

ArcheryClock

*User Manual for
Director Of Shooting
(DOS)*

*Document Version 1.0.
June 2020.*



Introduction

This document is meant for usage of ArcheryClock Countdown by Director Of Shooting (DOS). It is meant for controlling the timer during Archery matches and preparing the timer for an Archery Tournament.

ArcheryClock is a free archery countdown timer program targeting the DIY market. Consequence is a low (or free) prize but means some effort to build the timer.

Low effort for “simple” systems. And more effort (and skills) for multi-functional (outdoor) -timers.

This document doesn't focus on building the timer but is meant to control the timer. Controlling is easy, but depends a bit on how the builder has created the system. Meaning which control device is chosen.

Since software is available for free, the DOS can practice the usage from home. To download the software, visit the website <http://www.archeryclock.com/software.html> .

This document is based on software version 2.6. Usage is the same for older software versions but 2.6 has more functionality. And a little different look and feel in menu structure.

For any feedback on the timer. Or suggestions to improve or added functionality, please contact us via feedback@archeryclock.com .

In scope for this document:

- Prepare the timer for archery Tournament in different sessions (scenarios).
- Controlling the timer during Archery Matches.

Out of scope for this document:

- Building the timer. (Hardware).
- Set up the timer. (like screen colors, sound style, etc.).
- ➔ For building and set up of the timer we refer to the website:
<http://www.archeryclock.com/>

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Main controls

The timer can be controlled with different controllers. Next to the keyboard or mouse/touchscreen, it can be chosen to use a (PowerPoint) presenter or other hardware like apps or streaming decks. Here an overview of the main control functions available:



*Emergency /
Danger*

This functionality (this button) is used in case of a dangerous situation. For example when someone enters the archery field while shooting. As a result of pressing this button, the buzzer starts signaling, the traffic lights go to red and the text 'STOP' will appear on the screens. On keyboard the 'E' (emergency) key or pressing 'esc' button twice will trigger the 'Danger' mode. Recovering the system can be done by pressing the 'Next'  button. But before recovering, the time left over can be adjusted  by arrow keys. Although the settings are by default according to WA specifications, it is possible to change them. (Like the number of sound signals.)



Next.

This is the main control button of the timer. On the keyboard the function is activated by the space bar. Theoretically this is only button needed to control the timer during the match as long as no corrections are needed.

With this button:

- ➔ the timer starts.
- ➔ the timer starts to the next turn (next archer).
- ➔ Finalizes the end.

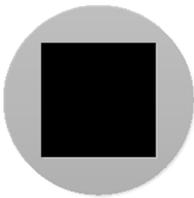
After the end is finalized, the system automatically controls the sequence of the next end. (for example from AB-CD to CD-AB).



Pause/Play

Formally this button is not needed since it is not needed to pause shooting. Typically this button is used before finishing the last end just before retrieving the arrows to be able to give the competition organizer some comments to the audience. (For example to mention the start time of the 2nd part of the match.)

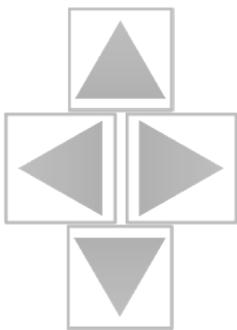
On keyboard the 'P' key can be used.



Stop.

To stop the timer. For example when accidentally the 'next' button is touched while the match didn't start yet.

On keyboard the 'S' key can be used.



*Select/correct
Arrows*

The function of the arrow keys depends on the situation. In most situations they are meant for correction. But in case of Alternating shooting they are meant for selection.

Selection:

- ➔ During alternating shooting to select if the left archer or the right archer starts shooting.

Correction:

- ➔ When in normal operation, to correct the sequence. (Jump from end to end or turn to turn. For example to move to CD archer instead of AB archer.)
- ➔ Correct timing before recover from emergency mode. To compensate the time left over for archers on request of the judge.

On keyboard the arrow keys can be used. But be aware that functionality of arrow keys can be changed by the owner of the timer to support a remote control. (PPT presenter).

Shoot OFF

ShootOFF

To trigger a ShootOFF if needed. Be aware the time is running directly after the ShootOFF button is pressed. (Same as pressing the next button for normal ends.)

Timing for ShootOFF is by default according to the WA rules. However, the timing can be adjusted in the timing and sequence menu of the program. The ShootOFF button can also be used for (one) recovery arrow. On keyboard the '1' key can be used. For multiple recovery arrows the 1 to 6 key can be used depending on the number of recovery arrows (and as result the timing needed). Be aware only the 1-6 key on the left side can be used. This is not possible with the 1-6 numerical keys on the right side of the keyboard.



Countdown to start match.

This button can be used before starting the match to show the audience when the match will start. By default 4 minutes is selected but can be adjusted to maximum 60 minutes in the settings menu. After the time finishes the system starts automatically with the preparation (10) seconds of the first (practice) end. The main screen will show which timing is set up:



Possible Control Hardware.

There are various ways to control the timer. It is up to the owner of the timer which hardware is used to control the timer and to set this up.

It can be as simple as a keyboard or mouse. But also other hardware like a PowerPoint presenter. Or an APP on smartphone/smartwatch.

Below an overview of hardware that possibly can be used to control the timer.

Keyboard / Mouse:

The most basic way to control the timer is the usage of keyboard and mouse.

Appendix 1 will explain which key belongs to which function.



(Laser) Pointer:

Easy and practical way to control the timer is the usage of a laser-pointer. Formally used to control a PowerPoint presentation.



Basically the buttons on the pointer simulate the buttons on a keyboard. But the key function can differ per brand or type of pointer.

Appendix 2 explains details which Pointers are tested. And how to set up.

