



SHOOTER / SCOREKEEPER GUIDE

#	fps	score
19	1987	X
15:05:53 (10m 22s ago)		
18	1914	X
17	1840	10
16	1801	10
15	1939	10
14	1716	10
13	2296	10
12	2247	X
11	2038	10
10	1701	10
9	1850	10
8	2238	10



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PURPOSE OF THIS MANUAL

The purpose of this manual is to provide the Shooter or Scorekeeper the training necessary to effectively operate the Silver Mountain Targets system in a competitive match or event. It does not cover hardware features, hardware setup, or installation.

SYSTEM DESCRIPTION & PARTS IDENTIFICATION

1.1 Targets

In the Plug-n-Play system utilizing the S25 server, the targets are the heart of the bullet sensing functions, utilizing state of the art acoustic sensors to measure shot location, angle, and speed. The targets consist of 4 dual microphone sensors, mounting hardware, and cabling.

Microphone sensors can be mounted on existing target frames, custom made frames that improve sensor geometry, or built into the range design for new ranges. Targets do not require pit raising and lowering mechanisms, so for new ranges they can be permanently mounted behind a low berm wall that protects the lower sensors and Target Controllers



The main components of the target are the dual microphone sensors. These sensors utilize a unique ball-and-socket swivel mount allowing the user to align each microphone to other mics on that target, and to the firing line. Once aligned, tightening the screws on the base will lock the swivel mount in that position. The microphones can also be easily removed if desired, since they incorporate a quick quarter-turn mechanism attaching them to the base. The base stays mounted to the target frame.



1.2 Target Controllers

The target controllers in the Plug-n-Play system typically control up to 4 targets each, coordinating all sensor readings, and transmitting those readings to an uplink radio that passes the data along to the server. Each controller contains a computer, radio, and power conditioning hardware.



Target controllers used in the S25 G2 System utilize single controllers on each target. These controllers have their own radio and panel antenna, transmitting data directly to the line server. In addition, the Plug-n-Play 3-Target Controller can be used intermixed in the same system with the G2 single Target Controller.

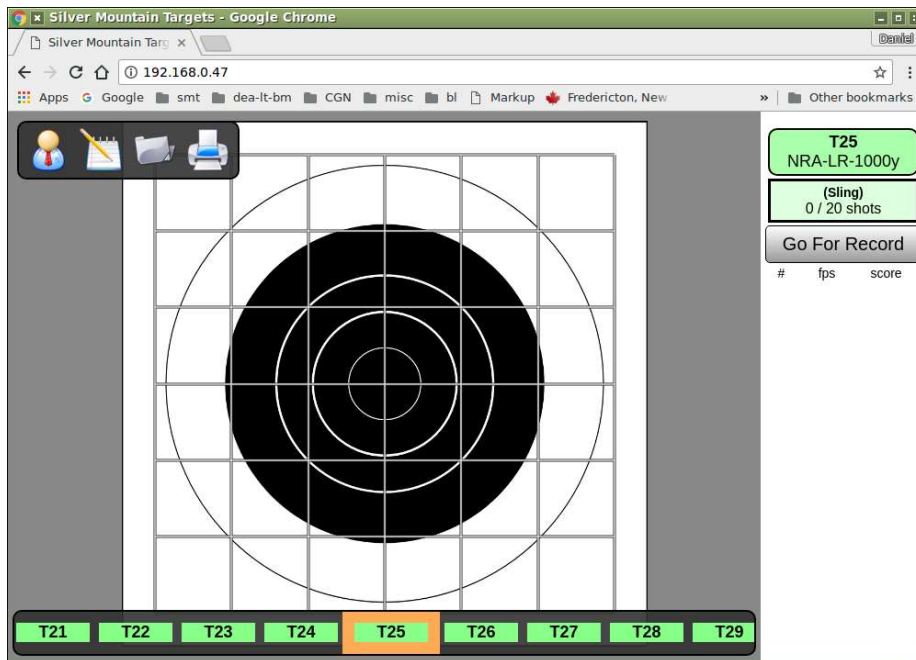
In the system utilizing the Plug-n-Play 3-Target Controller, each Target Control box contains a G3 Controller for each target (typically 3 or 4 per box), which independently communicate to the uplink radio, power conditioning, and its own shade-protected

temperature probe. The box is weatherproof, and utilizes water-tight connections, allowing the unit to be left installed year-round.

