





Chronotir Light System (English Version)

Set up

- 1: Set light boxes on stands in the required positions on the field of play. The stands should be anchored in some way to the ground if it is windy.
 - 2: Take off the front covers. The covers' locating lugs are delicate and easily broken – make sure covers are correctly reinstalled on completion of the days shooting.
 - 3: The covers can be used as sunshades for the lights. Use bungee straps to hold them on top, not duct tape.
 - 4: Turn on the boxes. There are three switches - on/off, bright/dim, sound on/sound off (mute). The lights will go through a self-check and one acoustic (Beep) signal will be heard.
- NOTE: If trialling the use of the lights inside a small space, do not turn on the Beep and keep the lights dimmed otherwise you will be deafened and blinded. When shooting outside, turn on all three switches. When shooting indoors, leave the lights dimmed.
- 5: Put four (4) new good quality AA batteries in handheld remote (they are a tight fit). The remote automatically turns on and goes through a self-check sequence. The batteries should last a full day of shooting. If there is an extended lunch break it is best to turn the remote and lights off to save battery power on all units. (The new Chronotir Version 2C version has better batteries and internal setup that allows for several days of shooting without battery issues for lights or remote.)
 - 6: The system sets up on a DEFAULT of:
 - RED light
 - 120 secs SHOOT TIME
 - 10 secs PRE SHOOT
 - 30 secs YELLOW
 - DUEL OFF
 - 6: It is useful to watch the lights go through the check sequence, check that all the LED's are working and they all settle with the RED light and 120 secs showing.

Using the Lights – Shooting


When signalled by the Line Judge, the DoS will start the shooting sequence:

- 1: Press  (TIR) - two Beeps will sound, followed by 1 Beep when the PRE SHOOT time has finished.
- 2: The lights will go through the SHOOT time right to the end to ZERO. Towards the end of the SHOOT time the light will turn to YELLOW for the time that was set from Zero – 30 secs. Three (3) Beeps will sound, the RED light will show and the numbers will reset to SHOOT TIME. Archers will go forward and score.
- 3: Should the archers finish before the ZERO then press  (SCORE) – the lights will go straight to ZERO, three (3) Beeps will sound and the archers will go forward and score.

The ability to end a shoot early applies to shooting in details (AB/CD) as well; the only difference is TIR is used to move the between details (AB/CD and CD/AB) and vice versa (see Shooting in Details section).



Emergency and Announcement Stops

- A  **EMERGENCY STOP** - Should at any time a situation develop on the field e.g. person/dog crossing the range or a Judge tells you of a developing situation, press and **hold** down **STOP**. There will be a “continuous” beep and the lights will go RED. **Shooting shall/should stop immediately**. You may need to use the PA (or a loud voice or your own whistle) to reinforce the directive to stop shooting to the archers. They all remove arrows from their bows and move back to the waiting line.

After the emergency has been dealt with, the end or match may continue. The DoS will receive instructions from the Chief Judge as to what will happen next. For example the SHOOT TIME could be set to 200secs.



In all cases where the lights have been stopped out of their normal sequence it is best to “reset” them by pressing SCORE. It may be necessary to warn archers that this is about to happen.

- B **ANNOUNCEMENT STOP** – This usually occurs at the end of six ends (36 arrows) / end of shoot (Matchplay elimination round) when there are notices to read out e.g. bring the target butts forward to the next distance, please sign all scorecards and hand in etc.

Tap **STOP** once – RED lights will show but no sound will emanate. The lights will also go back to the SHOOT TIME. An announcement can then be made. After the announcement press 'Score', three (3) Beeps will sound per normal. If using a PA system it is useful to tell the archers to go forward.


Individual Shoots

6 Arrow Ends

- 1: Press and hold  (PR) until 120 secs flashes (it can be a little hard to see this).
- 2: Using the  (arrow ↑) button move SHOOT TIME to 240 secs (in 10 sec increments).
- 3: Tap PR and confirm that PRE SHOOT is 10 secs (5 second increments).
- 4: Tap PR and confirm that YELLOW is 30 sec (5 second increments)
- 5: Tap PR check DUEL is OFF.
- 6: Hold PR - handset will flash DATA VALIDATED and it will confirm the entire sequence on the lights.

