

Santa Rosa Neptunes Swim Club

Colorado Time Systems Quick Guide

Updated January 12, 2017

This guide describes the Colorado timing system operator duties.

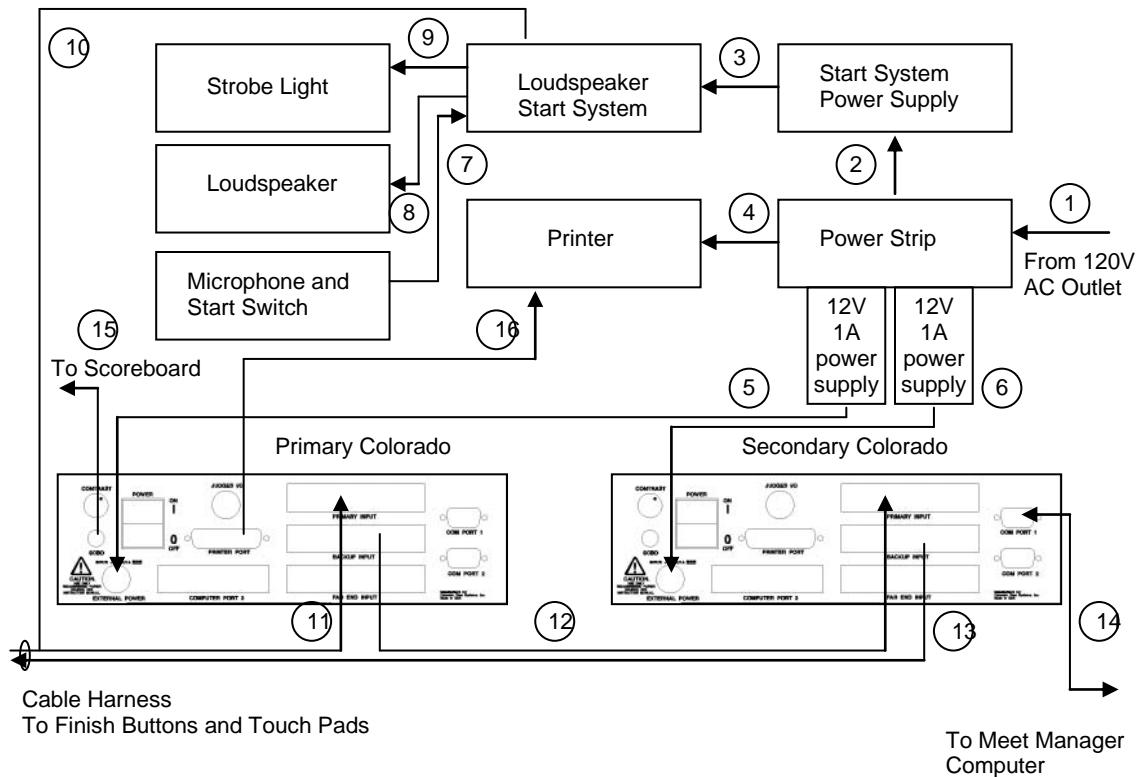
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Before the Meet Starts:

1. Hardware Setup

Figure 1. Colorado Time System Setup



- 1.1 Connect the Power Strip to 120V AC outlet via extension cord. Hang it high or tape it securely to the ground so no one touches it or trips over it.
- 1.2 Connect the Start System Power Supply to the Power Strip.
- 1.3 Connect the Start System to the Start System Power Supply. Connect the red clamp to the positive terminal and the black clamp for the negative terminal. Note that the Start System could be run on a deep cycle 12 volt battery (not a car starter battery), and since the Colorados have batteries inside them, a meet could be run without an AC outlet.
- 1.4 Connect the Printer to the Power Strip.
- 1.5 Connect the Primary Colorado “External Power” connector to the Power Strip with a Power Supply.