In the system utilizing the G2 single Target Controller, the controller is mounted on the target frame below the berm, and communicates via its own antenna directly to the line server.

1.3 Server

The S25 server is the brains of the target system. It sits on the firing line, receiving data from all targets via the uplink radio. It consolidates that data and presents it to the shooter or scorekeeper on the firing line.



The line server contains the main system computer, radios to connect to shooter's display devices, rechargeable batteries, and an antenna for communicating to the pit uplink radio. It has power and activity LED's, power switch for safe system shut down, and a power receptacle allowing the unit to be plugged in to recharge the internal batteries after your match.

SOFTWARE BASIC OVERVIEW

2.1 Shooter and Scorekeeper Features and Functions

Shooter and Scorekeeper functions can be broken down into main categories. First are functions necessary when users are logged into the system, and second are functions necessary when users are not logged in, and strings of fire are manually transferred to paper scorecards.

2.2 Menu Structure

There is only one main level to the menus when logged in as a Shooter or Scorekeeper, or when users are not logged in.

Main Menu



This menu is accessible to all users. This is the main screen for witnessing and recording shots fired on the target

Users



This icon looks like a man with a tie and is used to log into the system as an advanced user such as Admin or Range Officer, or as a competitor or scorekeeper when individual users are desired.

Notepad



This icon allows the user to enter Plot Mode, displaying horizontal and vertical shot dispersions

Folder



The Folder Icon provides access to saved strings of fire

Printer



Allows printing of displayed targets

Main Menu/Users

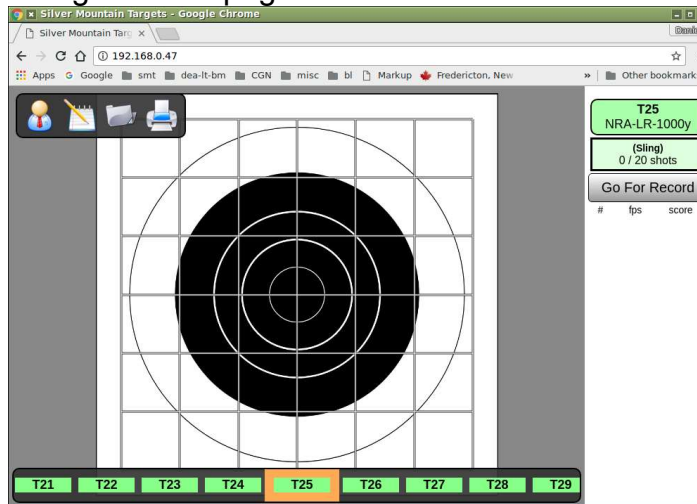
When the Users Icon is selected, the user is prompted to enter his/her competitor number or username. The Administrator (Admin) of this system has the capability to assign the advanced Range Officer privilege to any user, or to setup individual competitors. Once a user has had his profile created, he may log in with his username.