Elgato Streaming Deck:

The Elgato Streaming Deck is a useful keyboard to control the timer. It has 6 buttons (the mini version) with ArcheryClock icons to control the timer. Be aware it is only usable if the controlling ArcheryClock timer is running Windows 10.



To setup, see <http://www.archeryclock.com/elgato.html>

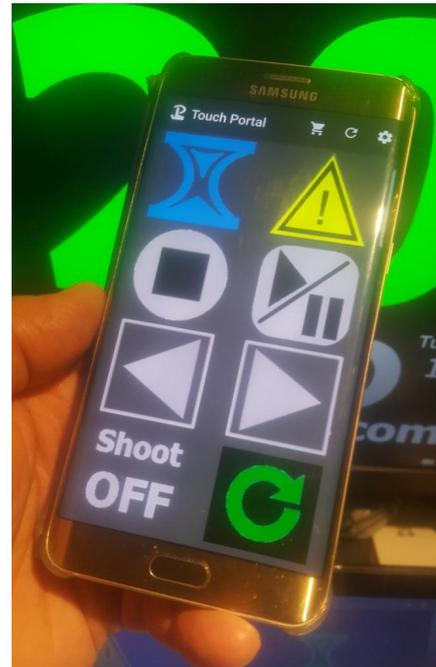
Touch Portal:

Touch Portal is comparable to Streaming Deck as an app on a smartphone. Basically the Touch Portal Software on ArcheryClock (Windows) PC configures buttons with Icons to simulate ArcheryClock Controlling icons.

The Touch Portal App on Smartphone shows the configured buttons and applies the function to control the timer.

To setup, see

<http://www.archeryclock.com/touchp.html>



PowerPoint app:

There are several apps available in Appstore's. They can be used to control the ArcheryClock Timer.

a Nice example is the PowerPoint app for Samsung Galaxy watches. It enabled you to control the timer with your watch connected with Bluetooth to the ArcheryClock controlling computer.

For detailed setup, see:

<http://www.archeryclock.com/app.html>



Sessions and Scenario's

With sessions is meant the way of shooting. For example:

- Alternating or non alternating sessions.
- Number of archers per target (for example ABC in case of 3 archers).
- Yes or no changing the starting archer per end. (for example always AB-CD, or next end CD-AB)
- Team or individual round (during alternating matches).
- Practice arrows or no practice arrows.

A Tournament can consist of multiple different sessions. For example an Olympic session starts with different classification round, followed by matches where the different matches are shot in parallel and finally alternating sessions.

To prepare the tournament, the different sessions can be stored in the ArcheryClock software in what is called Scenario's.

This chapter will mention the different session settings. Next chapter will mention how to store a session in a scenario to be available during the Tournament.

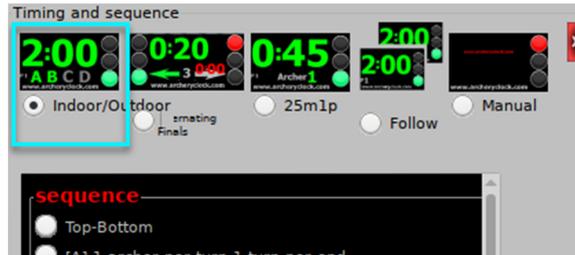
Sessions: Match type and Match settings

Creating a session starts with selecting the Match type. The system has 4 match types:

1. Indoor/Outdoor: Typically it controls the timing per end. And it controls who will shoot indicated by archers per target numbered A, B, C, etc. There is a variance called Bottom/Top which is basically the same as A-B or AB-CD. Bottom/Top indicates during an indoor match if the archers assigned to bottom target face are shooting. Or the archers with top target face assigned are shooting.
2. Alternating: Refers to a system mainly used for final rounds where competing archers shoot one after another (alternating). The system is mostly used as session after indoor or outdoor. It is available for individual and team round.
3. 25m1p: Is a system typically used in northwest of Europe. (Belgium and the Netherlands). 25m1P stands for 1 arrow per archer per end, Shooting on a distance of 25 meter.
4. In the event where time doesn't matter but still control is needed which archer is shooting, it is useful to use manual mode. It means it is possible to manage the traffic lights without timer.

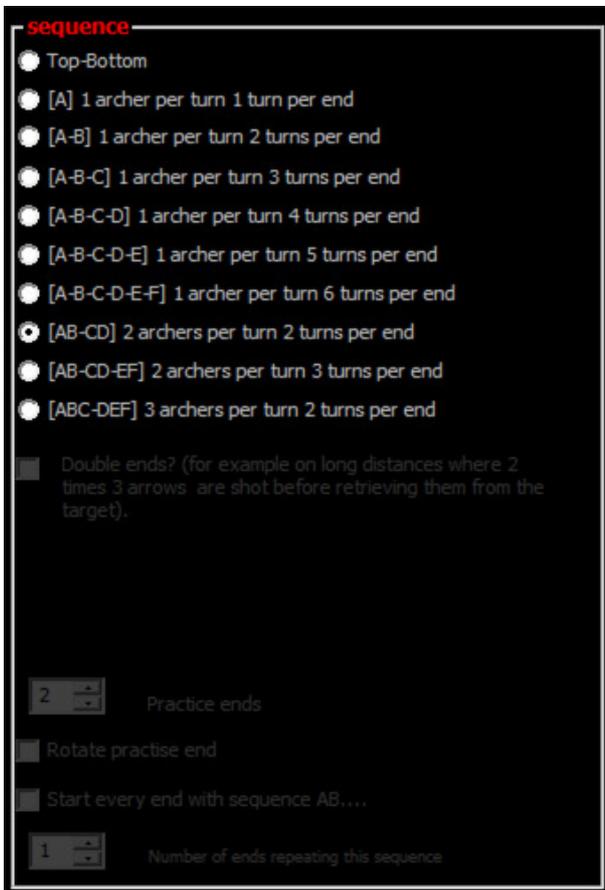
Set up an indoor/outdoor Session.

