

# 10. Colorado Time Systems Quick Guide

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This guide describes how to set up the Colorado and the timing equipment operator and intermediary duties.

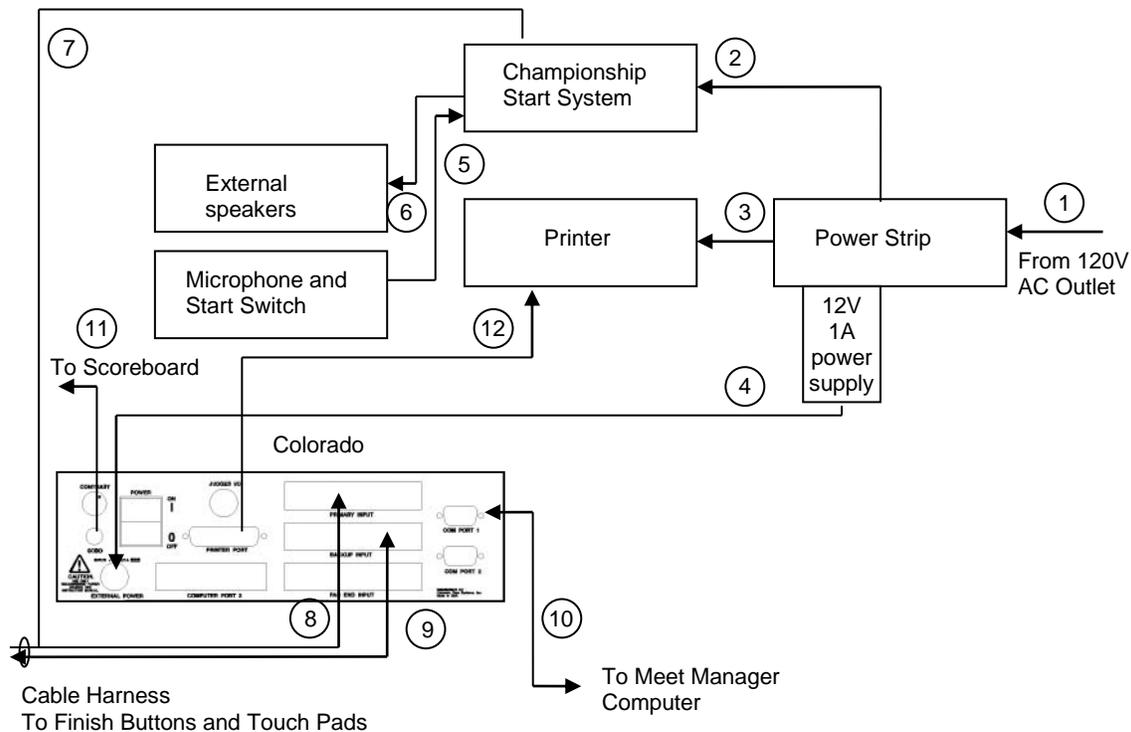
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## Before the Meet Starts:

