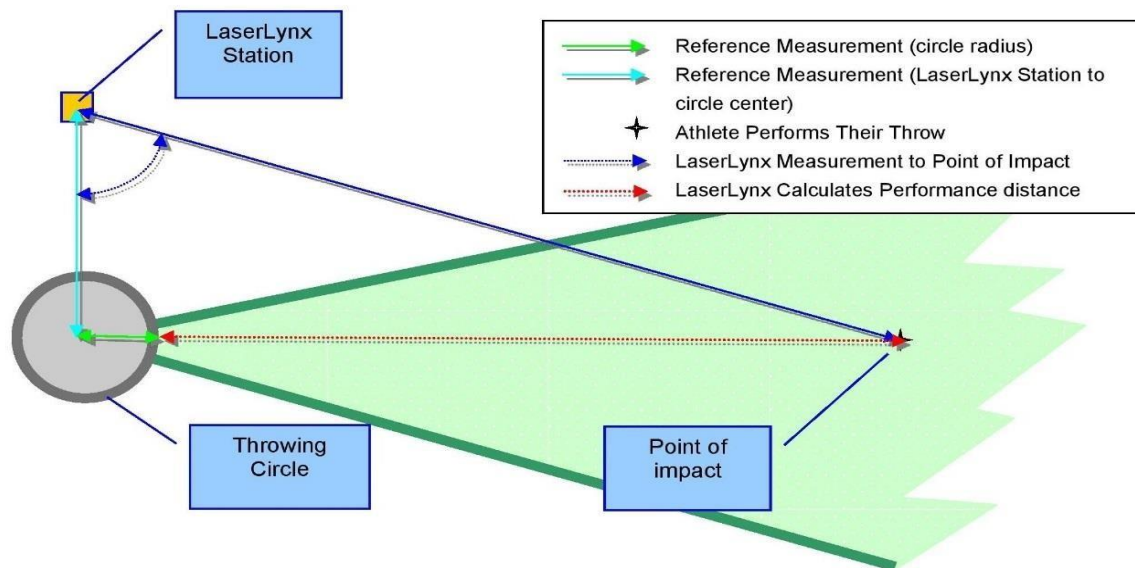


The following info will follow the steps that should be taken when arriving at a meet to do throws with the EDM/LaserLynx (EDM) and FieldLynx equipment. Don't worry if you don't get how to do this just by reading these instructions. Once you do it in real time this all will become much more rational and will probably take less time than reading through this document.

First Step: Pull the wing of the cage back so you can set up and position the "EDM/LaserLynx tripod so it can see the radius of the back circle. Place the tent so the tent legs don't get in the way of the EDM laser when focusing on the radius of the circles/runway or any of the landing area. It should be out of the way of the athletes and any wayward implements. Setting the tripod/tent up first will also keep the equipment dry during setup.



Next step is to find the radius of the circle or runway from the front of the circle/line within the sector lines. This can be done in conjunction with setting up the sector lines. The reason you only use the radius from the front part is **not all circles are exact** and when using the EDM using the center of the circle instead of the radius from the front will probably throw the measurement off by a CM or two.

- Determine the center of the sector lines on the circle. (Red and Green lines.)
- From the center of the sector lines on inside the rim/line measure the radius of the circle. (Hammer/Shot Put = 1.0675M. Discus = 1.250M. Javelin = 8M) Place a small mark at the radius of the circle/line and then another small mark about 20CM along this line towards the front of the circle.

- Take something with a right angle, (can be a square, or a book or piece of paper,) and place one corner on the radius mark and the edge on the mark along the line. Place another mark along the right-angle line then flip the square over and do the other side. This will give you a right angle to the center sector line.
- Now measure the radius from the sides of the circle through the marks and mark those radii. You may have to move the original mark slightly to get it equal distance from both sides.
- You may now lay out the sector lines using the radius mark.
- If there are 2 circles, (Ham/Dis) set up the second one the same way. This method can also be used for Shot Put and Javelin.
- NOTE: Once you are certain the mark for the radius is in exactly the right spot after testing it with the EDM, you could drill a small $\frac{1}{4}$ " hole in this spot and then this would never have to be done again. Check with the local organizing group before you do this.

Setting Up the Tripod & EDM

- Set the tripod in a spot where you'll be able to see the marks you just made in the circles/runway without interference from the cage poles or tent poles. You should also have a clear vision to all areas of the landing sector.
- Open the legs of the tripod equal width apart. Set the legs of the tripod so you won't have a tripod leg between your legs when you're taking measurements in the sector all day, you'll be less likely to kick it that way. Flip the levers on the tripod legs and extend them so that the top of the tripod is at about chest height to the operator. If you're going to have multiple people using the EDM, use the shortest person.
- Use a standard level on the tripod tabletop to level it. If you are on grass, push the legs of the tripod into the ground by stepping on the foot rests at the base of the tripod. On a hard surface you'll have to adjust the legs to get it level.
- Place the sighting unit on the tripod tabletop and line up the threaded hole on the bottom of the unit with the securing screw/handle beneath the tripod tabletop. Center the unit and tighten the screw/handle.
- Make sure the levels on the sighting unit are on your side of the tripod.