Once complete the handheld should read 240 secs. Lights will be 240 with a RED light. Check all lights are identical.

NOTE: Should the lights show “AB” or “CD” the relay mode for shooting details has been accidentally turned on.

Press the arrow ↑ or  ↓ button to cycle through until nothing shows on the lights.

3 Arrow Ends (default setting). NOTE: This default setting is also used for Simultaneous Shooting for Individual Matchplay.

- 1: Press and hold PR - check that SHOOT TIME 120 secs flashes
- 2: Tap PR, check PRE SHOOT is still 10 secs
- 3: Tap PR, check YELLOW is 30 secs.
- 4: Tap PR, check DUEL is OFF.
- 5: Hold PR, handset will flash DATA VALIDATED and it will confirm the entire sequence on the lights.

At the finish the handheld should read 120 secs. Lights will be 120 with a RED light.



Shooting in Details – AB/CD and CD/AB

When either of the above shoots (120 sec or 240 sec) are set up and detail shooting is required; press the arrow ↑ once to initiate AB or arrow ↑ twice to initiate CD on the lights. When the first detail e.g. AB, has completed shooting the lights will only sound TWO (2) beeps, the RED light turns on and CD is displayed and the PRE SHOOT automatically starts for the next detail. When the second detail is complete three (3) beeps will sound.

As DoS you may need to explain to archers how this works as some may think the 2 beeps at the changeover is the signal to go and score.

Make up arrows

- 1: A judge will tell you how many make up arrows are to be shot. (A Judge may also elect to run the make-up arrows under their own whistle and stopwatch).
- 2: Go through the above sequence and choose the correct SHOOT TIME

40 secs = 1 arrow	80 secs = 2 arrows	120 secs = 3 arrows
160 secs = 4 arrows	200 secs = 5 arrows	240 secs = 6 arrows

In all cases PRE SHOOT will be 10 secs and YELLOW will be 30 secs.

- 3: Press and hold PR to confirm selection.

MATCHPLAY

Individual Matchplay

NOTE: Elimination matches are three arrow ends as described in the section, 3 Arrow Ends (Default Setting).

Mixed Team Matchplay (2 archers per team)

i.e. An archer of each gender with same bow type

While eliminations are being held, the team of two (2) archers shoot 4 (four) arrows in total, two (2) per archer.

- 1: Set up the sequence:

SHOOT TIME = **80** secs, PRE SHOOT = 10 secs, YELLOW = 30 secs, DUEL is OFF.

- 2: Follow normal shooting procedure i.e. simultaneous shooting.

Teams Matchplay (3 archers per team)

(Teams can be mixed gender but the same bow type)

While eliminations are being held the teams of three (3) archers shoot 6 (six) arrows in total, two (2) per archer. Each archer shoots 2 (two) arrows each i.e. 6 (six) arrows in total over the 120 secs.

- 1: Set up the sequence to:

SHOOT TIME = **120** secs, PRE SHOOT = 10 secs, YELLOW = 30 secs, DUEL is OFF.

- 2: Follow normal shooting procedure i.e. simultaneous shooting.



FINALS MATCHES- BRONZE and GOLD

Individual Matchplay Finals (Alternate Arrow Shooting)

For the finals matches i.e. Bronze and Gold, the following set up applies: (Described from  OFF)

1: Turn ON - lights and handheld will go through self-check process and will be on the defaults of:
SHOOT TIME = 120 secs, PRE SHOOT = 10 secs, YELLOW = 30 secs.

2: Press and hold PR until it flashes.

3: Tap PR, through to DUEL.

4: Use arrow ↑ to move to INDIVIDUAL (this is a pre-set for Individual Matchplay)

5: Tap PR, KLAXON = OFF.

