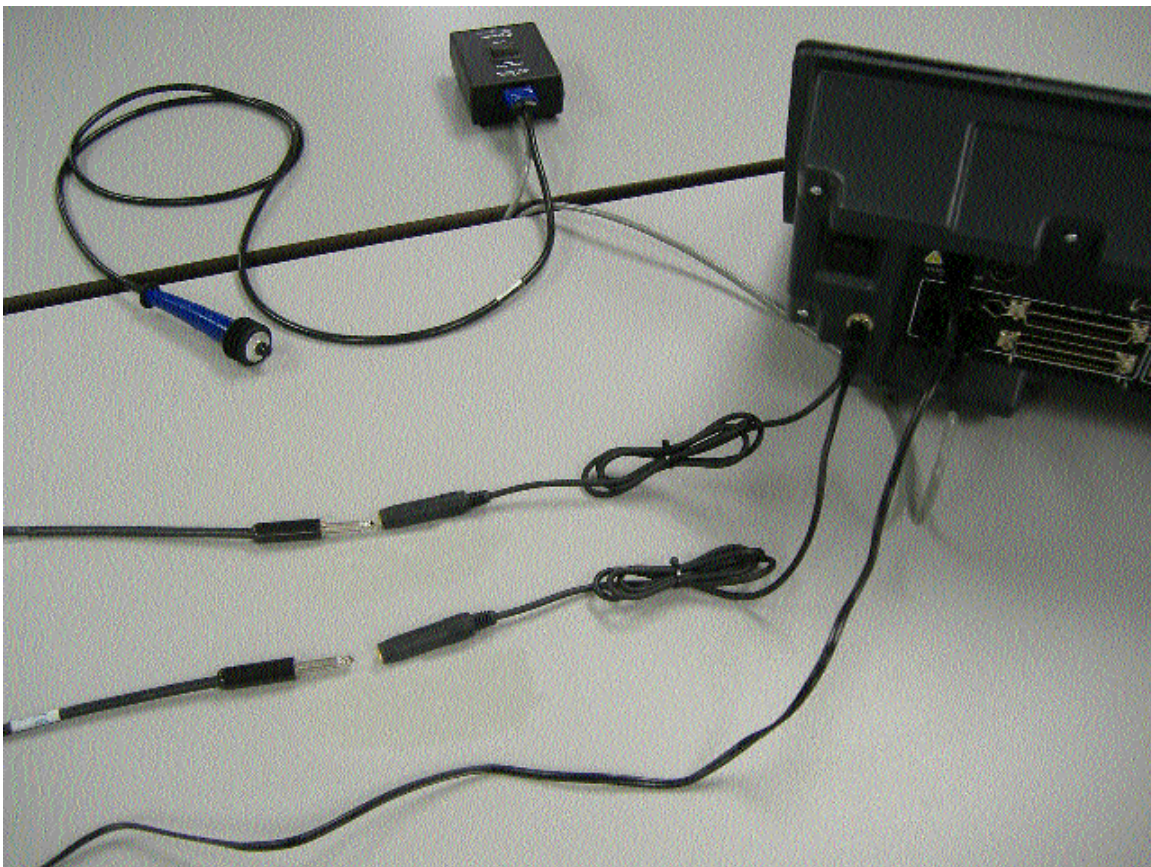


Figure 2-A: Hardware set up -- System 6 Water Polo

**Shot clocks and scoreboard:** Connect a Y-adaptor (Figure 2-B) scoreboard data splitter (CTS part number 015-383) to the scoreboard jack on your System 6. Connect the data cable for your scoreboard to one of side of the Y, and connect the data cable for your shot

clocks to the other. Run data cables between all shot clocks, connecting them to each other and to the timer.



Figure 2-B: Y-adaptor scoreboard data splitter

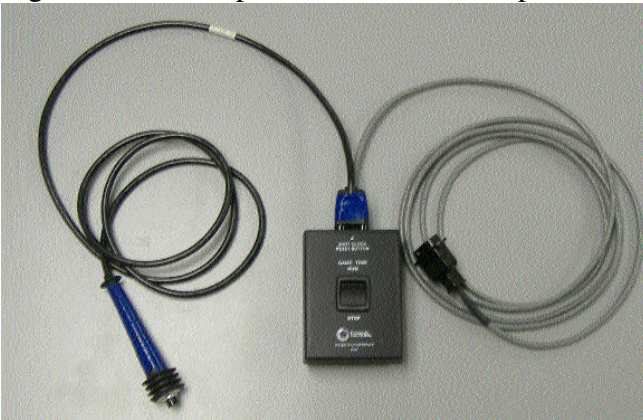


Figure 2-C: Water Polo Interface Box and Pushbutton

#### **Water Polo Interface box:**

If you are using the Water Polo Interface box to control the game and shot clocks, attach a push button to the Interface box (Figure 2-C).

- This push button will reset the shot clock every time it is depressed and released.  
**Note:** This feature allows you to click and hold the button when a foul occurs, and release it when play resumes.
- The rocker switch on the front starts and stops game time.

**Note:** Only the System 6 Water Polo Interface Box will work with the System 6. (The System 5 Water Polo Interface Box will not work with the System 6.)

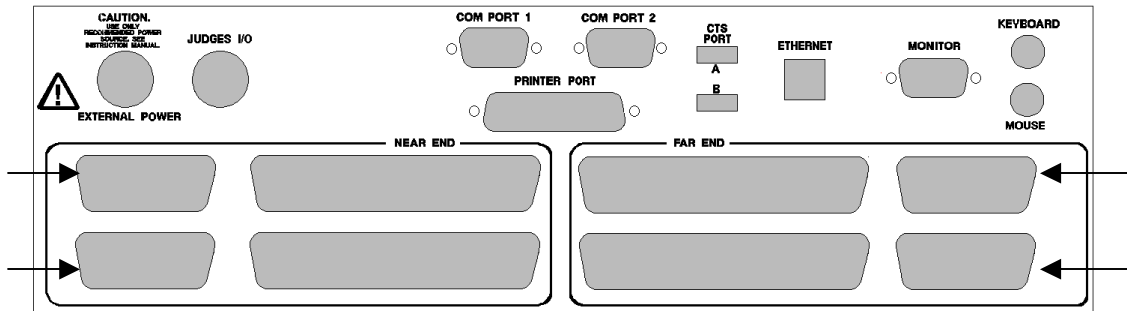


Figure 2-D: System 6 I/O Panel

Attach the Interface Box cable to the back panel of the System 6. You may plug it into any of the four small black connectors on the back panel; the connector fits (and will work) in any of these connections. See Figures 2-A and 2-D for the location of these connectors. Carefully press the cable connector into the connector on the System 6 until firmly seated. The connector automatically locks in place. Unplug the connector by sliding the metal locking bracket toward the connector with your fingernail or a pen, and pulling it out.

### Game Horn

If your game horn is mounted on or near the scoreboard, it should be connected to the scoreboard with a data cable, and it will receive data from the timer through the scoreboard.

If you have a game horn elsewhere (on deck, for example), use data cables to connect it to the shot clocks, which are connected to each other and the timer with data cables.

### Printer

If you are using a printer to print the game log, connect it to the printer port and turn it on. See **Printer Setup** on page 38 for details of setting up your printer.

### Disconnect unneeded equipment

If you share the System 6 with other aquatic sports, make sure that touchpad and backup cables, judges I/O cables, or other peripherals not used for Water Polo are disconnected from the timer.

**Keyboard insert:** If the keyboard insert in your System 6 is not the Water Polo insert, remove it by sliding it out of the keyboard pocket. Slide the Water Polo keyboard insert into the keyboard pocket.

**Check if software is loaded:** Before you can run Water Polo, it must be installed on your System 6 Sports Timer. Turn on your System 6. If it is already installed, Water Polo appears as a softkey on your Sport Loader Menu as shown in Figure 2-E. If the program is not installed, follow the installation instructions included with the Water Polo program, or on page 2 of this manual, to install it. Refer to **Appendix C** for a Water Polo pool diagram including hardware set up.

# Operation



Figure 2-E: Select Sports Menu

## Using Water Polo

To begin using Water Polo, turn on your System 6 and after it comes up select the softkey labeled **Water Polo**. The Water Polo software loads and the Main Menu screen for Water Polo will appear. See Figure 2-F for an example Main screen.