To setup Indoor/Outdoor matches, go to the timing and sequence menu  and select "indoor/outdoor" .



The settings for indoor/outdoor has 2 main sections.

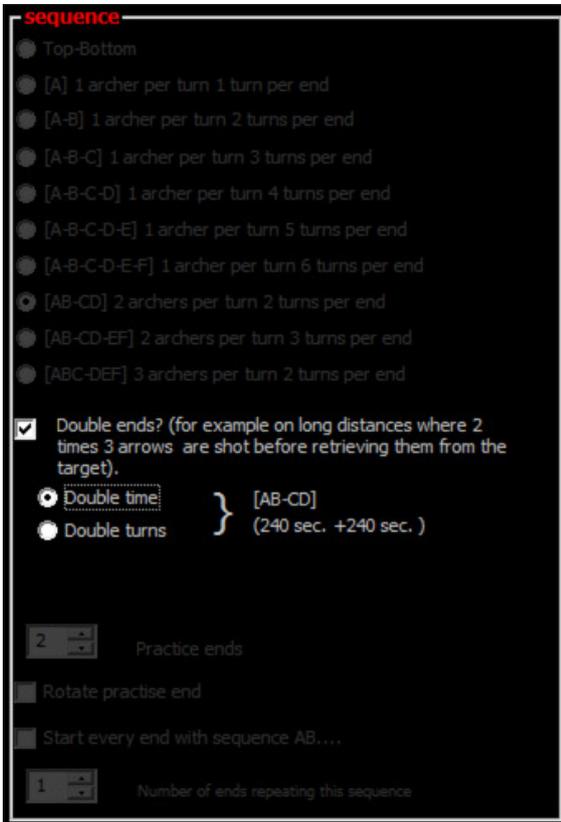
- The **sequence** menu where you can set the number of archers per target (ABCD..). start every end with the same sequence or rotate repeat sequences, etc.
- In the **timing** menu it is possible to adjust the time per end, time red. Timing for shoot-off, etc.



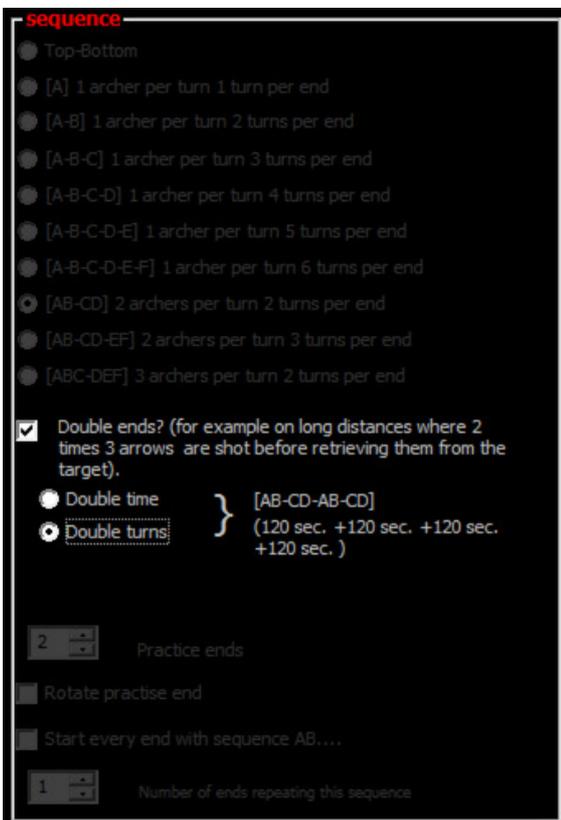
The first part of the **sequence** area determines number of archers per target and the number of archers per target per turn. For example AB-CD means:
 4 archers per target
 (A to D)
 2 archers per turn
 (AB or CD)

The first item is Top-Bottom. In this case there are 2 target faces on top of each other. Bottom means the archers who shoot on the bottom target face. Top means the archers on the top target face. So this end has 2 turns.

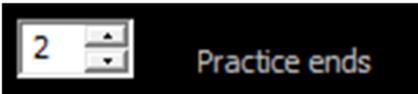
Double ends is meant for long distance ends. 60 to 90 meter. Because of the walking distance to retrieve arrows, double number of arrows are shot (6 instead of 3 arrows) before retrieving the arrows. There are 2 ways to shoot double ends:



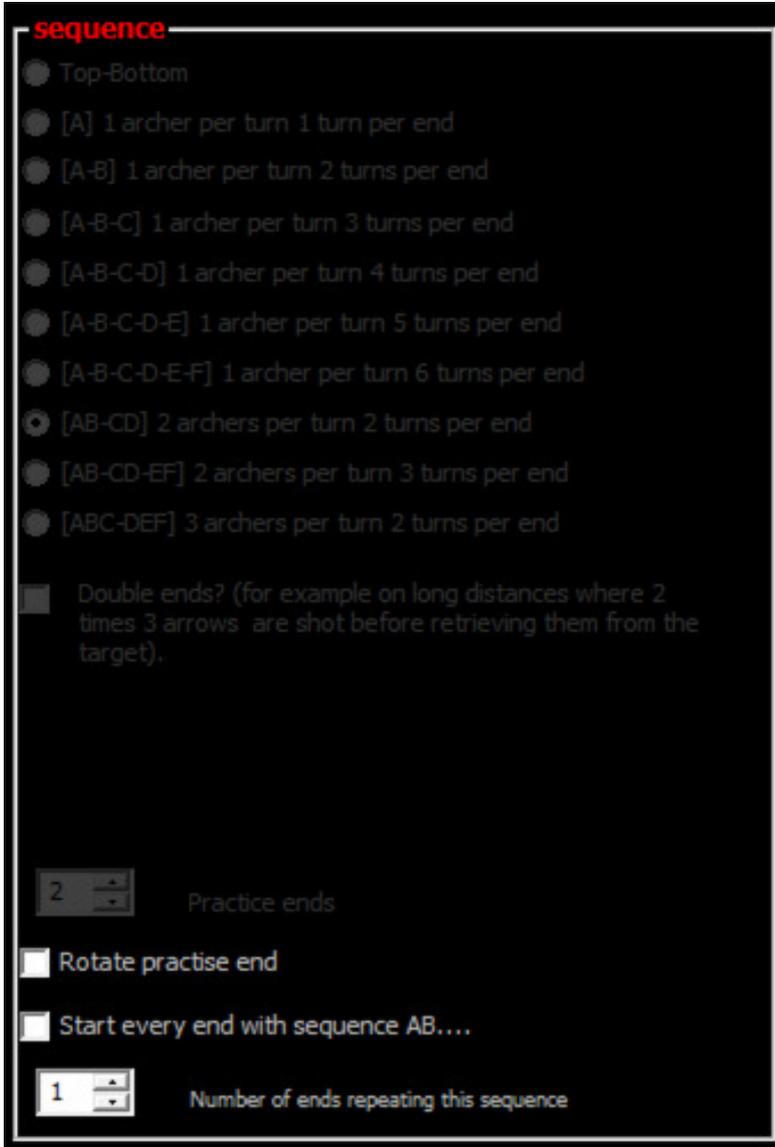
Double time. This is the most common way to double the ends. It simply means the archers get double the time (240 seconds instead of 120 seconds) to shoot double the amount of arrows (6 instead of 3 arrows).



Double turns. This is less common nowadays. It means every archer shoots 2 turns before retrieving the arrows. Every turn is still the standard time (120 seconds) and standard number of arrows. (3). However, in between the 2 turns for an archer, the other turns will happen. For example, sequence AB-CD results in AB-CD-AB-CD.



It is possible to change the number of practice ends by changing the practice ends box.



Sequence changes per end:

By default the practice ends repeat in the same sequence. While the counting ends changes per end. (Archers shooting the last turn, start next end in the first turn). However it is possible to change this.

By checking the checkbox "rotate practice ends", also at practice ends Archers shooting the last turn, start next end in the first turn.

By checking the checkbox "Start every end with sequence AB...", the counting ends will not rotate. So will start always with A...

There is a special setting possible named "Number of ends repeating this sequence". The default value is '1'.

This setting is meant for matches like the Vegas shoot or Kings of archery.

In those matches the counting arrows only rotate from first half of the match (first 30 arrows) to the second half of the match. (second 30 arrows).

If sequence is AB-CD and repeating ends is set to 10, the first 10 ends (30 Arrows) sequence AB-CD is used. The second half of the match (arrow 31 to 60) sequence CD-AB is used.

Setup **Timing**:

Although the default time for 3 arrows is 2 minutes. (120 seconds), it is possible to modify the time. Shooting time is seconds green and seconds Orange (yellow) counted together. By default 90 seconds (green) and 30 seconds (orange) is total 120 seconds.
 Red time, prepare shooting is 10 seconds.



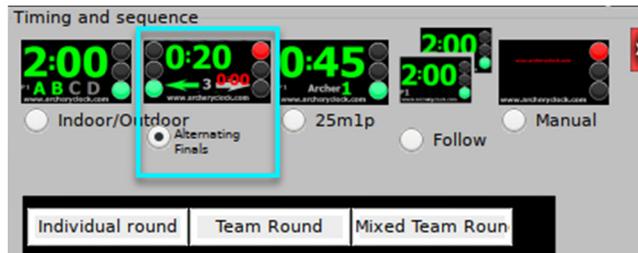
Tip: by using -1 (minus 1)

seconds red, the time pauses at 0 seconds till the "next" key is pressed again. In this way it is possible to indicate archers to go to the shooting line. And instead of waiting 10 seconds, the system waits till all shooters are at the shooting line, and director of shooting presses "Next" again to move to "green" and archers start shooting.

For Shoot-off timing, the default is 40 seconds. (10+30).

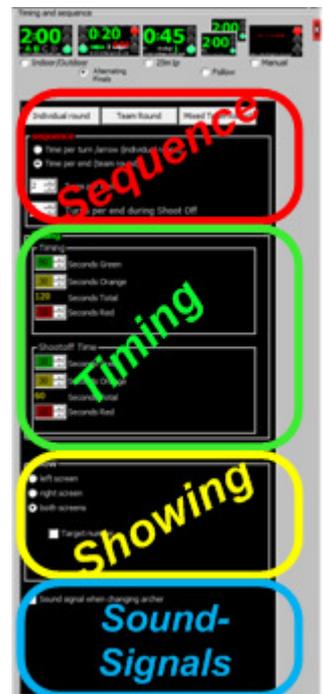
Set up an Alternating Session.

To setup Alternating sessions, go to the timing and sequence menu  and select "Alternating" .



The settings for Alternating finals has 4 main sections.

- The **sequence** menu. Mainly because sequence in team matches is different than individual matches. And nr. of turns is depending on nr. of team members.
- **Timing** menu. Also timing is dependent on team size.
- Showing menu and Sound signals is not applicable for this document since the DOS is not responsible to set up the system. System setup is the responsibility of the system owner. For details see <http://www.archeryclock.com/alternate.html>



To make the settings easier, there are 3 default buttons. For usage of the most common settings during WA alternating matches.