GENERAL

3.1 Connecting a Display Device

Almost any display device with WIFI capability and a modern browser (laptop, tablet, smartphone, etc.), may be used to connect to the target server. Follow this simple two-step process:

- Connect to WIFI
 - Have your device scan for available wireless networks. On most tablets or smartphones this will most likely mean choosing “Settings”, then choosing “WIFI”.
 - You should see a WIFI network named **SilverMountainTargets**, which you should connect to. This network is “open”, there is no password required.
 - If you are using an Android cellphone you might get a popup message “No Internet access”. This is OK, since the **SilverMountainTargets** WIFI is a closed WIFI, not connected to the internet. In response to “Stay connected?”, click **YES**
- Once connected to the network, open a browser
 - Open up an internet browser on your device. Safari, Chrome, and Firefox are common browsers known to work well.
 - In the Address bar, type in the IP address **192.168.0.XX**, where “XX” is the number provided by the Range Officer for the system you are connecting to that day.
 - The TargetViewer page should now load

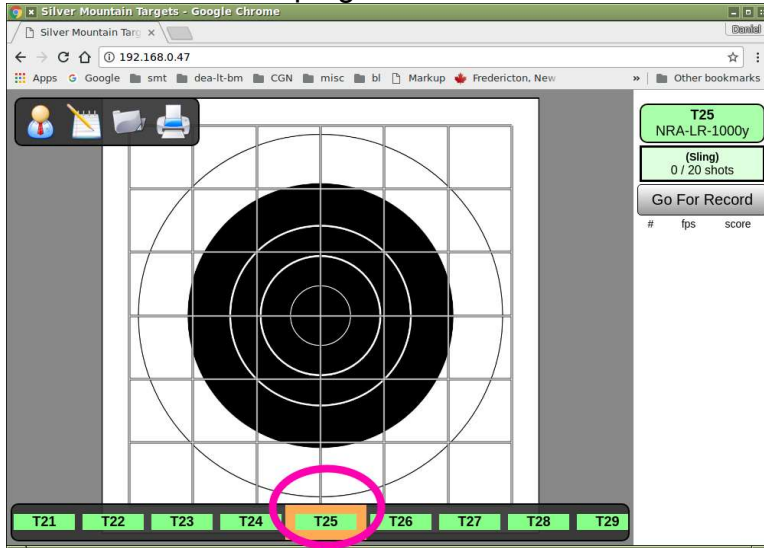


- Optionally, you can create a bookmark for easy future access

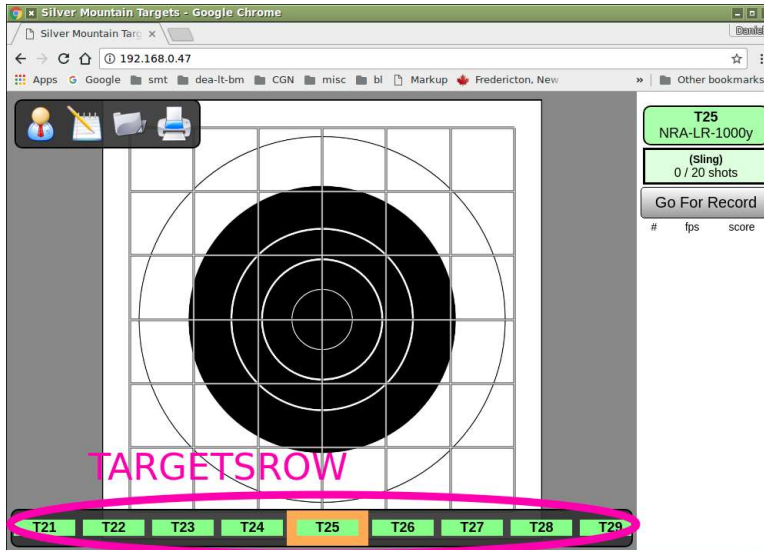
TARGETVIEWER BASICS

4.1 Choosing a TargetFrame

Select the TargetFrame you wish to shoot on or view. This TargetViewer is looking at Target #25, indicated by the orange highlighting around “T25” and also the TargetFrame name “T25” in the top right corner of the ShotsList column.