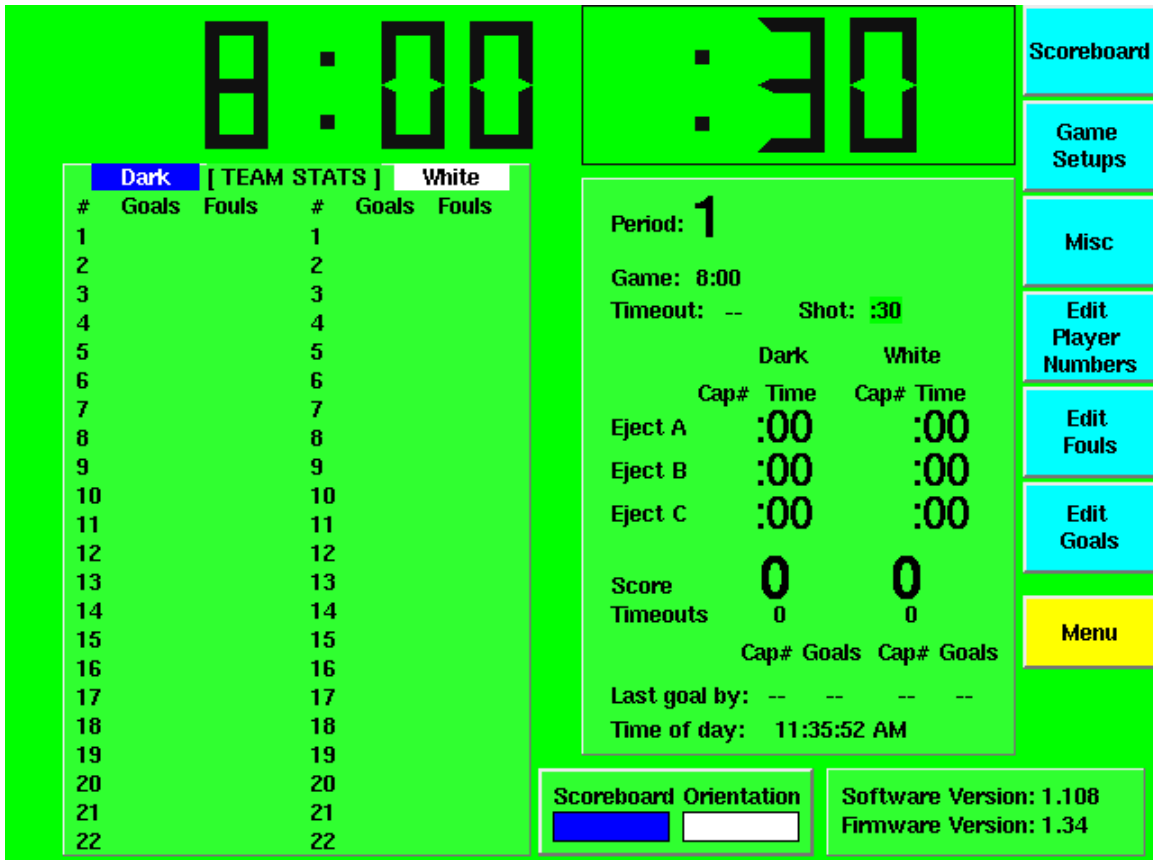


Figure 2-F: Water Polo Main Screen

The System 6 helps conduct water polo games by keeping track of:

- Time remaining in each period or break
- Shot clock time
- Time out time and number of time outs remaining for each team
- Up to three player eject (exclusion) times for each team
- The number of fouls for each player
- The score of the game
- Which players have scored

It also can display any or all of this information on your scoreboard. See **Appendix C** for scoreboard module configuration.

This section refers to many keyboard keys and softkeys. Keyboard keys are on the lower keyboard of the System 6. Softkeys are on the upper portion of the System 6, to the right of the screen, and are used to select items displayed on the screen. For more information about a key, including its location and use, refer to Chapter 3.

When you run the Water Polo program, the Main screen (Figure 2-F) appears. All periods and break times are set to default values. If any of the times displayed are not correct for your game, refer to the **Game Setups Softkey** section, beginning on page 3-8, for instructions on changing them. **SETUPS** allows you to set the parameters of a game

in advance so that the game will proceed smoothly. You can set Period Time, Break Time, Shot Clock Time, Eject (Exclusion) Time, Timeout Time, Number of Timeouts, Length of Horn Time, the Scoreboard Module that each horn will sound on, how individual scoring and fouls are displayed on the scoreboard, and how Player Ejects (Exclusions) are handled on the scoreboard. Though the timer always uses .001 second accuracy internally you may set the accuracy that you wish displayed on the scoreboard. This accuracy only shows during **STOP TIME** or when you are in the final minute of a period. When the period and break times are correct, you are ready to begin the game. You may save all values that are unique to your particular games.

### **Game Clock**

To start the main **GAME CLOCK**, press **start/stop** on the keyboard or use the rocker switch on the external **Water Polo Interface Box**. This will cause both the game clock and shot clock to both start or stop. You can stop the game clock from the keyboard even if the Interface Box is set to RUN. If you then wish to **START** the game from the **Interface Box** you will need to switch it to **STOP** then back to **RUN**.

### **Shot Clock**

The **SHOT CLOCK** will start when the game clock starts. You can reset the clock by hitting the **RESET** button on the bottom left side of the keyboard or by using the push button connected to the external **Water Polo Interface Box**. This will put the shot clock back to full shot time as you have defined it. The shot clock only stops when the game time is stopped or when it counts down to zero.

### **Sounding the Horn**

At the end of each period the **GAME CLOCK HORN** will sound and when the **SHOT CLOCK** goes to zero its attached horn will sound. You may also sound all horns by simultaneously hitting the pair of keyboard keys labeled **HORN** on the bottom left side of the keyboard. **GAME HORN** and **SHOT HORN** can be sent to separate horns or to the same horn (see Chapter 3).

### **Keeping Score**

When a team scores a goal, simply press **score + 1** on the keyboard for the appropriate team. The current score appears both on the display screen of your System 6 and on the scoreboard. You then have the opportunity to enter the cap number of the player that scored the goal. Type the number with the keypad on the right side of the keyboard and press enter. The system not only keeps track of the team totals but will also keep track of the number of goals that each individual player has scored. You can see a summary of each player's goals on the main screen. This information can be displayed on the scoreboard. There are a number of options as to how this data is displayed, which you choose in **GAME SETUPS**. If you press **score + 1** by mistake, press **score - 1** to remove the erroneous goal from the current score displays.

## **Player Eject (Exclusion)**

When a player is ejected, or excluded, press eject for the first open eject line, **A**, **B**, or **C**, for the appropriate team (the program actually will place the ejected player in the highest available slot no matter which button is hit). You then have the opportunity to enter the ejected player's cap number. Type the number with the keypad on the right side of the keyboard and press *enter*. The timer then adds one foul to the player number you entered. You can see a summary of each player's fouls on the main screen.

Note: If you do not want to enter a player number, press Quit or Enter to clear the display screen and return the keyboard to normal operation.

The eject (exclusion) time is set in **GAME SETUPS**. To edit an individual eject time during an ejection, you must first stop the game time, and therefore the game clock, and then press *edit eject time* key for the desired player. Type the correct eject time using the numeric keypad and press *enter*. Press *start/stop* to re-start the game. When a player's eject time expires, the eject timer displays **00** on the screen (it just blanks on the scoreboard).

## **Overtime**

If a game is tied at the end of regulation time, and there will be an overtime period, merely hit **Period +1** key. This will take you into the **Break Period** before the overtime begins. You may edit all period times and break times in **Setups** as detailed in Chapter 3. All other operations are identical to a regular game. If the overtime continues again just hit **Period +1** key to go to the next **Overtime Break Period**, and then on to the next Overtime Period.

### **Pre-match checklist:**

- ❑ Inspect the back of the timer, and clean connectors as necessary (see Appendix A for details).
- ❑ Inspect all cables and connections and clean as necessary.
- ❑ Connect all components
- ❑ Test all components:
- ❑ Verify that you have plugged the timer into a working power outlet (if the timer is running from battery backup, it will say “The System 6 is operating on BATTERY.” If this message is not present, the System 6 is getting power from the power outlet.
- ❑ Start and reset shot clocks from the timer keyboard, and verify this shows on the shot clocks
- ❑ Start and reset the shot clocks from the push button and verify this shows on the shot clocks
- ❑ Add points to each team’s score, and verify that this shows on the scoreboard
- ❑ Allow the shot time to count down to zero and verify that the shot clock horns sounds
- ❑ Allow the period time to count down to zero and verify that the game horn sounds. You can temporarily shorten the period time to allow this countdown to go more quickly.
- ❑ Ensure that all times (period, shot, etc) are returned to the correct values. Ensure that the score are returned to zero-zero. You can do this by using the *New Game* button in the *Misc* menu.

### **After-match checklist:**

- ❑ Dry any equipment that got wet.
- ❑ Coil cables carefully and store all equipment in a safe, dry place
- ❑ Charge shot clocks if they are run from battery and will be needed again soon
- ❑ Charge the System 6



# 3

## Reference

This chapter describes in detail the operation of the Water Polo Program, the function of each key on the keyboard, and all softkey functions. Screen display examples appear as appropriate. Use it as a reference to learn about individual features and functions of Water Polo. To locate specific information quickly, look up the desired feature in the Index or Table of Contents.