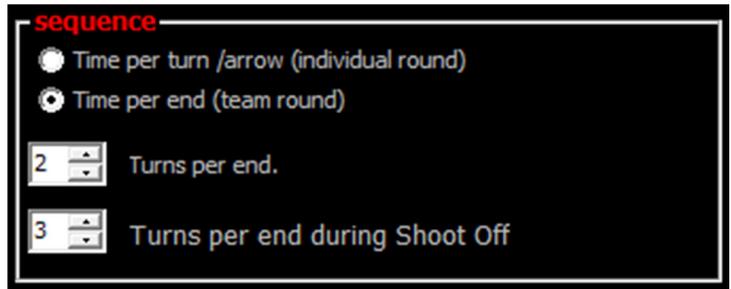


There are 3 default settings commonly used in WA alternating matches. These settings buttons preset the sequence and timing (shoot time and ShootOFF) for:

- Individual alternating matches. (3 arrows per archer, 20 sec per arrow, etc.)
- Team round. 3 archers per team. (total 6 arrows per team, 2 minutes per team, corresponding ShootOFF timing, etc.).
- Mixed team round. Main difference with team round is 2 instead of 3 archers per team. Which has impact on timing, sequence and ShootOFF timing.

Setup **sequence**:

When the default buttons don't fit to the needs, it is possible to change alternating sequence settings. The first setting in the sequence menu determines if the match is an individual round or team round. This means an important sequence difference.



- for individual rounds there is a fixed time per arrow. Every arrow the time starts ticking on the default time (20 seconds).
- For team round there is a fixed time for all arrows of a team. When alternate to the other team, the system remembers the time left over for when alternating back.

Turns per end is by default:

- 3 for individual matches (3 arrows per archer).
- 2 for team matches. (2 arrows per archer).

While Turns per end for ShootOFF is by default:

- 1 for individual matches. (1 arrow per archer).
- 3 for team matches (when a team consist of 3 team members). looks strange, but this is the case because there is only 1 arrow per archer. But alternating will happen 3 times in this case because there are 3 arrows per team. (alternating will happen per arrow in this case)

Setup **Timing**:

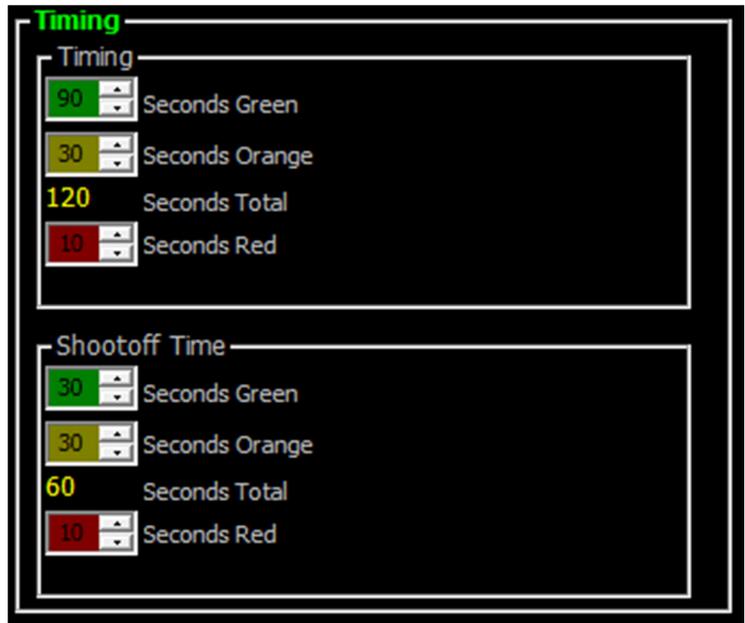
What will be recognized is a different set of timings for individual round and team round. When selecting individual round in the sequence settings, there are no separate settings for ShootOFF in the timing menu. This is the case because ShootOFF timing per arrow for ShootOFF is the same as timing for regular alternating arrows. (default 20 sec)

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While for the team round the timing for ShootOFF is different since the timing is not based per arrow, but per set of arrows for all team members. So it depend on the size of the teams.

As an example in the team round with 3 team members, in the regular alternating team match timing is 120 seconds. (for 6 arrows average 20 seconds per arrow). In the team match the time pauses when alternating while the time resets per alternate for individual round.

ShootOFF in alternating team round is based on 1 arrow per team member. So 60 seconds in total for a team size of 3 members.



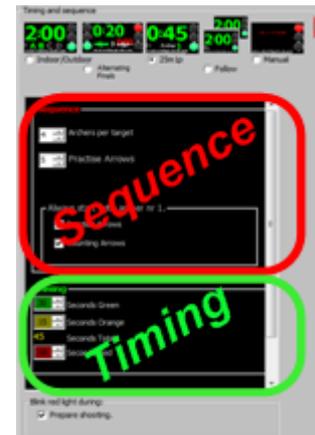
Set up a 25m1P Session.

To setup 25m1p matches, go to the timing and sequence menu  and select "25m1p".



The settings for 25m1p has 2 main sections.