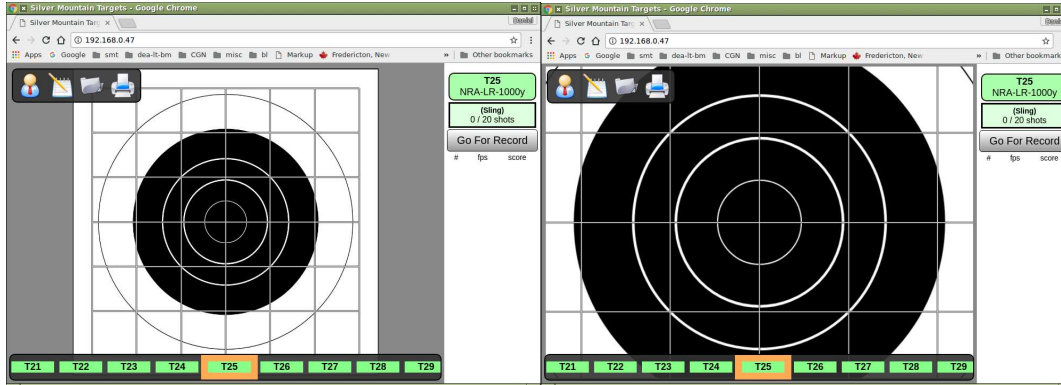


Touch or click any of the other TargetFrames on the “TargetsRow” on the bottom of the screen to view them:



4.2 Zooming and Panning

If using a touch screen device, you may “pinch” the TargetFace portion of the screen to zoom in or out, or “drag” it to pan.

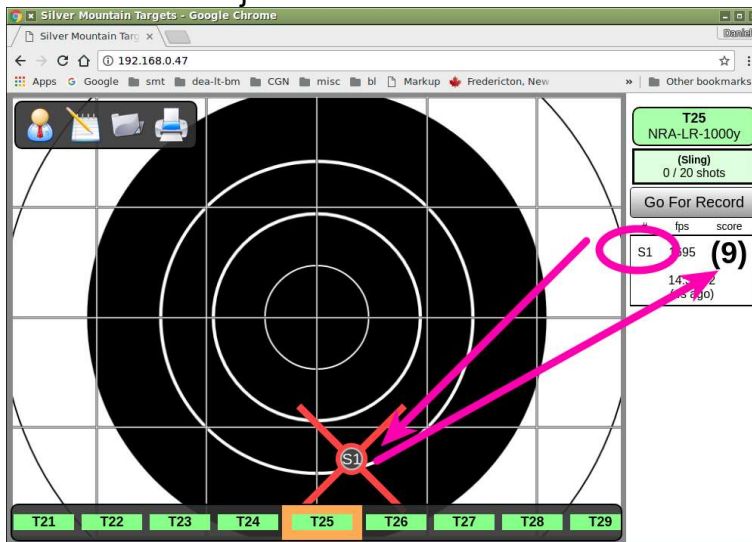


Alternate input methods are also available:

- Zooming in TargetFace
 - On a touchscreen device, a “single tap”
 - With a mouse button, a “single click”
 - With a mouse wheel, a “roll forward”
- Zooming out TargetFace
 - On a touchscreen device, a “single tap-and-hold”
 - With a mouse button, a “single click-and-hold”
 - With a mouse wheel, a “roll backward”

4.3 Firing a Shot

Here a shot has just been fired. You can see that it is a low “9”.