- 1.6 Connect the Secondary Colorado “External Power” connector to the Power Strip with a Power Supply.
- 1.7 Connect the Microphone and Start Switch to the Start System “Starter” jack.
- 1.8 Connect the Loudspeaker to the Start System “Speaker Cable” jack.
- 1.9 Connect the Strobe Light to the Start System “Strobe Output” jack.
- 1.10 Connect “Start” plug on Cable Harness to Start System “Start” Jack.
- 1.11 At the lanes, connect touch pad to prime and buttons to a, and b and c depending on harness.
- 1.12 Connect the Finish Cable Harness “Up” connector to the Primary Colorado “Primary Port” connector. Note orientation. Do not force.
- 1.13 Connect the Finish Cable Jumper from the Primary Colorado “Backup Port” to the Secondary Colorado “Primary Port”. Note orientation. Do not force.
- 1.14 Connect the Finish Cable Harness “Low” connector to the Secondary Colorado “Backup Port” connector. Note orientation. Do not force.
- 1.15 Connect the Secondary Colorado COM1 port to the Meet Manager Computer with a long Serial Port DB9 cable. Note orientation. Do not force. Hang it high or tape it to the ground so no one touches it.
- 1.16 Connect Scoreboard to Primary Colorado “SCBD” connector.
- 1.17 Connect the Printer to the Primary Colorado “Printer Port” connector. Note orientation. Do not force.
- 1.18 Load paper in to printer while it is still powered off.
- 1.19 Turn all equipment “on”:
 - Power Strip
 - Start System Power Supply
 - Start System
 - Primary Colorado
 - Secondary Colorado
 - Printer
- 1.20 Set/Confirm Printer settings:
 - “Character Pitch” is set to “12”.
 - “Print Quality” is set to “HSD”.Note: You may have to look closely at the front screen to make sure the lights are

on the correct settings because glare can makes them hard to see.

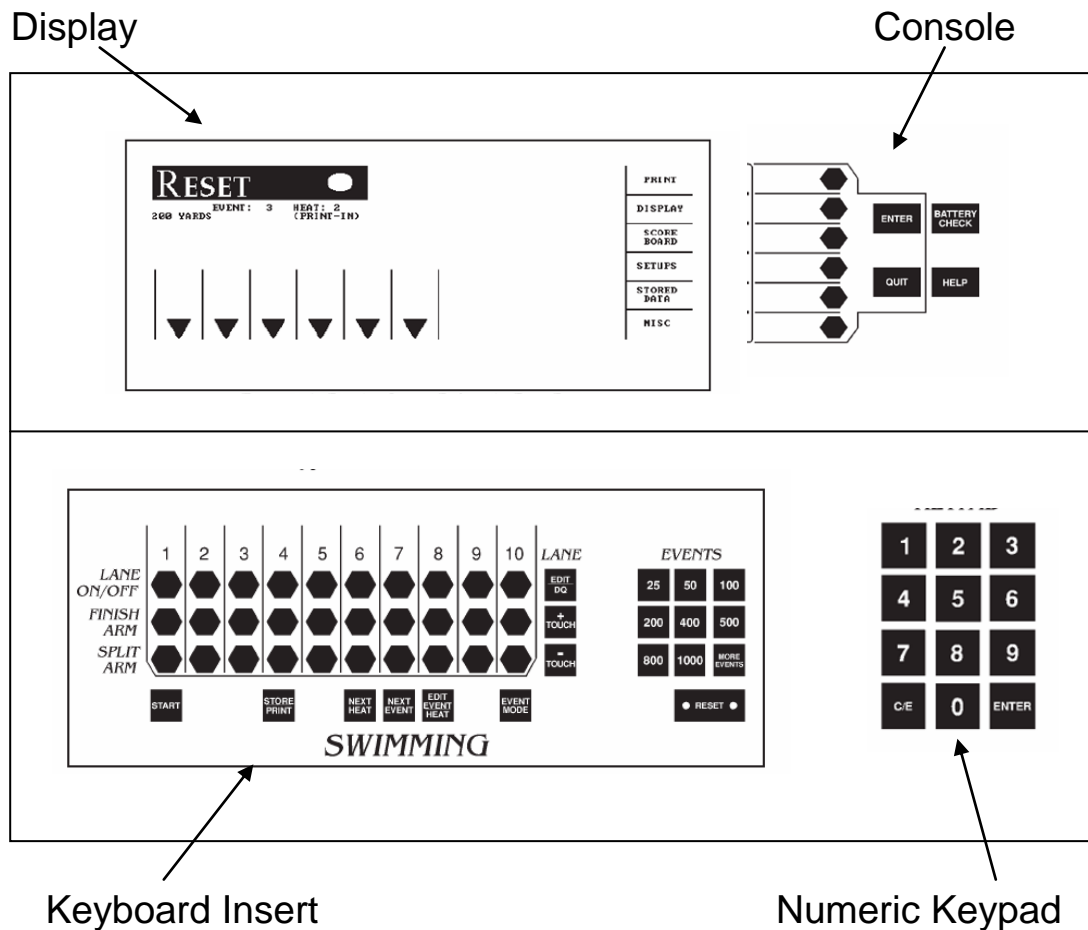
1.21 Bring these and other instructions in waterproof sleeves and folder since swimmers may splash you.