### Display Screen

The Water Polo Program uses the screen to communicate a wide range of information including running game time, shot clock, eject (exclusion) times, score, and timeouts. The screen includes a set of MENU identifier tabs in the lower-right corner of the screen below the bottom softkey. As you progress through various display screens using softkeys, a new identifier appears on top of the previous one to indicate the current screen. To return to the Main screen, press quit one or more times.

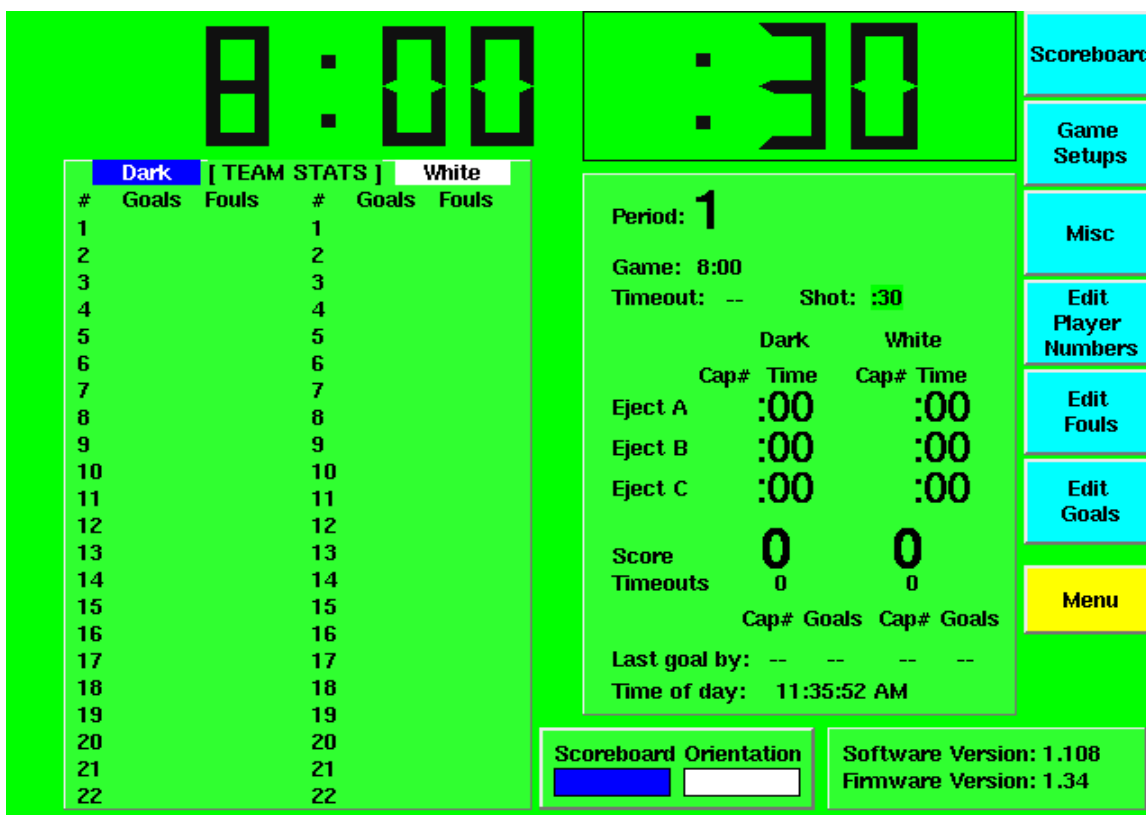


Figure 3-A Water Polo Main Screen

# Keyboard

This section describes the function of the keys on the Water Polo keyboard insert. The keys are described in order as they appear from left to right on the keyboard. Refer to the Index to locate a specific key description quickly. References to keyboard keys and softkeys appear in *bold italic* type in this manual.

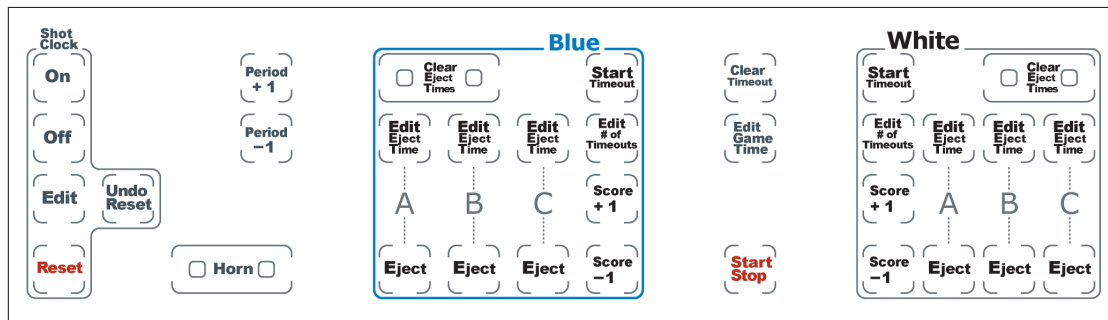


Figure 3-B: Water Polo Keyboard Insert

## Shot Clock On/Off/Edit/Reset

There are 5 keys for the SHOT CLOCK. **On** will turn the clock on if it is currently off. **Off** will turn the clock off if it is currently on.

**Edit** will allow you to edit the time; this only works if the game clock is STOPPED. The **Shot** time will be highlighted on the control screen and you can type the desired shot time using the numeric keypad and then press **enter**. The new shot time is displayed on the screen and appropriate scoreboard modules (see **Appendix C** for scoreboard module configuration).

**Reset** will reset the shot clock to the time that is defined for it in **Game Setups**. The clock can also be reset by a button connected to the **Water Polo Interface Box**. If you mistakenly reset the shot clock, the **Undo Reset** key returns the shot time to what it was before **Reset** was pressed.

Refer to the **Game Setups** softkey section of this chapter for instructions on setting the default shot time as well as what to display at the end of periods when there is less game time than the default shot time.

## **Period + 1**

Moves the game timer to the next timing period. Allows you to select the next timing period manually instead of waiting for the game timer to expire for the current period. This key will only work when the game clock is STOPPED. This key moves you from a game period to the break before the next period, or from a break to the next game period. Note that pressing this key resets the timer for the period you were timing.

## **Period – 1**

Moves the game timer to the previous timing period. Allows you to select the previous timing period manually. This key will only work when game clock is STOPPED. This key moves you from a game period to the preceding break, or from a break to the preceding game period. Note that pressing this key resets the timer for the period you were timing. If you need to set the time, press the *Edit Game Time* button on the console, enter the correct time with the numeric keypad, and press enter.

## **Horn**

This is actually two keys that act as one, which is done as a safety measure to make sure that the horn is not sounded by accident. Both keys must be hit together in order to sound the game time horn as well as the shot clock horn. These keys are active at all times. Sounding the horn does not affect any function of the timer. It will just make noise, which can be useful in telling teams that the game is ready to start, or warn them that a timeout is about to end. You may wish to practice using this key once or twice before using it in a game situation.

## **Blue & White Areas: Keys related to team functions**

There are two sets of keys that relate to team actions. The keys do the same things but they do them only for the specific team. The keys for the BLUE TEAM are to the left and the keys for the WHITE TEAM are to the right on the keyboard and are plainly marked as to which team they are for. Pressing any of these keys only pertains to the team that they are grouped with.

## **Clear Eject Times**

These are actually two keys that act as one, which is done as a safety measure to make sure that you do not clear running eject (exclusion) times by accident. Both keys must be hit together in order to function. When hit they will Clear all three eject (penalty) timers. These keys will clear (reset to zero) any and all eject times for that team. After a score by the opposite team you can clear all current ejects. This is quicker and easier than having to edit each time to zero.

## **Edit Eject Time A, B, C**

Allows you to individually edit the eject (exclusion) times for each of the three eject timers for each team. These keys are only active when the game time is stopped. Press ***Edit Eject Time*** for the desired player, type the new eject time using the numeric keypad and press ***Enter***. The new eject time is displayed on the screen and on the scoreboard, if the board is configured to show this information (see **Appendix C** for scoreboard module configuration).

## **Eject A, B, C**

These keys are used to set up to three player ejection (exclusion) timers concurrently per team (A,B,C). Each key is used independently to keep track of the eject times, though the system will move up automatically if the eject number above it is empty. These keys are active at all times. When a player is ejected, press ***Eject*** to set the eject timer. The default eject time is set in ***Game Setups***. You then have the opportunity to enter the ejected player's cap number. Type the number using the numeric keypad and press ***Enter***. The program will then add one foul to the player number you entered. You can show the number of fouls that each player has on the scoreboard. This feature is also set in the ***Game Setups***. Pressing the ***Eject*** key will also reset the shot clock.

**Note:** If you do NOT want to enter a player number, press ***Quit*** or ***Enter*** to clear the display screen and return the keyboard to normal operation.

If you have given a player an ejection by mistake, correct the number of fouls that the player has listed. Hit the softkey ***Edit Fouls***. Use the ***Team***, ***Up*** and ***Down*** softkeys to select the player that you wish to edit. When you have the player's fouls highlighted use the ***+ Foul*** and ***- Foul*** softkeys to correct the number. Press ***Quit*** to exit the ***Edit Fouls*** menu.