NOTE: A whistle may be needed to provide an acoustic signal should the timer reach zero and the sound of an arrow hitting the target or being shot has not been heard e.g. out of time or a miss.

6: Tap PR, SHOOT TIME = 20 secs.

7: Tap PR, Pre Shoot = 10 Secs.

8: Tap PR, YELLOW = '0' (Zero) seconds.

9: Press and hold "PR" to DATA VALIDATED etc. ALWAYS CHECK THE LIGHT SEQUENCE IS CORRECT!

The Judge will now indicate which archer is to start. Using the arrow ↑ or arrow ↓ button shift the RED light to the correct side. The light that starts first will show 20 secs and a RED light. The alternate light will only display a RED light.

10: Press TIR to commence shooting. After the 10 secs PRE SHOOT the archer shooting first will receive a green light.

11: When you see or hear the arrow hit the target butt, (overseas the announcer calls the arrow and the arrow value is posted) or the timer reaches ZERO you must push TIR to shift the green light to the other archer until the required full sequence has been shot (3 arrows each - keep a note).

12: Press SCORE on completion i.e. the 6th arrow has been shot.

13: After the arrows have been scored the Judge will indicate which archer will shoot first use the arrow ↑ or arrow ↓ button to switch the lights.

This sequence continues until the match is completed.

Mixed Team Matchplay Finals

For the finals matches - Bronze and Gold the following set up applies: (Described from OFF)

1: Turn ON - lights and handheld go through self-check process and will be on the defaults of:
SHOOT TIME = 120 secs, PRE SHOOT = 10 secs, YELLOW = 30 secs.

2: Press and hold PR until it flashes.

3: Tap PR, through to DUEL.



4: Use arrow ↑ twice to move to TEAMS (This is the pre-set for Teams).

5: Tap PR, KLAXON = OFF.

NOTE: A whistle may be needed to provide an acoustic signal should the timer reach zero and the sound of an arrow hitting the target or being shot has not been heard e.g. out of time or a miss.

6: Tap PR, SHOOT TIME = 80 secs (2 (two) archers shoot 4 (four) arrows in 2 (two) sets)

7: Tap PR, PRE SHOOT = 10 Secs

8: Tap PR, YELLOW = 30 secs

9: Press and hold PR, to DATA VALIDATED etc. ALWAYS CHECK THE LIGHT SEQUENCE IS CORRECT!

The Judge will indicate which Team is to start. Using the arrow ↑ or arrow ↓ button, shift the RED light to the correct side. The light that starts first will show 20 secs and a RED light. The alternate light will only display a RED light.

10: Press TIR to commence shooting

11: When you see the last archer of the two leave the shooting line and return completely to the waiting box push TIR to shift the lights to the other Team. When that team has shot their two arrows push the TIR to shift the lights to the other team until they have shot their last two arrows and then you shift sides again.

NOTE: The unused portion of the 80 secs after to the first two arrows are shot, is paused and then resumed, when the light is passed back to that team. The team shooting will have a green light and their remaining time. Keep note (in your head, on paper or by some other means) of how many times the lights are shifted (2 times each).

If no arrow is shot because time has run out, a whistle (acoustic signal) is required, and then change.

12: Press SCORE

13: After the arrows have been scored the Judge will indicate which Team will shoot first use the arrow ↑ or arrow ↓ button to switch the lights.

This will continue until the match ends. There are four (4) ends/sets for both recurve and compound

Teams Matchplay FINALS - Bronze and Gold medal matches

For the finals matches - Bronze and Gold the following set up applies: (Described from OFF)

1: Turn ON - lights and handheld go through self-check process and will be on the defaults of:
SHOOT TIME = 120 secs, PRE SHOOT = 10 secs, YELLOW = 30 secs.

2: Press and hold PR until it flashes.

3: Tap PR, through to DUEL.

4: Use arrow ↑ twice to move to TEAMS (This is the pre-set for Teams).