1.22 Prepare for an outdoor environment if necessary:

- Clean display with glass cleaner if dirty.
- Use paperweights to contain papers if windy.
- Bring flashlight if meet goes in to the night without adequate lighting.
- Bring a sun shade to see the display if the sun is at the wrong angle.

2. Software Setup

Figure 2. Colorado Time System Front Panel



- 2.1 Press "Setups" Soft Key on the Console. Navigate within setup menu with soft keys and numeric keypad as shown on the display. Verify or set the following features:
- 2.2 "Start" = "Automatic".
- 2.3 Under "Finish/Buttons":
 - "Primary Finish Type" = "Pad" for pads, or "Two Buttons" or "Three Buttons" if no pads, depending on harness
 - "Backup Finish Type" = "One Button" or "Three Buttons" depending on harness used
- 2.4 Under "Hardware Setup":

- “Speaker Volume” = “1”, “2” or “3” – loud enough for you to hear the beeps amongst the noise so you know entries are being made in the system.
 - “Allow Remote Setup” is selected.
- 2.5 Under “Splits”:
- Ask Meet Director whether they want “Cumulative” or “By Lap” splits – typically by lap.
- 2.6 Under “Timing”:
- Ask meet director whether they want a Timing Accuracy of “.01” or “.001” seconds.
- 2.7 Under “Pool”:
- Lane type = “Lanes Normal” if lane 1 is closest to you. Otherwise select “Lanes Reversed” if lane 1 is farthest from you.
 - Enter number of lanes in pool. If running an odd number, select the next highest even number and turn off the highest lane as described later.
 - “Far End Splits” is selected only if pads or buttons are on both sides of the pool.
 - Unit of measure = “Yards” or “Meters”.
 - Length of course = “25” or “50” yards or meters.
- 2.8 Under “Scoreboard”:
- Verify “high speed” data transmission is selected.
- 2.9 Under “Printer”:
- Printer Type is “IBM”
 - Font is “Elite”
 - Store/Print Format has “Race Summary”, “Summary by Lane” and “Summary by Place” all selected.
- 2.10 Under “Time/Date”:
- Set the “Time”, “Day” and “Date” if necessary.
 - Select 12/24 hour clock format as desired by Meet Director.
- 2.11 Press “Record Setups” Soft Key to write preferences to non-volatile memory that will persist across power cycles.
- 2.12 Have the person running the Meet Manager computer download the meet on to the Colorado and verify the right events are shown.
- 2.13 Under I’m not sure where, verify pad delay at start is 3 seconds, and split delay time 15 seconds. Do not enable far end splits.

3. System Test

- 3.1 Press “Battery Check” on Console and make sure greater than two hours of running time are left on the battery, and that AC mode is on.
- 3.2 Press “Edit Event/Heat” button on Keyboard Insert.
- 3.3 Change Event number to 1 less than the first event scheduled for the day, and heat number to 1.
- 3.4 Verify speaking in to the microphone transmits out of the loudspeaker.
- 3.5 Verify the start switch starts the clock.
- 3.6 Verify each button push corresponds to the correct lane and button number on the display.
- 3.7 Press Store/Print and verify printer prints properly and advances to the next page perforation.
- 3.8 Press “Scoreboard” Soft Key.
- 3.9 Press “Scoreboard On” Soft Key. Verify time of day is displayed on the Scoreboard.
- 3.10 Press “Quit”.
- 3.11 Press “Display” Soft Key. Verify window on display comes up with lane vs. pad and button pressed table.