## **Start Timeout**

Starts a timeout for this team. To start the timeout timer, press ***Start Timeout***. This key is only active when the game time is stopped.

## **Edit # of Timeouts**

Allows you to edit the number of timeouts remaining for each team. Each team has a limited number of timeouts, set in ***Game Setups***. If you charge a timeout to the wrong team or if you need to add a timeout for an overtime game you can do it with this key.

## **Score + 1**

Advances the score for this team by one point. This key is active at all times. When a goal is scored, press the ***Score + 1*** key for the appropriate team. You then have the opportunity to enter the scorer's cap number. Type the number in using the numeric

keypad and press *Enter*. The program will then add one goal to the player number you entered. You can show the number of goals for each player has on the scoreboard (see **Appendix C** for scoreboard module configuration). This feature is set in the *Game Setups*. The current scoring is displayed on the screen at all times.

**Note:** If you do not want to enter a player number, press *Quit* or *Enter* to clear the display screen and return the keyboard to normal operation.

### **Score -1**

Subtracts one point from the score of a team. This key is active at all times. This is used to correct a score entered in error; press this key as required to display the correct score.

If you have given credit to a player for scoring a goal in error, or given credit to the wrong player, press the softkey *Edit Goals*. Use the *Team*, *Up* and *Down* softkeys to select the player(s) that you wish to edit. When you have a player's goals highlighted use the *+ Point* and *- Point* softkeys to correct the number. Press *Quit* to exit the *Edit Goals* menu. If you need to erase all of the goals, you can use the *Clear All Goals* option in the *Edit Goals* softkey menu.

## Game Keys

### **Clear Timeout**

This key will clear the current timeout. If you wish a timeout to end before the clock has run down to zero, press this key.

### **Edit Game Time**

Allows you to edit the time remaining in the current period. Refer to the *Game Setups* softkey section in this chapter for instructions on changing the default time for a period. This key is only active when the game timer is stopped. Pressing this key highlights a small window on the main game control screen which shows the current game time. Type the new game time in using the numeric keypad and press *Enter*. If you pressed this key by mistake, press *Quit* to return to the game timing screen without changing the game time.

### **Start/Stop**

This key starts or stops the game timer. Any other clock that is running will also stop, including the shot clock and penalty clocks. This key is active at all times. To start the timers, press *Start/Stop* once; press this key again to stop the timers. The game time and all other clocks can also be started and stopped by the game time switch on the **Water Polo Interface Box**.

## Numeric Keypad

Whenever a numeric entry is required, use the keypad on the far right of the keyboard insert to make the desired entry. Press **C/E** to clear an entry field if you have typed the wrong numbers. After typing in the numbers press **Enter** to accept the entry. There is an **Enter** key to the right of the screen on the console case, as well as one on the numeric keypad itself; you may press either **Enter** key to accept an entry. If you press **Quit** no entry will be recorded -- you will not enter anything and will return to what you were doing.



Figure 3-C: Numeric Keypad

## Console Keys

The four console keys are located to the right of the LCD screen, as shown in figure 3-D. They are the only fixed keys on the timer.

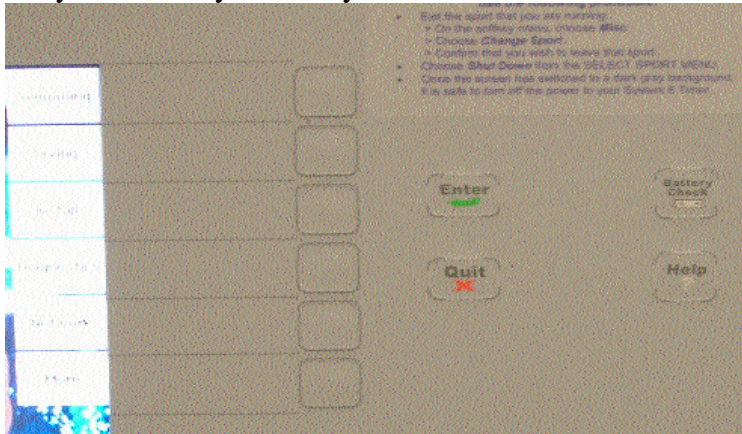


Figure 3-D: Console Keys

## **Enter**

This key works just like the *Enter* key located on the numeric keypad on keyboard. Press either *Enter* key to accept any entry.

## **Quit**

Allows you to leave a function without saving data entered, or to exit the current prompt when pressing *Enter* does not do so. Press *Quit* to exit a prompt after entering data. This key also allows you to cancel an operation that requires an entry without changing the current setting. No information is entered if you press *Quit* instead of *Enter*.

*Quit* will return to the previous menu if you have gone into a sub-menu.

## **Battery Check**

This key currently does not function.

## **Battery Charging**

The internal battery is intended as an emergency source of backup power in case the timer loses power during a game, and is not intended to run the timer for extended periods of time. When the battery is fully charged it should run your timer for 45 minutes to an hour. The internal battery is rechargeable. To charge it, properly shut down your timer and then turn off the power switch on the back panel. Plug the timer into a wall outlet overnight, or for a minimum of three hours. This will fully charge the battery.

## **Help**

The Water Polo program does not currently include any online help information. The *Help* key is therefore inactive.

# Softkeys

This section describes the operation of the Water Polo softkeys. The softkeys are the column of six unlabeled keys to the immediate right of the display screen. The function of each key varies depending on the operation selected. The screen displays the function currently available directly to the left of each softkey. If no label appears next to a softkey, that key is inactive. Figure 3-E shows an example of the main softkey menu ready to start a game. Each softkey's functions are organized in layers or levels. The first level consists of the six softkeys displayed when you first enter the Water Polo Program. This is the main softkey menu. When you press one of these softkeys, a second level offering more specific choices is displayed in most cases. In general, pressing a second level softkey executes an action or prompts you to enter data. On the lower right side of

the screen below the bottom softkey is a graphic that shows the menu that you are in. If you press a softkey by mistake, or want to return to the main screen after using a softkey, press **Quit**. If you have not pressed **Enter** after typing an entry, pressing **Quit** exits without saving that entry. For comprehensive chart of the softkeys menus, refer to the Menu Tree in Appendix D, beginning on page 45.



Figure 3-E: Water Polo Main Softkey Menu

## Scoreboard

This key provides access to special scoreboard control and display features. Press the **Scoreboard** softkey to display the Scoreboard softkey sub-menu. (See **Appendix C** for scoreboard module configuration, and template samples for matrix and video boards.)

### Define Module

This key allows you to send a channel of information to a scoreboard module.

Press the **Define Module** softkey to display your current scoreboard module definitions. The left and middle columns on the screen indicate the scoreboard channel and the display description. The right column indicates the scoreboard module on which this information is displayed as shown in Figure 3-F.