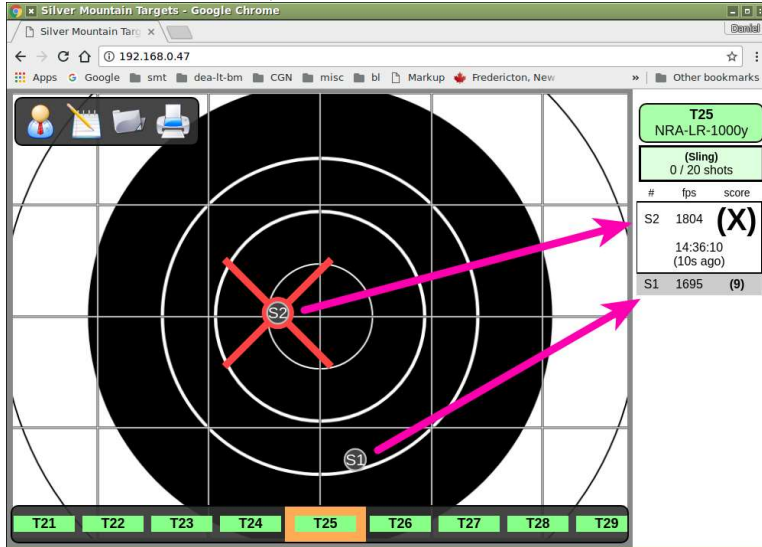
There is a grid overlay on the TargetFace that is in MOA (minutes of angle). You can see that this shot has hit about one and a quarter minutes low and almost half a minute right.

Here the Range Officer has programmed a course of fire of two nonconvertible sighter shots and twenty shots for record, therefore this first shot is shown as “**S1**”, or sighter

number one. The next shot fired will display as “S2” and the shot after that will show as “1”, the first record shot.

4.4 Firing another Shot

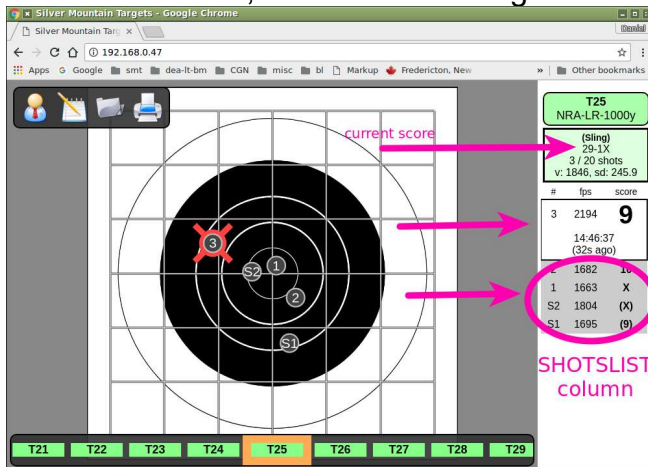
Here the next shot, “S2” has been fired and it shows as a nice left-side “X”.



Notice that the new shot value is shown at the TOP of the ShotsList column on the right side of the screen. Also note that the newest shot is highlighted with a red circle and X.

4.5 Firing Three More Shots

Three shots later, here are how things look on the TargetViewer

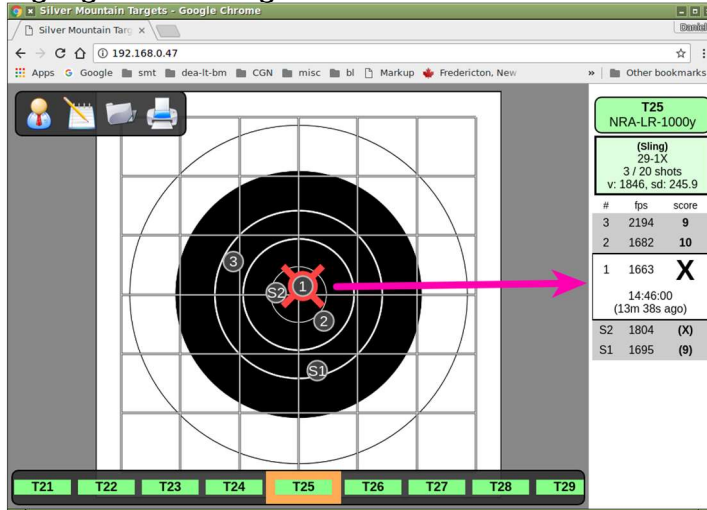


So far, our score is **29-1X** from the first three record shots fired. The score value of sighters **S1** and **S2** are not included in the total score, nor are they used in the calculation of mean speed “v:1846” or standard deviation.