During the Meet

4. Automatic Equipment Operator Duties

This person's job is to:

- Manually synchronize the Colorado with the race event and heat numbers as decided by the Starter Referee and then arm the Start process
- Visually verify timer is started, and split and finish data is being collected by the machine; troubleshoot the system if it is not working properly
- Manually invoke the saving of data for a valid race and race summary printout process
- Collect Colorado Meet Sheets from the Runner, and annotate them with race number, no shows and DQs submitted during an event
- Collect DQ slips and Referee Meet Sheets from Referees
- Give Colorado and Referee Meet Sheets and DQ slips to Chief Timing Officer

This person sits in front of the Primary Colorado which is situated next to the Referees, and follows the following sequence for each heat. A trainee may be sitting in front of the Secondary Colorado and do the same operations; if there is not a trainee or a second person, the primary person must run both machines in order to store a backup of the race information.

The following sequence will be performed for each race:

- 4.1 After data has been stored and printed from a previous heat, press both "Reset" buttons simultaneously. Verify display then shows "Reset". NOTE: YOU WILL LOSE DATA IF YOU DO NOT STORE/PRINT BEFORE RESET!
- 4.2 If the next race is the first heat of a new event, press "Next Event" on the Keyboard Insert. If an event number is being skipped because boys or girls are not doing the corresponding race, press "Next Event" again. Otherwise press "Next Heat". Verify Event and Heat on Display are correct, compared to meet sheet and what the starter is announcing.
- 4.3 If any lanes are not occupied, either per the meet sheet or due to a no show, deselect them by pressing the corresponding "Lane On/Off" button on the Keyboard Insert. Make sure every lane that is not vacant is turned on and was not left off from a previous heat lane vacancy. If the vacancy is due to a no show, cross out the swimmer on the Colorado Meet Sheet and write "No Show".
- 4.4 You may want to indicate to the Starter when you are ready. Then be quiet while they start the race. Verify that the clock on the display starts to advance and the printer prints a few lines once the starter beep and strobe goes off.

4.5 Record the last three digits of the race number on the Display on the left hand margin of the Colorado Meet Sheet with a red pen.

4.6 Verify you hear a beep and the printer prints a line and advances the paper every time a touch pad is pressed or a button is pushed.

4.7 If splits are being taken:

- Verify “S Armed” comes up after about 10 seconds for each lane. Note that there is a delay so a swimmer from the previous race could get out of the pool and press the touch pad without accidentally counting a split.
- If a split pad or button press does not get pressed on a lane, press “+ Touch” on Keyboard Insert and enter lane number on the Numeric Keypad.
- If you mistakenly press “+ Touch” or a pad or button is mistakenly pressed an extra time, press “- Touch” on Keyboard Insert and enter lane number on the Numeric Keypad.
- Use “Split Arm” for the corresponding lane on the Keyboard Insert if someone accidentally presses the pad or button being used for splits.

4.9 Verify “F Armed” comes up after about 10 seconds of the start, or in the case of splits, after the last split has been taken. Note that there is a delay so a swimmer from the previous race could get out of the pool and press the touch pad without accidentally counting a finish. If one of the finish buttons was pushed on accident, press “Finish Arm” for the corresponding lane to remove it.

4.10 Watch the swimmers come in, listening for one beep per button or pad touch. As soon as all the swimmers complete, verify all pads and buttons have been pushed on the Display. If no presses occur, notify the Referee, so the lane timer stop watch time or a coach’s timer time can be used instead. Determine why no buttons were pushed and rectify the situation.

4.8 Once all swimmers are in, press “Store/Print” button on Keyboard Insert. Verify “Stored” message comes up with in a few seconds, then the printer starts printing and advancing the paper immediately.

NOTE: RACE DATA WILL BE LOST IF “STORE/PRINT” IS NOT PRESSED BEFORE “RESET”!

The following will be done during each event:

4.11 Collect Colorado Meet Sheets from the Runner.

4.12 If a Referee hands you a DQ slip during the event, cross them out on the Colorado Meet Sheet and write DQ with a red pen, tear off the carbon copy of the DQ form, and hand the carbon copy to the Head Referee.

4.13 Give DQ slips, Colorado Meet Sheets and Referee Meet Sheets to the Chief Timing Officer at the end of the event. Give DQ slips that are given after the event directly to the Chief Timing Officer.