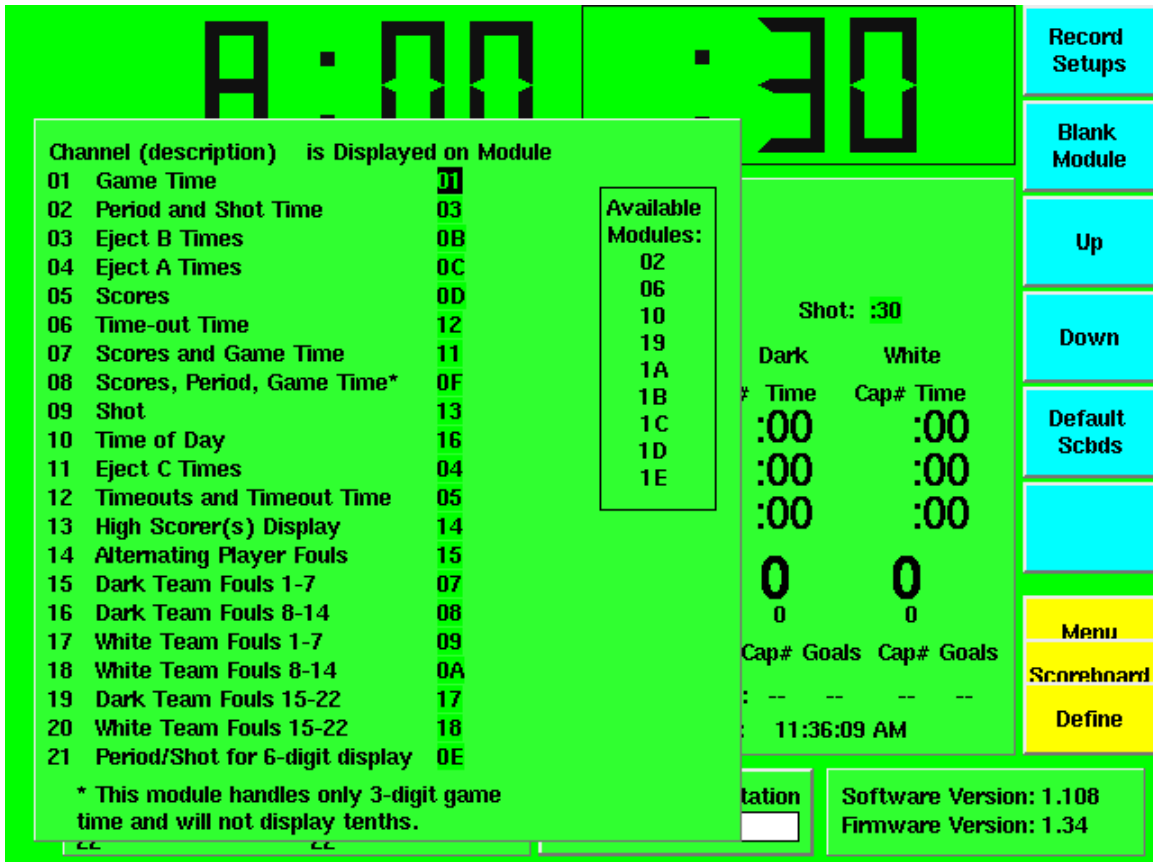


Figure 3-F: Scoreboard Definition Screen

Scoreboard channel information can be displayed in areas you define on a matrix or video board, or on the separate lines, or modules, of a single- or multi-line scoreboard.

Scoreboard module definition for a single-line or multi-line scoreboard is a straightforward operation. Each module of scoreboard has a multi-position DIP switch on its control board, which controls the data that each individual module displays. You could go up on a ladder and change the DIP switch settings in order to get different data to display on that module OR you can redirect the data you wish to that module number from the timer.

To change a module definition, press the *Up* or *Down* softkey to highlight the desired data line that you wish and press *Enter*. You will see the softkeys change to show the letters A - F. Use the numeric keypad to enter numbers and softkeys to enter letters. When you have entered the desired module definition, press *Enter* to accept the entry. If you change the wrong module or enter the wrong information, press *C/E* to clear your entry and try again or *Quit* to go back one level of menu without saving. After defining scoreboard modules, press *Quit* to return to the previous screen.

If there is data that you do not want displayed on the scoreboard you can BLANK it out. Press the *Up* or *Down* softkey to highlight the desired data line that you wish blanked and press the *Blank Module* key. The System 6 screen will show “**Blanked**” instead of a

module number for items that have been blanked. Press **Blank Module** again to cause the data to show again.

You can return to the factory default settings by hitting the **Default Scbds** key.

**Record Setups** will save these changes for future games. If you do NOT hit **Record Setups**, then when you exit from the Water Polo Program, you will lose all the changes you have made and all previously saved settings will return.

### **Scoreboard Test**

Displays the numeral 8 on all available scoreboard modules; the 8's will appear to dance back and forth on the scoreboard. This will test each digit segment for proper operation and each module for proper connection to your timer. Press any other key to end the test.

If any segments or digits do not operate properly, check all cable connections and run the test again. If your scoreboard still does not work properly, it may need service. For CTS boards, email customerservice@coloradotime.com, or call customer service, extension 256, at 800-287-0653 or 970-667-1000.

### **Scoreboard Blank / Scoreboard On**

These two keys will either **Blank** or turn **On** your scoreboard. When you press **Scoreboard Blank**, the board blanks all modules except the Time of Day. If you hit **Scoreboard Blank** a second time it will totally blank your board, including Time of Day.

Press **Scoreboard On** to display information on the board again.

### **Scoreboard Orientation**

This option allows you to choose where on the scoreboard to display each team's information.

**Note:** For consistency with Display Link this setting must be set to "Blue(Left)-White(Right)" for the template items to function correctly.

### **Increase/Decrease Intensity**

These keys allows you to adjust the brightness of the scoreboard display. This feature is only applicable with LED numeric scoreboards.

## Game Setups

This softkey menu allows you to set options controlling the parameters and operation of the game, including period, break, shot, eject (exclusion) and timeout times as well as

timer counting mode. You can also set up a scrolling scoreboard module to show individual scores and players with fouls. Figure 3-G shows the *Game Setup Screen*.



Figure 3-G: Game Setups Screen

### *Navigating Game Setups and saving your work*

There are many pages of options in *Game Setups*; press the *More* key to scroll to the next page of options. The final screen of *Game Setups* allows you to save the setups to your timer (*Record Setups*) or save the setups to disk, or return to the default settings by pressing just one on button.

### **Times: Period/Break/Halftime/Overtime/Shot/Eject/Timeouts**

To set *Period Times*, *Break Time*, *Halftime*, *Overtime*, *Shot Time*, *Eject (Exclusion) Time* or *Setup Timeouts* hit the appropriate softkey. The softkeys will then ask you which one you wish to change; hit the softkey to respond. Type in the time you wish using the numeric keypad and press *Enter*. If you type two numbers they will be seconds. If you type three numbers, then the first one will be minutes and the next two will be seconds.

## Shot Horn Time/Game Horn Time

These keys allow you to set how long the horns for the shot clock and game clock will blow when they are activated (this time is in seconds).

## Time Rounds = Up / Down / <>.5

No matter which method of time rounding you choose, the period is exactly 7:00.000 long (or the exact length of time you select in *Period Times*). Displaying times on the scoreboard, when counting down (as in most game clocks), there are visual problems conveying accurate information (limited digits, and digits becoming a blur when they change too quickly).

Running time is only displayed in full seconds, so the question is what should be displayed when you go from 3.00 seconds to 2.99.

The easy answer would be to change the display from 3 to 2 on the board (in fact this is what the System 5 did). We call this **ROUNDING DOWN** (or truncating) the time: with 2.99 you just chop off the .99 and get 2. When you go from 2.00 seconds to 1.99 you display 1. The problem comes when you go from 1.00 to .99; you would display 0 on the board yet have nearly a full second before the game ends and the horn blows. This causes great confusion for everyone watching the board.

The best answer to the problem is to do what we call **ROUND UP**. This means when game time is more than a full second you display the next higher number. Thus when the time is greater than 1.00 seconds you would display 2 on the board. When you go from 1.01 to 1.00 your display goes from 2 to 1, and when you go from .01 to .00 your display goes from 1 to 0. The game ends, the horn blows and the clock says 0 all at the same time. There are 2 small visual problems with this method. The first, which is only seen if you are displaying stop time in .01 mode, is that you could see a stop time of 2.56 and when the clock started again the board would display 3 on the board for .56 seconds and then roll to 2. This is a very minor problem and easy for the spectator to understand. The second one is at the beginning of the game you will see 7:00 displayed for 1 second. It is unlikely that anyone would even notice this and again easy to understand that 7:00.00 stays up until we get to 6:59.00, at which time 6:59 is displayed.

If you **ROUND UP** you get 0 on the board when the game ends. If you set to **ROUND DOWN** you would normally get 0 on the board when there is nearly a full second left in the game. In this case we display "--" on the board when you go from 1.00 to .99, it will remain on the board for 1 second until the clock runs out, signifying that the game is still going.

<>.5 has all the disadvantages of **ROUND DOWN** except that it only shows "--" for half a second. Again, no matter which method you choose the period is exactly 7:00.000 long (or the exact length of time you select in *Period Times*).

### **Stop Time Shifting=On / Off**

*Time Shifting* pertains only to the scoreboards module 01 and 11 and it only occurs if you have set **STOP TIME** to .01 Sec. **and** if you are under 1 minute left **and** if you have STOPPED the game clock. The scoreboards show running time in full seconds, and only show tenths and hundreds of a second in **STOP** time. With a limited number of digits on the scoreboard to display time, we cannot put up 6:38.74 because there is no room for it. An option is when game time is under a minute, to shift the time over 2 characters and show 56.23 (seconds move to where minutes were and tenths/hundredths move to where seconds were). Tenths of a second have no real meaning when there are 5 minutes left in the game, but quite a bit of meaning with only a few seconds left.

### **EJ Roll Off / On**

Press the *EJ Roll* softkey to move the selection arrow between **Off** to **On**. With Eject (Exclusion) Roll set to *Off* an ejected player who is in the EJECT B line will stay there for the entire eject time. If Eject (Exclusion) Roll is set to *On*, then an ejected player that is in the EJECT B line will automatically move up to the Eject A line when that line's time has expired. For example, if eject A has 9 seconds remaining and eject B has 20 seconds remaining, when eject A expires, the time remaining on eject B, 11 seconds, moves up to the eject A display line. This is useful if you have limited scoreboard modules to display Eject times.

### **Count Up / Down**

This softkey sets the game clock to **Count Up** or **Count Down**. Counting down means starting the period with 7:00 on the clock and counting down to 0 for the end of the period. Counting up means starting the period with 0:00 on the clock and counting up to 7:00 at the end of the period. It is normal to count down.