### 1. Hardware Setup

Figure 1. Colorado Time System Setup

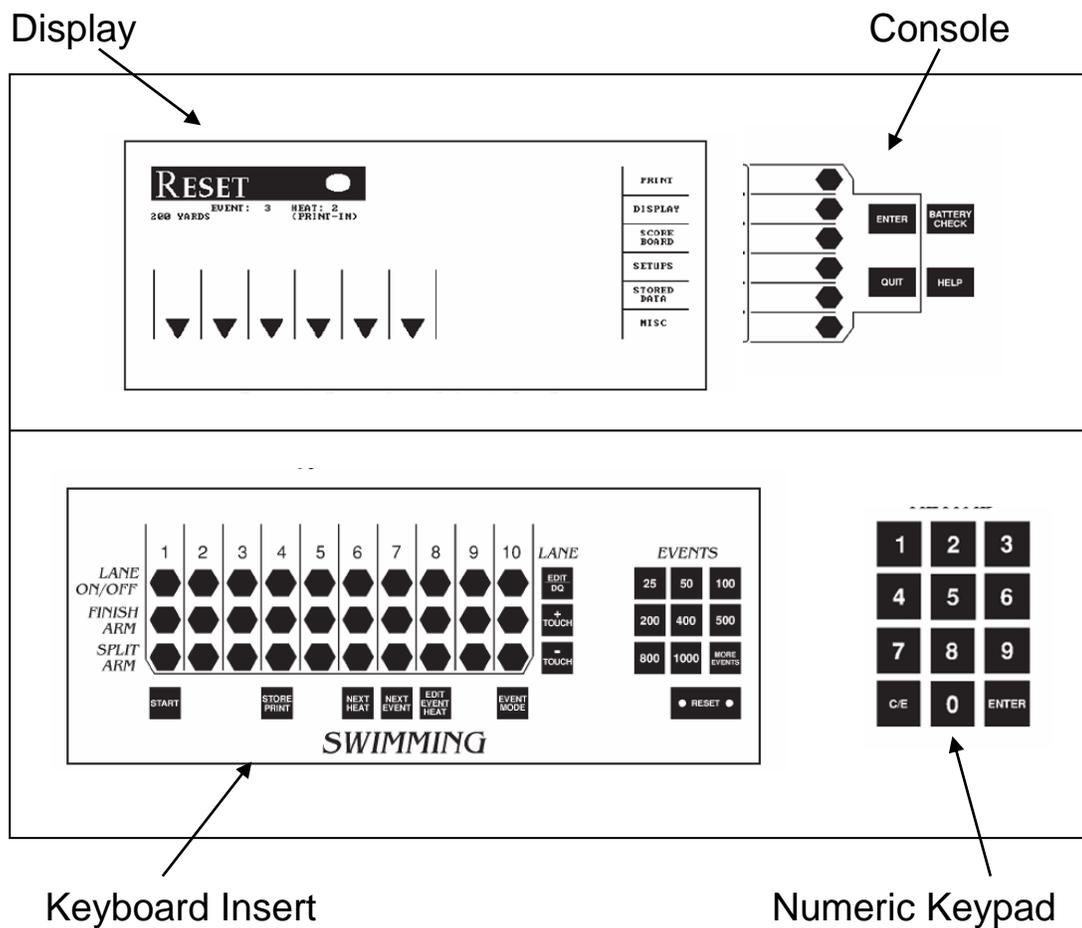


- 1.1 Connect the Power Strip to 120V AC outlet via extension cord. Hang it high or tape it securely to the ground so no one touches it or trips over it.
- 1.2 Connect the Start System to the power strip.
- 1.3 Connect the Printer to the Power Strip.
- 1.4 Connect the Colorado “External Power” connector to the Power Strip with a Power Supply.
- 1.5 Connect the Microphone and Start Switch to the Start System “Starter” jack.
- 1.6 Connect the external speakers to the Start System “Speaker Cable” jack.
- 1.7 Connect “Start” plug on Cable Harness to Start System “Start” Jack.

- 1.8 Connect the Finish Cable Harness “Up” connector to the Colorado “Primary Port” connector. Note orientation. Do not force.
- 1.9 Connect the Finish Cable Harness “Low” connector to the Colorado “Backup Port” connector. Note orientation. Do not force.
- 1.10 Connect the Colorado COM1 port to the Meet Manager Computer with a Serial Port DB9 cable. Note orientation. Do not force. Hang it high or tape it to the ground so no one touches it.
- 1.11 Connect Scoreboard to Primary Colorado “SCBD” connector.
- 1.12 Connect the Printer to the Primary Colorado “Printer Port” connector. Note orientation. Do not force.
- 1.13 At the lanes, connect touch pad to prime and buttons to a, and b and c depending on number of harnesses and buttons.
- 1.14 Load paper in to printer.
- 1.15 Turn all equipment “on”:
  - Power Strip
  - Start System
  - Colorado
  - Printer
- 1.16 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" = "1" for pads
  - "Backup Finish Type" = "7" for three Buttons
  - "Compare button early to pad" = "8"
- 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 Referee whether they want “Cumulative” or “By Lap” splits – typically by lap.
- 2.6 Under “Timing”:
- Ask Meet Referee whether they want a Timing Accuracy of “.01” or “.001” Seconds – typically .01.
- 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 Referee – typically 12 hour.
- 2.11 Press “Record Setups” Soft Key to write preferences to non-volatile memory that will persist across power cycles. Press “yes” when it asks you again.
- 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 Setups-Timing, change pad delay at start to 15 seconds so swimmers can exit after flyover without adding a touch, and verify 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 For testing, change Event Number to 99, Heat Number to 1, and Events to 50 and then press Enter.
- 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 touch pad and button push corresponds to the correct lane and button number on the display.
- 3.7 Press Store/Print and verify printer prints properly.
- 3.8 Press “Scoreboard” Soft Key.
- 3.9 Press “Scoreboard On” Soft Key. Then press “Scoreboard Blank” and verify time of day is displayed on the Scoreboard. Then press “Scoreboard Blank” again to blank 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. Timing Equipment Operator Duties

This person sits in front of the Colorado which is situated behind the starting Referees.