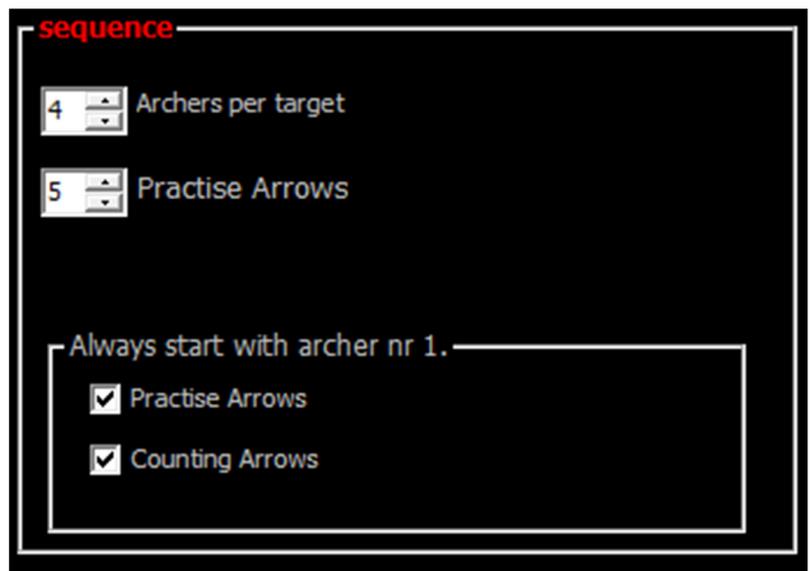
- The **sequence** menu. Mainly because sequence is depending on the number of archers per target.
- **Timing** menu. (time per archer per arrow to shoot)



Setup **sequence**:

The first setting in the sequence menu is the number of archers per target which can vary. The other settings are in most cases by default the same.

- Archers per target: The maximum is 6. From origin matches are shot with teams of 6 persons. Or 6 archers per target in case of an individual match. But nowadays it is also common to shoot with 4 person teams. The number of archers per target is mostly determined by the size of the archery range and number of archers in the match. More archers per target means the match will take longer.



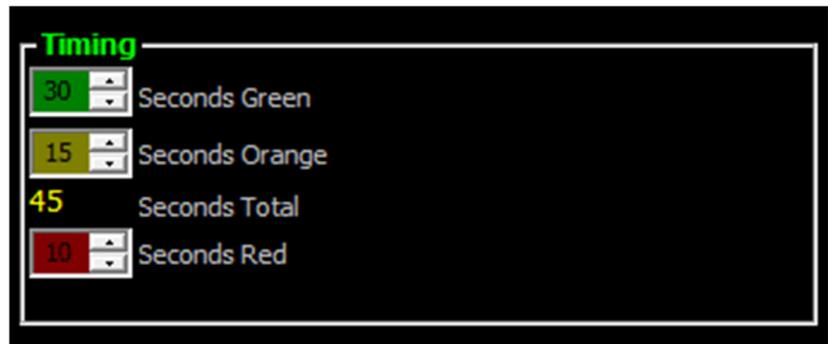
- By default a match starts with 5 practice arrows.

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- Default situation or 25m1P matches is that the same archer always starts per end (per arrow). So by default the 2 checkboxes for archer nr 1 starting for counting and practice arrows are checked. However, there are regions where starting archer rotates. This is mainly driven by the risk an arrow of an archer hits the arrow of another archer. Risk is equal when starting archer rotates.

Setup Timing:

By default, shooting timing is 45 seconds per arrow per archer. With 10 seconds to prepare. (changing archer.)



Set up a Manual Session.

To setup Manual matches, go to the timing and sequence menu  and select "Manual" .



Settings are not applicable for this document since the DOS is not responsible because it is part of the system setup. For details see <http://www.archeryclock.com/manual.html>

Store sessions in scenarios.

To prepare a tournament with different sessions, the different scenarios can be stored on 12 storage locations. You can store them behind F1- F12 key to be able to switch to a different scenario's.



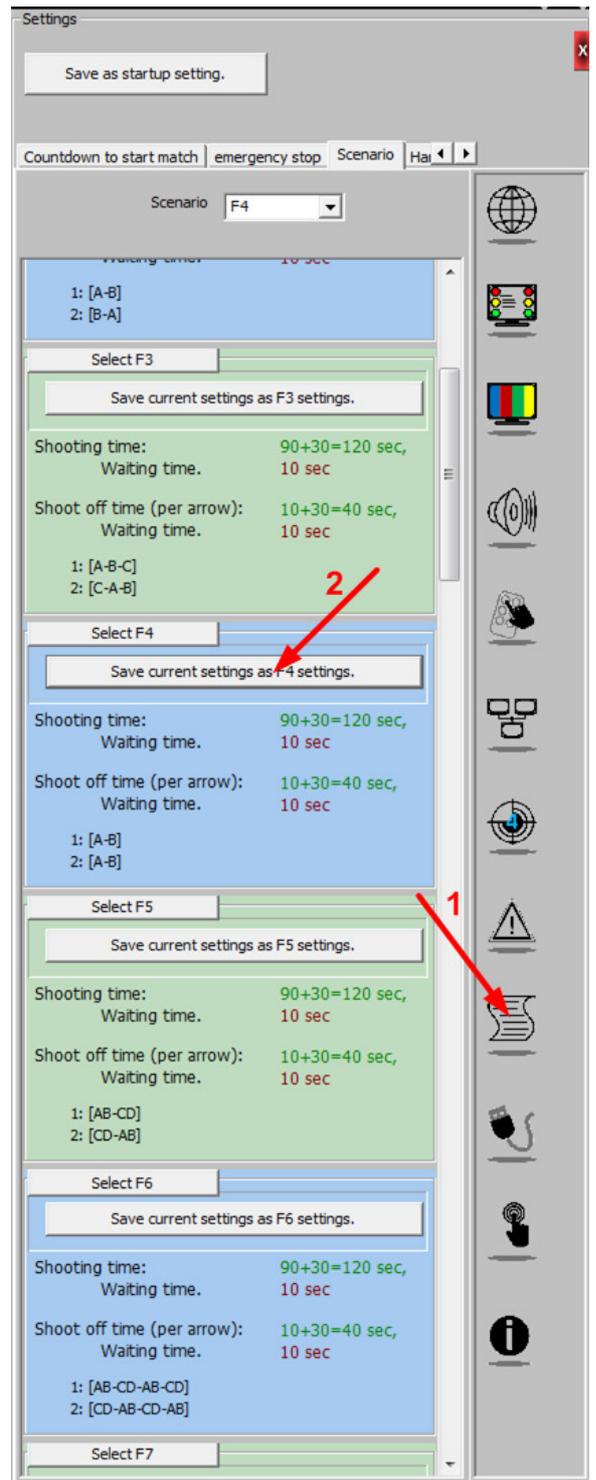
To store scenarios:

Setup the system to the session needed (like explained in chapter "Sessions and Scenario's"). For example select indoor/outdoor, select A-B in the timing and sequence menu. When your session is setup, you can store it by:

- Go to settings  --> scenario (1) menu and choose in which location you want the scenario to be stored.
- And press "Save current settings as F... settings" (2).
(For example, if you want the scenario to be stored in F4, select "Save current settings as F4 settings")

When you want to select a scenario during a match, select the F.. button on the top site of the keyboard. In this example F4.

(Be aware that in case of selecting scenario F5, the F5 button needs to be pressed twice. This is related to some presenters that use F5 to start presenting by pressing F5 on laser pointer).



Appendix 1 . Keyboard control

The most basic way to control the timer is the usage of keyboard and mouse.
An overview of functions to control with keyboard or mouse:

Main controlling keys:

Most important controlling key / icon is the "next function"



On the keyboard the space bar has the next function. ideally the control of the ArcheryClock timer is only done with this next function.



Emergency Stop can be triggered with the "E" Key.
Alternatively it is also possible to press ESC twice.



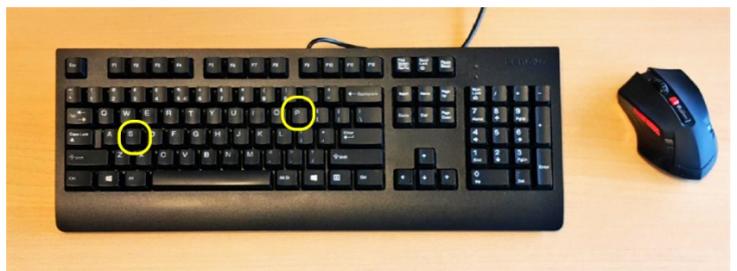
If time was running while pressing the Emergency function, it is possible to adjust the time left over with arrow keys. The time will continue pressing the next function.



Stop can be controlled with "S" key



Pause/Play can be controlled with "P" key



Countdown to start match can be started with the "C" key



By default the countdown time is set to 4 minutes. It can be adjusted to maximum 60 minutes in the setting menu chapter "countdown to start match".



Correcting turn or end number. Selecting left or right archer, can be done with arrow keys.



Because some laser pointers also use the arrow key function to control the timer, it is possible to change the function per arrow key. To modify functions go to:
Settings menu --> Control settings --> Keyboard key settings.



The ShootOFF can be triggered pressing the "1" key. on the left side of the keyboard

Shoot OFF

The same function counts for 1 recovery arrow in case an archer has issues with shooting gear.

To recover from multiple arrows the keys 2 to 6 can be used depending on the number of arrows to recover. Pressing "2", 2 times the ShootOFF time will be triggered. Pressing "3", 3 times. Etc.

The recovery arrows start with 10 seconds preparation (red) time.

To start recovery arrows without 10 seconds preparation time, select "shift"+1, "shift"+2, etc. Be aware this only functions for the 1 to 6 key at the left side of the keyboard. Not the numeric path on the right side.



ShootOFF timing can be changed in timing and sequence menu for the different shooting modes.

The F1 to F12 keys on topside of the keyboard are used to select a stored scenario.



See chapter "[using prepared scenario](#)" for a more detailed information for this functionality.



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A lot of laser pointers use the pageUp and PageDown key to control a presentation. So by changing the laser pointer key functions, it is possible to change the function for page up or down. Some pointers have an extra button to blank the page during a presentation. This is done simulating the "B" or "."(period) key. So it is also possible to manipulate the function behind this key.

To modify functions go to:
Settings menu --> Control settings --> Laser pointer control.



To hide unnecessary icons, press the "H" key.
Or click on one of the timing digits.

120

By pressing again, the icons will get visible again.



Switch between Seconds or Minute notation is possible using the "M" key.

120 ↔ **2:00**



It is possible to shut down the system or the remote (follow) system with a key combination. (Raspberry-PI shutdown only)

Shutdown remote (Client) system



By pressing "**CTRL+END**" the remote system will shut down.

By pressing "**CTRL+HOME**" the main system will shut down.



Appendix 2: Laser pointer usage to control the timer.

Tested (Laser) pointers and setup.

List below are pointers tested and okay to control the ArcheryClock timer.
 If you use a different pointer which is okay. Please let us know the Brand/type and share a picture. Also include the settings to make it work. (Key functions behind the buttons).
 If you have a pointer that needs modifications in the software, also let us know.
 You can share the info via info@archeryclock.com.