### **Game Horn Will Sound/Game Horn Won't Sound**

The *Horn Will Sound / Horn Won't Sound* key allows you to turn the Horns **OFF** so that they will not sound. Press the key again to turn them back on.

### **Time by Period / Game**

This key allows you to time by **Periods** or by **Game**. Timing by periods is normal. If you time by game the first period would be from 0 - 7:00, and the second period would be from 7:00 - 14:00, and the third period would be from 14:00 - 21:00, and the fourth period would be from 21:00 - 28:00.

### **Stop Time .01 Sec. / 1 Sec.**

Though we always time internally to an accuracy of .001 second (one thousandth of a second) there is not enough room, or time, to display running times with an accuracy of .01 on the scoreboards. We can only display whole seconds on the scoreboard while the clock is running. We can, however, display time to .01 seconds on the screen and on the scoreboard when the GAME CLOCK **stops**.

Note: Scoreboard channel 01 (module 01) can display GAME time to .01 seconds. Channel 07 (module 11) only has enough room to display .01 seconds when GAME time is less than 1 minute. Channel 08 (module 0F) does not have enough digits available to display game time at .01 second at any time (see **Appendix C** for scoreboard module configuration).

### **Game Horn on Chan.**

There is normally one Game Horn that sounds at the end of each period. At the end of the period, a signal is sent to the horn through the data cable to sound the horn. You need to tell the timer to which channel (thus which scoreboard module -- see Figure 3-F) to send this signal. The ideal setup is to have two different sounding horns connected to your system, one for game time and the other for shot clock. Because there may be times when it is advantageous to have the same horn sound both game and shot clock (i.e., if one of your horns is broken), we allow you to select which channel to send these signals. You can cycle through the channels that are allowed by hitting this softkey. Channels **01, 02, 07, 08, 09** are the only available choices, as these are the channels that put out game clock or shot clock times. Channel 01 is most common.

**Note:** Please refer to Figure 3-F to see which channel is connected to which module.

### **Shot Horn on Chan.**

This key is very similar to the **Game Horn on Chan.** softkey. It sets the channel to which the shot clock horn signal is sent (see Figure 3-F). Channel **02** is most common for Shot Horn

### **Plyr Fouls Off / On**

Player Fouls can be turned **ON** or **OFF**. When the setting is **ON** you will be asked to enter the cap number of the player who committed the foul. The timer will record the number of fouls each player has committed and can display that on the scoreboard. When the setting is **Off** you will NOT be asked to enter the cap number of the player who committed the foul.

### **Cycle Fouls**

Scoreboard channel 14 sends the information to show individuals with fouls. This module will show the DARK TEAM player's cap number and number of fouls that the player has

on the left side of the board while doing the same for the LIGHT TEAM on the right side of the board. The side on which each team appears on the board can be changed by accessing the **Scoreboard Orientation** option. Refer to page 24 for more information on scoreboard orientation. You can cycle through this information **ONLY between PERIODS, ALWAYS, or NEVER**. The display will cycle through each individual with a foul.

### **Time to Cycle Fouls**

If you are cycling through individuals with fouls, this softkey sets how long (in seconds) each individual with fouls is shown on the scoreboard. This is the length of time that the cap # and number of fouls stays on the scoreboard before going to next player.

### **Time to Display Scorer**

Scoreboard channel 13 is an information channel to give recognition to individual scorers (See **Appendix C** for scoreboard module configuration). This module will show the DARK TEAM scorer's cap number and number of goals that they have on the left side of the board while doing the same for the LIGHT TEAM on the right side of the board. The following four game setups softkeys are used to set the details of displaying this information. The side on which the information for each team is displayed can be changed by accessing the **Scoreboard Orientation** option (see page 24).

**Note:** If you are not using the Scoreboard module that displays this information, these options do not need to be set.

The ***Time to Display Scorer*** softkey gives you the option to put just that goal scorer up on the board for a specified amount of time, and then go back to cycling through other scorers after that time has expired. This softkey sets how long you would like to display the most recent goal scorer on the scoreboard in number of seconds.

### **Cycle High Point**

We can cycle through the high scorers **ONLY between PERIODS, ALWAYS, or NEVER**. The display will cycle through only the number players that you ask for in the next question.

### **# of Scorers To Cycle**

This softkey sets how many scorers you would like displayed. You could just do 1 (the player with the most goals), or you may want to show the top 3 scorers, or the top 7 scorers, etc. If you type in a number larger than 12, all scorers for each team will be shown.

## **Time to Cycle High Point**

If you are cycling through scorers, this softkey sets how long (in seconds) each scorer is shown. This is the length of time that the cap # and goals stays on the scoreboard before going to next player

## **Shot > Game Shot = Game Time**

This key lets you choose what the shot clock will display if there is a change of possession near enough to the end of a period that the game clock is less than the shot clock. The options are **GAME TIME**, **FULL SHOT TIME** or **BLANK**.

**GAME TIME:** The default setting is for the shot clock to display actual game time left, as this is the amount of time the players really have to make a shot.

**FULL SHOT TIME** displays the standard shot clock time, even though there is not that much time left in the period.

**BLANK** causes the shot clock to display nothing, as a clue to the players that there is less than a full shot clock left.

## **Timeouts**

This key allows you to designate the amount of time each timeout will last.

## **Record Setups**

The Game Setups that you have selected will remain in effect until you either change them or exit Water Polo. This allows you to select a setup on a temporary basis for a game and then have your timer return to the former setting. If you would like the current Setups to be remembered for future games, press the Record Setups button, which will SAVE the setups in memory.

## **Save Setups To Disk**

This key will save (copy) all of the CURRENT setups to a floppy disk. The disk **MUST** be in the timer when you hit this key. If there is not a disk in the timer you will get an error on the screen for a moment and then it will disappear. This feature gives you the ability to save setups of an unusual game so that you can quickly reload them at a later time to your timer (or someone else's System 6 timer) if you are going to have the same type of game again.

## **Read Setups From Disk**

You may restore all Water Polo setups from a floppy disk that was made by the method described above. Insert the floppy disk into the timer and press the ***Read Setups from Disk*** key. The screen will show the water polo ball crossing it and then start up a new game with the setups loaded from the floppy disk.

## **Load Factory Defaults**

You may return to the factory default settings by pressing this button. The default settings are:

Period time:	8:00
Break time:	2:00
Half time:	5:00
Over time:	5:00
Shot time:	:30
Eject time:	:20
Timeout time:	1:00
# Timeouts:	2

# Misc

From the **MISC** key you can select start a **New Game**, leave Water Polo and **Change Sport**, **Shutdown Completely**, set the timer **Beep Volume**, **Set Time** (time of day) or change screen **Colors**. The Miscellaneous main screen displays beep volume and software version number of the Water Polo program that you are running.

## **New Game**

If you press ***New Game*** the timer will ask you to confirm that you really want to wipe out all of the data that you have and start a brand new game. Generally this is used when running a tournament with multiple games during the day.

## **Change Sport**

If you press ***Change Sport*** the timer will ask you to confirm that you really want to wipe out all of the data that you have and exit from Water Polo back to the Sport Loader menu.

## **Shutdown Completely**

If you hit ***Shutdown Completely*** the timer will ask you to confirm that you really want to wipe out all of the data that you have and completely shut down the timer. When the

black **X** appears on the gray screen you may turn the power switch in the back of the timer to the off position.

### **Beep Volume**

The timer beeps when you hit keys to help you know that the key was hit. In noisy environments you may wish the beep to be louder and in quiet places you might want it softer. The timer allows you to set the volume where you like it. **Beep Volume** can be adjusted for no beep (setting **0**) up to a maximum of **3** for the loudest beep volume. Press the **Record Setups** key on the last screen of the **Game Setups** menu to save your setting.

### **Set Time**

This key will allow you to set the time of day. The Time of Day is always displayed on the bottom of the Main Screen. Enter the time as a 24-hour time (i.e, 3 p.m. is 15:00). The **12 / 24 Hours** softkey allows you to select whether to display a 12 hour clock or a 24 hour (military time) clock during the match. Press the **Record Setups** key on the last screen of the **Game Setups** menu to save your setting.

### **Colors**

You have the ability to choose different screen colors. There are three areas of the screen that you can customize by color: the general **background** color of the screen, the **softkeys** and the **menu** tabs on the bottom right of the screen below the bottom softkey. Currently all of the type is in black. Hit the softkey for the area whose color you wish to change. You now will have three sets of softkeys (15 choices) of different colors to choose from. Press the **Record Setups** key on the last screen of the **Game Setups** menu to save your setting.

### **Log Files**

The Water Polo software records information from the match in an event log, including goals or exclusions, cap number and team of who got the goal or exclusion, score and game time when the event occurred. This key allows you to access these logs and decide whether to print, delete, or save to a disk selected logs.

### **Printer Setup**

This key accesses the setup menu for the printer. Use this menu to select the type of printer that will be used, the type size, lines per inch, as well as entering PCL codes.