Sighting Unit

- Laser Aperture, (not shown)
- Eyepiece
- Fine level adjustment bubble
- On/Off buttons
- Round level
- Precision level adjusters

Note: Data out port not shown

Leveling the EDM Sighting Unit

- Turn the sighting unit on the tripod tabletop until the “**Laser Aperture**” is facing the sector and circle.
- Turn the “**Precision Level Adjusters**” until the bubble is centered in the middle of the “**Round Level.**”
- Locate the “**Fine Level Adjustable Bubble**” on the sighting unit. Continue to move the precision level adjusters until the bubble in this level is also centered. (This is a VERY fine adjustment and the bubble moves slowly.)

NOTE: When you turn the sighting unit around to various parts of the landing sector, the bubbles in the levels should remain centered.


Connect the EDM Sighting unit to the computer and start the EDM

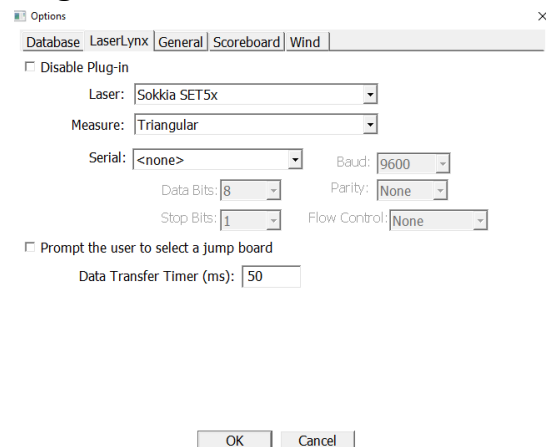
- Connect the serial/USB cable to the sighting unit. Remove the black rubber stopper from the port below the “**Laser Aperture**” and connect the cable to the port.
- Put the battery into the EDM. Little holes go to the bottom.
- Connect the serial/USB cable to the FieldLynx computer’s top USB-port on the right side of the laptop. Mouse will go in the bottom port.
- Turn on the laptop.
- Push the “**On**” button “**ONCE**” and quickly to turn the EDM on. Don’t push any other buttons on the EDM. If you go past the first menu FieldLynx won’t connect.
- Take the lens cap off the EDM.
- Start the FieldLynx program

Note: To turn **OFF** the EDM you need to hold the button under the little light icon and the “**On**” button quickly at the same time.

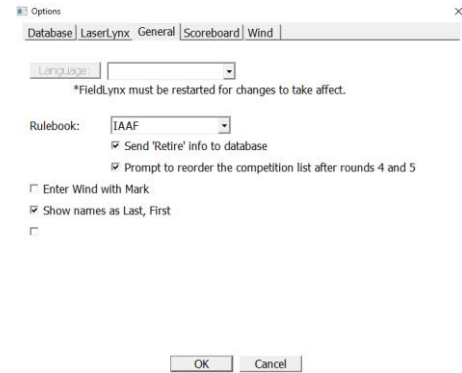
Configure the EDM/LaserLynx Options in FieldLynx

NOTE: The only part of this you should need to do is to make sure you have the right USB/Com Port.

- Open the FieldLynx Program and the first window that opens click the  icon or navigate to “**Options / Preferences.**”
- Click the “**LaserLynx**” tab.
 - Make sure in the “**Laser**” drop-down menu, “**Sokkia SET5x**” is the model being used and “**Measure**” is set to “**Triangular.**”
 - Click the “**Serial:**” drop-down and select the “**COM#**” of the USB-Serial adapter used for communication between the FieldLynx program and the EDM. It should be Com 3.
 - Check that the other protocol parameters match the laser configuration. The Sokkia SET 5x default is “**9600**”-“**8**”-“**None**”-“**1**” and Flow Control to “**None**”.
 - Click “**OK**”.



- In the same window, click the **“General”** tab.
- In the **“Rulebook”** dropdown list click **“IAAF”**
- Check the **“Send ‘Retire’ info to database”**
- Check the **“Prompt to reorder.”** During the event you’ll click **“No”** in rounds 5 and 6 when the question is asked.
- Obviously, you’re not going to check the **“Wind”** but should check **“Names”**
- Click **“OK”**



Other tabs will be added to the instructions as we add equipment.

NOTE: IF you have changed a setting in the **“Application Settings,”** you **MUST** close and restart the FieldLynx program to initialize the EDM/LaserLynx setup.

Initial Set up of the Prismatic Reflector Target Pole. (This is used to mark the athletes attempt in the throwing area.)

- If the pole is not together, the red prismatic reflector should be at the bottom of the target pole. Set up the aiming device at the top so it and the reflector point the same way. You may have to adjust the aiming device once you see the reflector from the EDM
- Take the lens cap off red reflector at the bottom.