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

Perform the following sequence for each heat:

- 4.1 After data has been stored and printed from a previous heat, press both "Reset" buttons simultaneously. Verify display then shows "Reset".

**NOTE 1: YOU WILL LOSE DATA IF YOU DO NOT STORE/PRINT BEFORE RESET!**

Note 2: if there is a start after Store/Print but before Reset, the Colorado will ask "Start detected, valid start?" and if it is, press yes. **DO NOT PRESS 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.

Note: if you forget to update the heat and event before the start of the race, you can do it before the end of the race, but you can't do it after Store/Print.

- 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 Assuming touch pads are being used and hence splits are being taken:
- Verify “S Armed” comes up after 15 seconds for each lane for longer races with 1 or more splits, or “F Armed” comes up for shorter races with no splits. 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 touch does not get pressed on a lane, which is common, press “+ Touch” on Keyboard Insert and enter lane number on the Numeric Keypad.
  - If you lose track of missed touches and you know the swimmer is coming in to the finish, which is easy to do, press “Finish Arm” on their corresponding lane.
  - If you mistakenly press “+ Touch”, which is less common, press “- Touch” on Keyboard Insert and enter lane number on the Numeric Keypad.
  - I don’t know why one would ever press “Split Arm” on a given lane.
- 4.7 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 Admin, 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. Also reverify the race number is what you wrote on the meet program margin.

**NOTE 1: RACE DATA WILL BE LOST IF “STORE/PRINT” IS NOT PRESSED BEFORE “RESET”!**

**NOTE 2: DO NOT TURN OFF COLORADO AT END OF MEET UNTIL COMPUTER OPERATOR HAS TOLD YOU THAT ALL RESULTS DATA HAVE BEEN RETRIEVED.**

At the end of each event:

- 4.9 Pass Colorado program sheet to the Intermediary.

## 5. Intermediary Duties

This person sits between the Timing Equipment Operator and the Admin or head Referee. This person's job is to:

- Verify printer is working properly; troubleshoot and fix any printing problems that may occur while the timing equipment operator concentrates on capturing times
- Collect 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 admin or 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

The following sequence will be performed for each race:

- 5.1 Collect Race Summary Sheet from the printer.
- 5.2 Circle the event number and heat number with a pencil.
- 5.3 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, to flag admin or head referee that there is a problem.
- 5.4 If more than one button or pad was pushed and the span is 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.
- 5.5 If only one button was pushed, make sure the Colorado selected it for the Finish Time.
- 5.6 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.
- 5.7 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.

- 5.8 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 Admin or Chief Stroke and Turn Judge.

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

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

## After the session ends:

If trials, power cycle Colorado and have computer operator load finals session in to Colorado.

## 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.

**NOTE: TURNING OFF THE COLORADO BEFORE THE COMPUTER ROOM DOWNLOADS THE DATA COULD RESULT IN LOSS OF DATA!**

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.

If comm test passes but meet does not download over a long serial cable, bring computer next to Colorado and connect them with a short serial cable and retry.

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## **8. Colorado Timing Equipment Operator Checklist**

During each heat:

1. Turn off unused lanes.
2. Verify event number and heat number are correct.
3. Write file number on left margin of Colorado meet program sheet.
4. Press +, -, Split Arm and Finish Arm for missed or extra touches as needed.

After each heat:

1. When all swimmers are finished, press Store/Print.
2. Press Reset with two fingers.

After each event:

1. Give Colorado program sheet to intermediary.

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## 9. Colorado Intermediary Checklist

After each heat:

1. Collect Colorado printout heat printout from printer.
2. Circle heat and event.
3. Circle any missing watch times.
4. Check all button times across a lane to make sure they do not vary more than 0.3 seconds. If they do, circle the lane row.

After each event:

1. Create a packet of event papers held by a clothespin with the papers in the following order:
  - a. DQ slips from Chief Stroke and Turn Judge.
  - b. Colorado meet program from timing equipment operator.
  - c. Referee meet program(s).
  - d. Colorado heat result printouts.
  - e. Lane timer sheets delivered by runner.
2. Give event packet to admin or meet referee for review before sending it to the computer room.