Record shot **3** scores 9 points, and was fired at 14:46:37, which was 32 seconds ago. Because #3 is the currently selected shot it is highlighted by a red cross on the TargetFace diagram and it is shown in a large white ShotsList box.

Note that all of the other shots fired are shown both on the TargetFace diagram, and also in the ShotsList column. They are shown in grey rows in the ShotsList box and only limited information is shown (shot number, speed and shot value).

Any shot in the ShotsList column may be selected, in which case it gets the red-cross highlight and a large white ShotsList box with extended information:

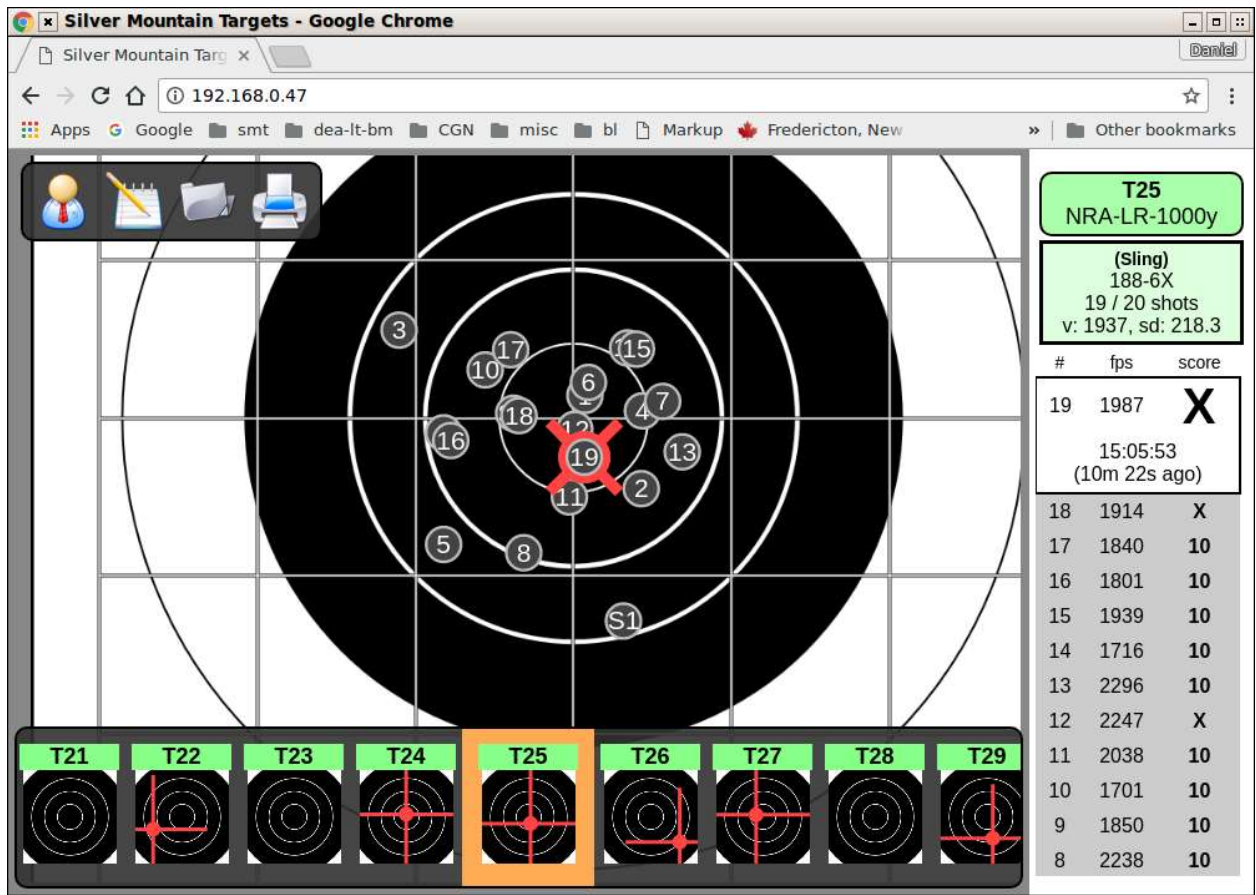


4.6 Viewing Neighboring Targets

4.6.1 Quick View of Several Neighboring Targets

Sometime it is useful to see where the shots are arriving on nearby targets. If you touch your orange-bordered **T25** TargetFrame name in the lower TargetsRow, it will show a “neighboring targets” view, in which the most recent shot fired is visible on several neighboring targets.

To hide the neighboring targets display, touch your TargetFrame **T25** again.



4.6.2 View All Shots on One Neighboring Target

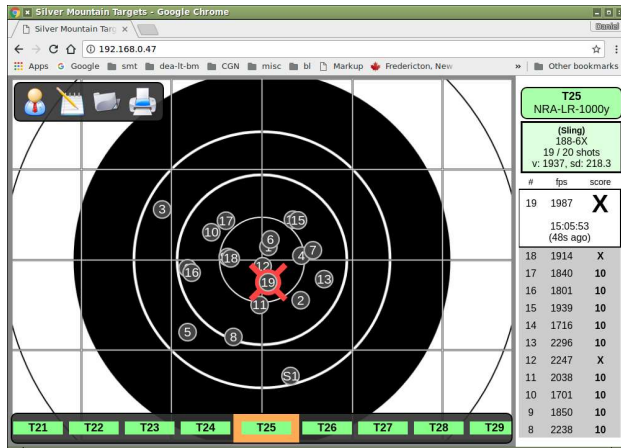
At times, you may be interested in seeing all shots fired so far on a neighboring target. To see this, simply select that target in the TargetsRow (i.e., T24). Don't forget to change back to your own target by selecting T25 again, before firing your next shot.

4.7 Portrait or Landscape Views

The TargetViewer will automatically adjust itself to "portrait" or "landscape" orientations. Choose whichever you prefer and is best suited to the task at hand:

- "Landscape" mode offers maximum width
 - good for observing shots on as many neighboring targets as possible
 - Good use of shot plotting area for long range shooting with "wide" groups
 - Might have to scroll ShotsList area to see earlier shots