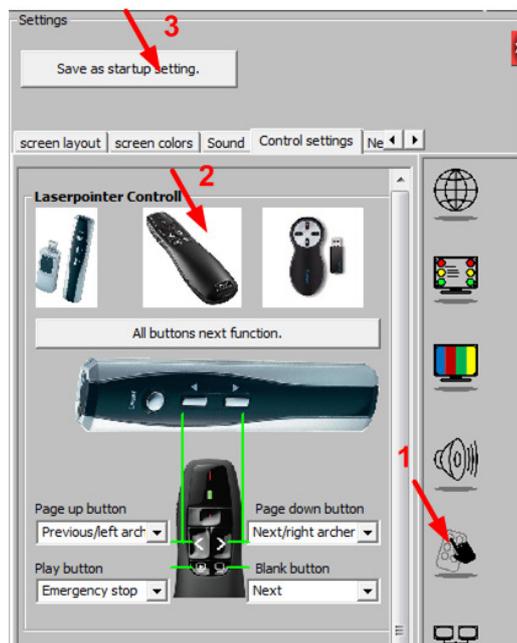
Kensington wireless presenter.

To select the correct function, go to the settings menu select control settings (1). click on the image of the Kensington remote (2) click "save as startup settings" to store the functions for next sessions. (3)



Logitech R400

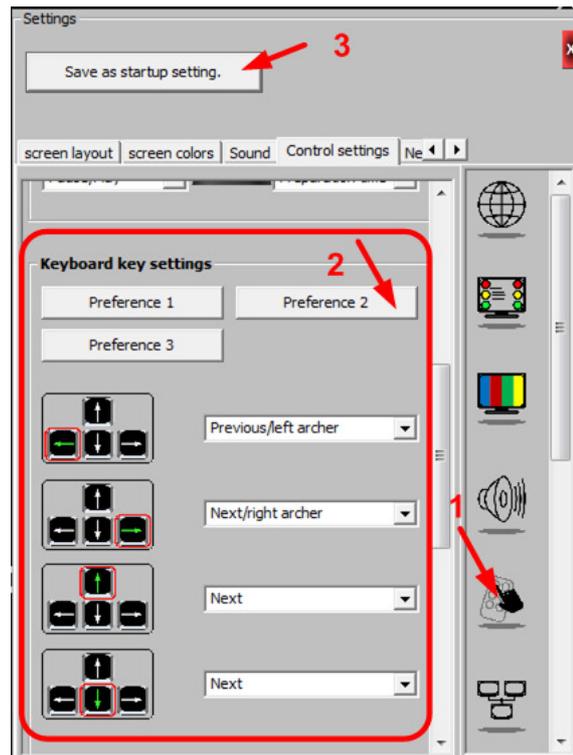
To select the correct function, go to the settings menu select control settings (1). click on the image of the Logitech remote (2) click "save as startup settings" to store the functions for next sessions. (3)



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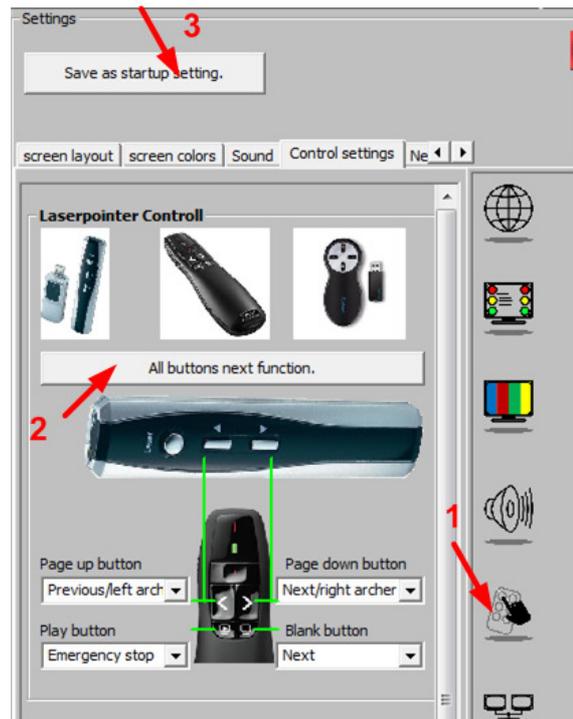
Logitech R500

To select the correct function, go to the settings menu select control settings (1). select the preferable function per arrow key or select preference 2. (2) click "save as startup settings" to store the functions for next sessions.



Viboton PP3000

To select the correct function, go to the settings menu select control settings (1). click on the "all buttons next function" button(2) click "save as startup settings" to store the functions for next sessions. (3)



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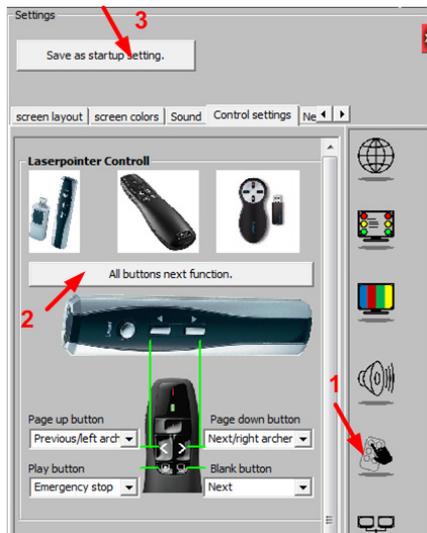
Trust Aroo

To select the correct function, go to the settings menu select control settings (1). click on the "all buttons next function" button(2) click "save as startup settings" to store the functions for next sessions. (3)



Moveflash TB08

To select the correct function, go to the settings menu select control settings (1). click on the "all buttons next function" button(2) click "save as startup settings" to store the functions for next sessions. (3)



Unknown Brand

The version without Air Mouse function.

To select the correct function, go to the settings menu select control settings (1). select the preferable function per arrow key or select preference 3. (2) click "save as startup settings" to store the functions for next sessions. (3) (this pointer works only with release 2.6.1.3 or newer)