5. Chief Timing Judge Duties

This person's job is to:

- Verify printer is working properly; troubleshoot and fix any printing problems that may occur
- Tear off the Race Summary Sheets from the printer
- Verify buttons worked and were pressed in a timely fashion, annotate the race summary sheet accordingly, and work with the head referee when there is a problem
- Collect Colorado and Referee Meet Sheets and DQ slips from the Automatic Equipment Operator
- Collect DQ slips from Referees after the event and annotate the Colorado Meet Sheet
- Collect Lane Timing Sheets from the Runner
- Clip together the DQ slips, Colorado and Referee Meet Sheets, Race Summary Sheets and Lane Timing Sheets for an event and give to Runner

This person sits next to the Automatic Equipment Operator and near the Referees.

The following sequence will be performed for each race:

- 5.1 Verify printer is working properly. If you have a paper jam:
- Turn off the power
 - Remove the paper guide tray
 - Open up the tractor feed clamps to loosen the paper so that you can assess the location of the jam
 - Make sure to check that there are no torn off fragments remaining near on the paper roller, or under the clear roller guard
 - You may need to use tweezers, or something small to retrieve the smaller pieces

Once you have the print paper path cleared, the printer reassembled and ready to go:

- Roll the paper forward so that the top of the paper is level with the tear off
- Turn the power back on and resume printing
- Adjust the paper tear off with the side wheel, or by using the button next to form feed on the front panel

The paper is stored in a blue box. There are extra print cartridges in the supplies box with cords.

- 5.2 Tear off Race Summary Sheet from the printer.

- 5.3 Remove tractor feeds from sides of printout.
- 5.4 Circle the event number and heat number with a pencil.
- 5.5 Verify at least one button or pad was pressed and the times did not span more than 0.3 seconds for each lane, and that it selected the middle time as the Finish Time. If so, draw a line next to the lane time column with a pencil indicating you have checked it and it is good. If not, circle a single time if it is a single outlier or is missing, or circle the whole column if all the numbers are far from each other or all missing.
- 5.6 If more than one button or pad was pushed and the span as greater than 0.3 seconds, verify that the Colorado threw out the outlying data points.
 - If one time was an outlier, make sure Colorado picked the time of the two other times that was closest to the outlier for the Finish Time.
 - If all three data points were spread far apart, make sure the Colorado picked the middle time for the final time.
- 5.7 If only one button was pushed, make sure the Colorado selected it for the Finish Time.
- 5.8 If there were no buttons pushed, or there was a problem with the timing system, notify the head Referee so they can look at the Lane Time Sheet or Coach's Timer to determine the Finish Time.
- 5.9 If a button or pad is regularly not being pressed but it appears like someone is trying to press it, check the finish cable harness seating and switch connection seating, or send someone over to talk to the timer and possibly swap out their button or a pad. Note that this could cause a delay in the meet.
- 5.10 If anyone was DQd after the event was over, cross them out on the Colorado Meet Sheet and write DQ with a red pen, tear off the carbon copy of the DQ form, and hand it to the Head Referee.

The following sequence will be followed at the end of each event.

- 5.11 When event is over, clip the paperwork together in the following order:
 - DQ slips
 - Colorado meet sheets
 - Referee meet sheets
 - Lane timer sheets
- 5.12 Give the stack of paperwork to the Runner who will bring it to the Computer Room.

After the Meet Ends:

6. Shut Down

6.1 Press “Quit”

6.2 Press “Scoreboard”

6.3 Press “Scoreboard Blank” Twice. Verify the Scoreboard goes off.

6.4 Press “Quit”.

6.5 At the end of the day, check with the Meet Manager Computer Controller to make sure they have remotely stored all data inside the Colorado to the Computer before powering down the primary Colorado or disconnecting the DB9 cable from its COM1 port.

6.6 Turn off all equipment.

6.7 If the meet is over or equipment is not secure or is exposed to weather, disconnect all equipment and put it inside.

7. Troubleshooting

If buttons or pads seem to be intermittent, reseal connectors at lanes and in to the back of the Colorado.

If pads are too hard to press, evacuate air from bladder with pump and needle.

If pads are shorting, inject air in to bladder with pump and needle.