- "Portrait" mode offers more height
 - More shot values visible in ShotsList Column
 - Scorekeeping with a smartphone



4.8 Capturing Results

When a string of fire has been completed, it is often necessary to capture the results. If users are logged in, the string will be automatically saved when cleared (see next section). If paper scorecards are used, all shots fired should be transferred to the paper sheet. Alternately, the shooter or scorekeeper may want to capture a screen shot of the data, which is possible on most tablets and smartphones.

4.9 Finishing a String

When a string of fire has been completed, both the shooter and scorekeeper are satisfied with the results, and scores have been copied or transposed to paper, the string of fire can be cleared.

Click on the “Finish String” button at the top of the ShotsList, and if desired, name the string that will be saved.

LOG-IN MODE – ASSIGNED SHOOTERS AND SCOREKEEPERS

5.1 Running a Match or Event

If the Range Officer or Match Director has decided to formally track the shooters or scorekeepers involvement with each string, they will configure the software to use “Login Mode” for this match.

- A “Users database” must be created and maintained (only the ADMIN user may add/delete/edit users)
- An “electronic scorecard” is created for each string
- A shooter must login, for his shots to be counted

-
- A scorekeeper must login in order to “manage” the string.
 - Convert or “unconvert” sighters
 - Strike-out a shot
 - Save a string
 - If dual-mode TargetFaces are in use, the correct TargetFace (Sling or F-Class) is automatically selected, based on the shooter’s attributes

When a shooter has finished firing, the RO, Scorekeeper, or Shooter may press the “Save Final Scores” button. You may enter a shooter name, series name, etc., which will be visible when the strings are later reviewed.