## Compatible Printers

There are two basic types of printers. One is a DOS type and takes an ASCII stream of data and prints it. The other is a Windows type of printer and needs a program loaded on your computer called a "Device Driver" in order to print. Many printers can do both.

Not every printer will work with the System 6. This is because most printers do not have device drivers and require your computer to perform all the formatting. Any printer that says it needs the Windows environment probably will NOT work.

Any printer that is compatible with PCL will work. This includes most HP laser printers and most Brother laser printers. The Okidata ML 320 is an acceptable dot matrix option.

Once you have a printer that will work with the System 6 you will need to load special codes into the timer in order to print non-standard print sizes. Most printers will print 10 characters per inch (10CPI) across the page as default (this is a good size print if you have a 6 lane pool). If you wish to print a smaller size (12CPI) you will need to set the size on the printer or enter the corresponding PCL code. These print codes are loaded in the SETUPS area under the "printer" section.

### PCL Codes:

#### Citizen GSX190:

Pica: 27 51 48  
Elite: 27 51 49  
Condensed: 27 51 50  
Super Cond: 27 51 55  
6 LPI: 27 48 50 52  
8 LPI: 27 48 49 56

#### HP-PCL:

Pica: 27 40 115 49 48 72  
Elite: 27 40 115 49 50 72  
Condensed: 27 40 115 49 54 72  
Super Cond: 27 40 115 50 48 72  
6 LPI: 27 38 108 54 68  
8 LPI: 27 38 108 56 68

#### IBM:

Pica: 18  
Elite: 27 58  
Condensed: 28  
Super Cond: (none)  
6 LPI: 27 50  
8 LPI: 27 48

#### Epson:

Pica: 27 80  
Elite: 27 77  
Condensed: 27 80 27 15  
Super Cond: 27 77 27 15  
6 LPI: 27 50  
8 LPI: 27 48

#### Okidata:

Pica: 30  
Elite: 28  
Condensed: 29  
Super Cond: 27 35 51  
6 LPI: 27 54  
8 LPI: 27 56

#### Panasonic:

Pica: 27 80 18  
Elite: 27 80 27 77  
Condensed: 27 80 15  
Super Cond: (none)  
6 LPI: (none)  
8 LPI: (none)

# Edit Player Numbers/Fouls/Goals

These softkeys allow you to edit the player cap numbers, as well as the number of goals and fouls a player has incurred. After pressing the ***Edit*** key, use the softkeys to move the cursor to the correct player and enter the new information.

## **Team**

This key will toggle between the two teams for selecting information to edit.

## **Up and Down**

These keys will move the cursor highlighting the individual player up and down.

## **Enter**

Pressing the **Enter** key will allow you to edit the information for the selected player.

# Appendix A

## Maintenance

This appendix contains information to help you perform routine cleaning to maintain your System 6.

***Caution:** The System 6 uses low-current CMOS components which make battery operation possible. Low current CMOS is **extremely** susceptible to static electricity. Therefore, **do not** open the System 6 case. Refer **all** internal servicing to the factory. Improper servicing could seriously damage all of the sensitive components!*

## Factory Maintenance

Return the System 6 to the factory every 5 to 7 years for the following calibration and testing:

- 1) The accuracy of the timing circuitry can vary with age. The System 6 contains a high-quality crystal oscillator that is guaranteed to be accurate for five years. After five years of service, the oscillator could drift out of tolerance. To ensure accurate race timing, your System 6 should be tested at the factory every five years.
- 2) The battery mounted on the main circuit board that powers the System 6's continuous memory has a manufacturer-specified life span of 10 years. To ensure the integrity of stored data, the battery should be replaced every 5 to 7 years. Replacement of this battery **must** be performed at the factory.
- 3) The rear-panel connectors need to be inspected for corrosion and damage and replaced if necessary.

## Routine Maintenance

### LCD Window

The LCD window is made of non-glare, scratch resistant plastic. Clean regularly with any good cleaner made for clear plastic and a soft cloth. **Do not** use any cleaning products that contain ammonia. **Do not under any circumstances wipe the LCD window with a dry cloth.**

## **Case**

The System 6 case is made of high-impact plastic. Use any neutral detergent to clean the case. Do not use alcohol, thinner or other solvents. These products can change the color or otherwise damage the case.

## **Keyboard Inserts**

The keyboard insert cover and upper overlay should be cleaned with a mild detergent and water solution and wiped dry with a soft cloth as needed. Install the keyboard insert carefully. Guide it into the keyboard pocket, keeping it as straight as possible.

## **Back Panel Connectors and Water Polo Interface Cable Connector**

Inspect the cable connectors on the System 6 back panel and on the cable every time you plug the Water Polo interface box into a connector. All connectors must be corrosion-free if your system is to operate properly.

Clean the cable connectors with a couple of drops of rubbing alcohol and a cotton swab or soft toothbrush. **Never use steel wool or anything abrasive to clean these connectors!**

### **Cotton swab method:**

To clean cable connectors, put two or three drops of rubbing alcohol on a cotton swab (this is NOT the standard cotton swab for your ear but a cleaning cotton swab, which you can get at almost any electrical supply store, such as Radio Shack) and insert the swab into the connector. **Pull the swab straight out.** Move the swab to the next section of the connector and repeat. **Do not slide the cotton swab along the inside of the connector.** Damage to the contacts could result. Rinse the connectors with a damp cotton swab, and then dry with a dry swab using the same motion. Make sure no lint is left in the connector. See Figure A-1.

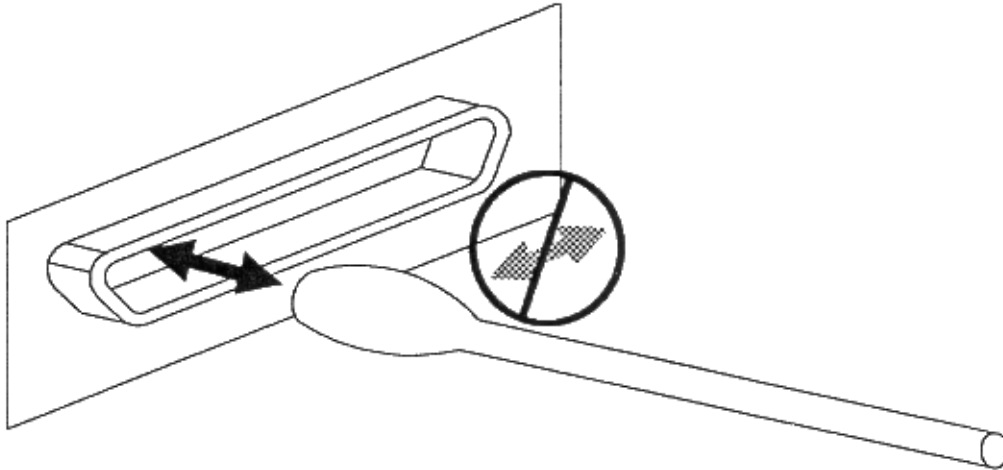


Figure A-1 Clean Data Connectors as Shown

**Toothbrush method:**

Put two or three drops of rubbing alcohol on a clean soft toothbrush. Insert the toothbrush bristles into the connector and scrub gently. Rinse the connectors with a damp lint-free cloth, and dry with a clean lint-free cloth.

**Push Buttons**

Make sure the push button connector fits snugly into the Water Polo Interface Box. Connectors with broken prongs do not fit properly. Refer to Figure A-2. Check connector prongs for corrosion and clean or replace connectors as necessary.

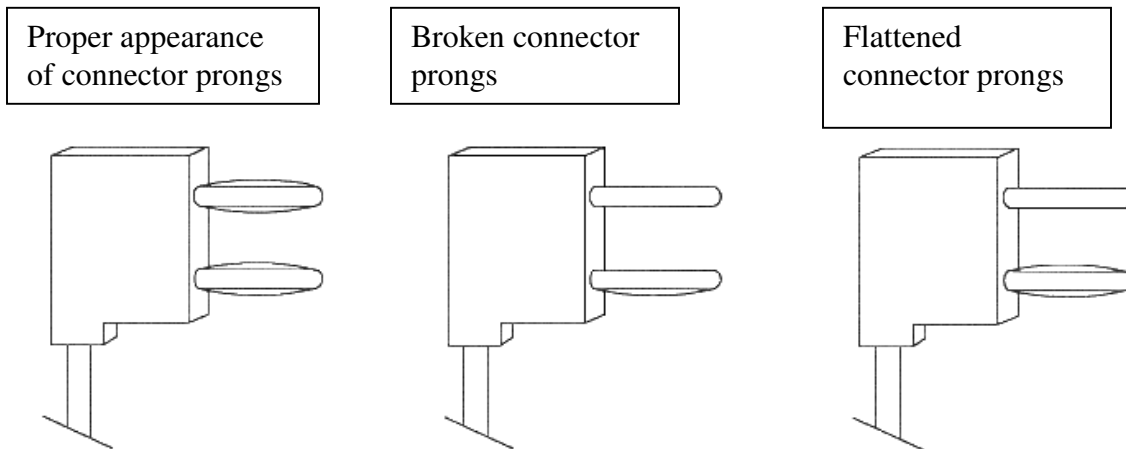


Figure A-2 Inspect Push Button Connectors

## **Scoreboard**

Inspect the scoreboard data cable connectors for corrosion and broken or frayed wires. Clean or replace as necessary. Consult your scoreboard manual for any maintenance needed.