5: Tap PR, KLAXON = OFF.

NOTE: A whistle may be needed to provide an acoustic signal should the timer reach zero and the sound of an arrow hitting the target or being shot has not been heard e.g. out of time or a miss.



- 6: Tap PR, SHOOT TIME = 120 secs (3 (three) archers shoot 6 (six) arrows in 2 (two) sets)
- 7: Tap PR, PRE SHOOT = 10 Secs
- 8: Tap PR, YELLOW = 30 secs
- 9: Press and hold PR, to DATA VALIDATED etc. ALWAYS CHECK THE LIGHT SEQUENCE IS CORRECT!

The Judge will indicate which Team is to start. Using the arrow ↑ or arrow ↓ button, shift the RED light to the correct side. The light that starts first will show 20 secs and a RED light. The alternate light will only display a RED light.

- 10: Press TIR to commence shooting
- 11: When you see the last archer of the two leave the shooting line and return completely to the waiting box push TIR to shift the lights to the opposing Team. When the opposing team has shot their two arrows push the TIR to shift the lights to the starting team until they have shot their last two arrows and then you shift sides again.

NOTE: The unused portion of the 120 secs after to the first two arrows are shot, is paused and then resumed, when the light is passed back to that team. The team shooting will have a green light and their remaining time. Keep note (in your head, on paper or by some other means) of how many times the lights are shifted (2 times each).

If no arrow is shot because time has run out, a whistle (acoustic signal) is required, and then change.

- 12: Press SCORE
- 13: After the arrows have been scored the Judge will indicate which Team will shoot first use the arrow ↑ or arrow ↓ button to switch the lights.

This will continue until the match ends. There are four (4) ends/sets for both recurve and compound

SHOOT OFFS for TIES/DRAWS

Shoot offs are where in individual matchplay or teams matchplay the competitors finish on the same score for cumulative or set system. In all cases the Target Judge will indicate to the Line Judge there is a Tie. They will then indicate who will shoot first (for alternate shooting).

The DoS will then reprogram the lights to the correct time and set the lights to the correct side to shoot first.

Below is a table showing the different setting for each type of match shoot off.

	Individual Elimination	Individual Final	Mixed Team Elimination	Mixed Team Final	Team Elimination	Team Final
After X ends/sets of shooting	5	5	4	4	4	4
SHOOT TIME	40	20	40	40	60	60
PRE SHOOT	10	10	10	10	10	10
YELLOW	30	0	30	30	30	30
DUEL Style	OFF	INDIVIDUAL	OFF	TEAMS	OFF	TEAMS
Arrows Shot	1 each	1 each	2 each team	2 each team	3 each team	3 each team

NOTE: In 2018 World Archery, for individual matchplay in outdoor target only, provided for a second shoot off to be shot should both archers shoot a 10 for recurve or an 'X' for compound.



HANDHELD DESCRIPTIONS, LIGHT WARNINGS AND INDICATIONS

The lights will go into a type of “power saving” mode when they have not been used for some time. If this happens the RED light will stay on but the numbers will disappear. As soon as TIR is tapped the timing sequence will automatically start.

Should the RED light flick to yellow while the lights are waiting this is a low signal warning. Make sure the remote has direct line of sight to the light units or bring the light unit(s) closer.

Sometimes, particularly if it has been a very long day of shooting, flicking to yellow signals low battery power on the light units and/or the remote. This is unlikely if the lights have been fully charged and new reputable AA batteries were installed at the start of the day.



The Chronotir Handheld Remote



REVISION HISTORY

Revision Number	Revision Date	Changes
Revision 1	April 2010	Written for the TransTasman in Rotorua (EA)
Revision 2	April 2017	Updated for the English version of remote and WMG2017 (EA)
Revision 3	January 2018	Updated to include diagrams and teams matchplay (EA)
Revision 4	December 2018	Updated to include changes to matchplay
Revision 5	January 2020	Updated spelling, formatting, matchplay timing