OTHER SPECIFIC FUNCTIONS BY MENU

6.1 User Icon

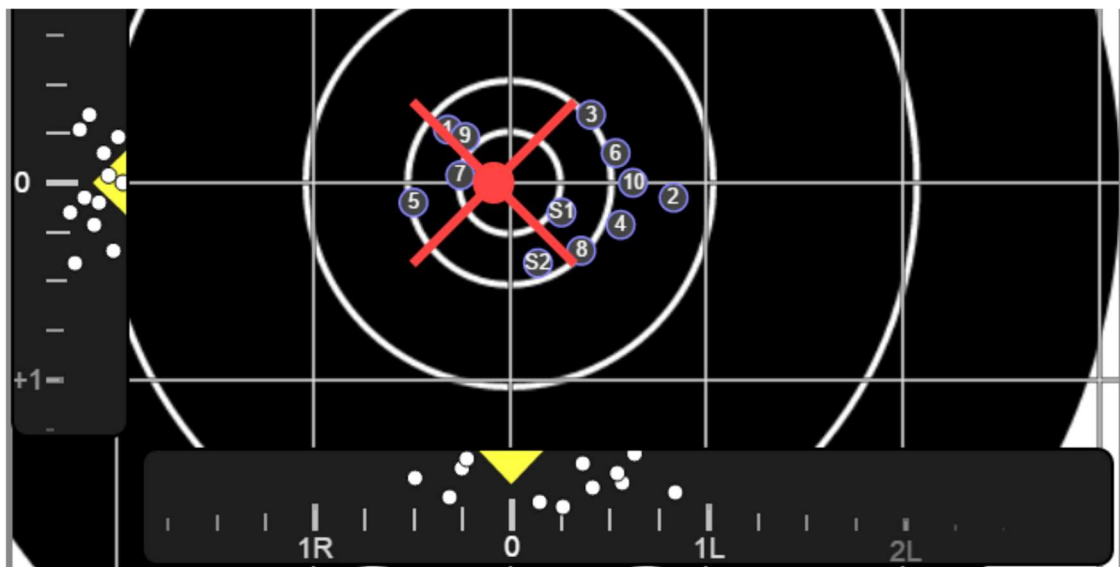
Logout

Allows user to log out

6.2 Notepad Icon

Plot mode provides the same functionality as a mechanical plotter with the added convenience of marking each shot for you.

This is a memory aid useful for visualizing your group and recording scope settings for each shot. It will not tell you what to set your scope to, calculate your group center, or predict the wind.



The size of your group is the dispersion of your shots had you not touched your scope settings for the entire string. This is very useful for understanding the precision of your aim, your rifle, and the wind effects.

Moving the sliders will move your group around and show you where your shots would have landed had you fired with this setting for all shots. This may help you visually determine which setting is optimal for the next shot.

The white dots on the sliders mimic the functionality of graphing. Each dot represents where a shot landed relative to your scope setting on the elevation and windage axes separately. Equivalently, this shows you what scope setting would have landed this shot in the center.

To use plot mode:

- Using the sliders, set the scope elevation and windage to match what you have on your scope BEFORE firing each shot.
- As you adjust your scope, adjust the plot immediately to help keep them synchronized.

If you fire a shot with different settings than recorded, select the shot in the ShotsList and adjust it with the pop-up.

6.3 Folder Icon

This menu selection will allow the user to select a saved string and recall it onto the TargetFace.

6.4 Printer Icon

Allows printing of the displayed target

TROUBLESHOOTING

7.1 WIFI

In rare instances, WIFI connection will be lost to a display device. If this occurs, a large red X will be displayed across the entire target face. Typically, this is a temporary situation, and waiting a few seconds will correct it. However, it can be caused by distance from the shooter to the Line Server, or obstructions between the two. In this case, make sure the shooter's display device has a clear line of sight to the Line Server.



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