## **Printer**

Inspect the printer cable connectors for corrosion and broken or bent pins. Clean or replace as necessary. Consult your printer manual for instructions on caring for your printer.

# Appendix B

## System 6 Specifications

### **Environmental**

Temperature: 0°C - 50°C

Humidity: 90% (non-condensing)

Altitude: 0 to 3000 m

### **Electrical**

DC Supply: 15 VDC @ 2.4A

Battery: Lithium ion, rechargeable

Battery Operating Time: 45 - 60 minutes of normal use

External Power: Input - 15 VDC @ 2.4A

### **Printer**

DB 25/ 25-pin parallel port

### **Installation/Maintenance**

This product is intended to be used in an indoor or outdoor swimming pool environment. When the timer is operated in the US it must be used in accordance with the National Electric Code. When the timer is operated elsewhere it must be used in accordance with all appropriate national and local electrical codes and regulations for the country of installation. Run the System 6 a safe distance from the pool where it won't be splashed. The AC power adapter should never be used in a location where it can get wet.

The System 6 AC Power adapter must be used with a grounded outlet. This equipment is intended to be connected to a circuit protected by a ground-fault circuit interrupter when used outdoors or near a pool. This product is equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact a qualified electrician to replace your obsolete outlet. Do not defeat the purpose of the grounding-type plug.

If the System 6 has been in a cold location, allow it to come to room temperature in a non-humid area to prevent condensation on the unit.

Using the System 6 Timer in a manner not specified by Colorado Time Systems may cause the protection provided by the equipment to be impaired.

Other than routine cleaning, as described in this user manual, there are no user serviceable parts on the System 6 Timer.

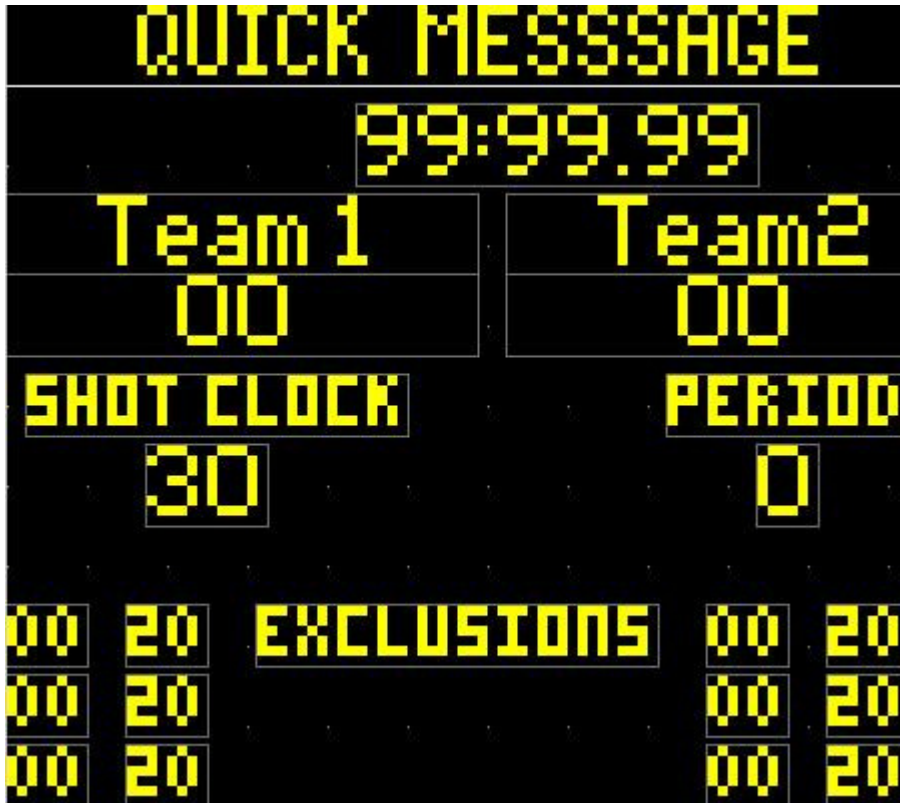


# Appendix C

## Scoreboard Module Configuration

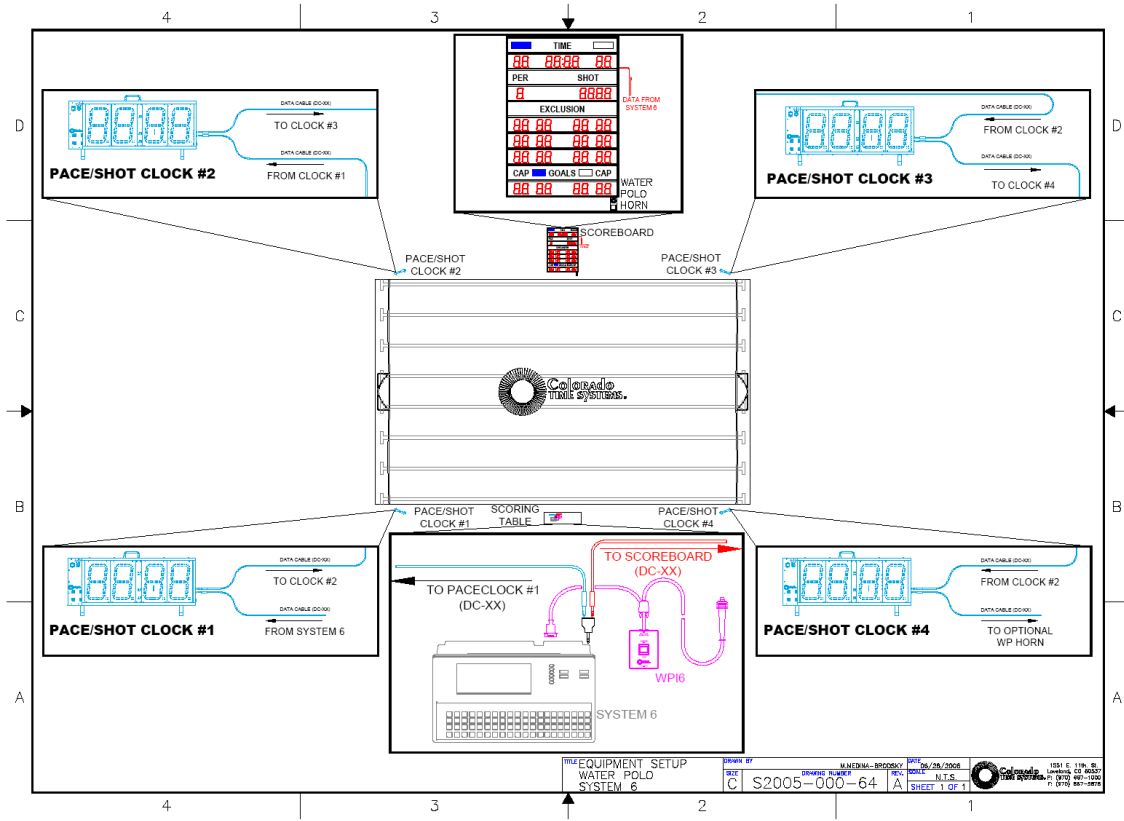
<b>TIME</b> BB:BB.BB	Channel 1	<b>FOULS 1-7</b> B B B B B B B	Channel 15
<b>PER SHOT</b> B :BB.BB	2	<b>FOULS 8-14</b> B B B B B B B	16
<b>EJECT A</b> BB BB BB BB	4	<b>FOULS 15-22</b> B B B B B B B	19
<b>EJECT B</b> BB BB BB BB	3	<b>FOULS 1-7</b> B B B B B B B	17
<b>EJECT C</b> BB BB BB BB	11	<b>FOULS 8-14</b> B B B B B B B	18
<b>CAP GOALS CAP</b> BB BB BB BB	13	<b>FOULS 15-22</b> B B B B B B B	20
<b>CAP FOULS CAP</b> BB BB BB BB	14		
<b>PER SHOT</b> BB BB	5	<b>PER SHOT</b> B BB.B	6 Digit 21
<b>TIME</b> BB BB:BB BB	7		
<b>PER TIME</b> BB B B:BB BB	8		
<b>TIME OF DAY</b> BB:BB	10		
<b>SHOT</b> :BB.BB	9		
<b>TIME OUT</b> BB BB:BB BB	12		
<b>TIME OUT</b> BB:BB	6		

# Water Polo Sample Templates for Matrix and Video Boards





## Water Polo Equipment Setup Diagram





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