Marking with and Holding the Reflector Pole to Measure the Radius of the Circle/Runway and Attempts

- Put the pointed end of the pole on the mark from where you will measure the radius of the circle/runway or the athletes attempt.
- Sight along the sighting device so the reflector prism is pointed squarely at the sighting unit.
- Now stand very still while holding the pole straight up by keeping the leveling bubble in the middle of the circle. Wait until you hear the attempt being called out by the FieldLynx operator and the Throws Official with the paper copy before moving the pole from it’s mark.





EDM Sighting Unit

- Preliminary Site with triangle
- Distance Focus Adjustment
- Crosshair Focus Adjustment
- Telescopic Eyepiece
- Tilt Fine Adjustment Knob
- Tilt Lock & Release Knob
- Rotation Fine Adjustment Knob
- Rotation Lock & Release Knob

Sighting the EDM

Use the following steps when setting up the events to find the radius of the circle/runway as well as entering athletes attempts.

Using the Preliminary Site on the EDM to find the prismatic reflector pole

- Turn the “**Rotation**” and “**Tilt Lock & Release Knobs**” counter-clockwise so that the sighting unit rotates and tilts freely.
- Turn/tilt the EDM by hand till it’s generally pointed at the reflector pole. Looking through the “**Preliminary Site**” from about 4” away, aim it towards the pole. You should see a white triangle inside the “**Preliminary Site.**” Adjust the unit so the top of the triangle is on the prismatic reflector on the bottom of the target pole. **Gently** turn the “**Rotation**” and “**Tilt & Lock Release Knobs**” clockwise to lock the unit.
- This step should get it close so you can see the reflector through the “**Telescopic Eyepiece**” to start the next step.

Fine adjustments to line up and focus on the prismatic reflector

- Look through the “**Telescopic Eyepiece**” on the sighting unit and you should see the reflector pole, it will probably be blurry.
- The “**Telescopic Eyepiece**” has two adjustment rings. “**Crosshair Focus Adjustment**” and “**Distance Focus Adjustment.**”
- Turn the small “**Crosshair Focus Adjustment**” ring until you see the crosshairs clearly when looking through the eyepiece.
- Turn the larger “**Distance Focus Adjustment**” ring on the eyepiece to focus the image until it is crisp and you see the lines in the red prismatic reflector. You may have to go back to the “**Crosshair Focus Adjustment**” and adjust that. **NOTE:** If you’ve gone from a short throw to a long throw or vice versa the focus for both these will likely be out.
- Turn the “**Rotation & Tilt Fine Adjustment Knobs**” until the crosshairs are centered on the prismatic reflector. You should see pie shaped lines in the prismatic reflector when everything is focused correctly.
- You’re now ready to take a measurement, tell the FieldLynx operator.
 - For the first few times after you’ve focused on the prismatic reflector, look down the **Preliminary Site** to see where the triangle is located on the pole after you’ve done the fine adjustments. This will give you a better idea of where to set the white triangle while using the “**Preliminary Site.**”
- Once the measurement is recorded in FieldLynx, loosen the lock release knobs so you’re ready to go again for the next measurement.

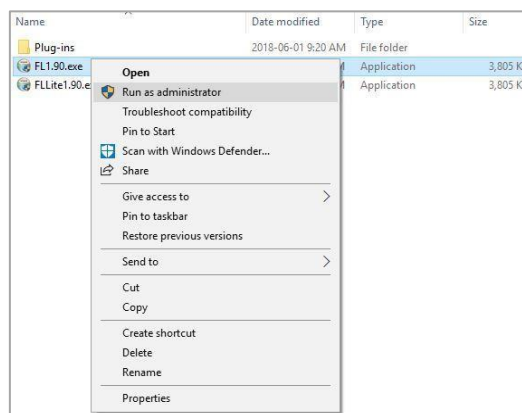
You now need to set up the FieldLynx program and EDM so they are in sync with one another.

The following part of this guide will walk you through the use of FieldLynx program followed by event specific setup for Throws.

To BCA Officials: For training and practice purposes you'll be able to install FieldLynx on your home Windows based computers/tablets. FieldLynx comes with 3 events that you can setup, check in athletes and record marks. You can even create your own events if you want. FieldLynx is installed on the Competition Device and you'll need to install the Meet Events at the various events.

Installation on your Home Device, (the program is already installed on the meet device.)

- a. FieldLynx must be installed on a "Windows" based device, usually a laptop or desktop. Most tablets and phones are android based. Apple products do not work.
- b. Click on the link below from your Windows based device to install FieldLynx. (Must be connected to the internet.)



<https://www.finishlynx.com/download/software-downloads/fieldlynx/FL1.91.exe>

- c. Right-click on the installer and click "**Run as Administrator.**"
- d. Follow the prompts to complete the install.

Double Click the "**FieldLynx**" program




icon on the device you're using.

Note: If you don't know what an Icon does, you can hold the cursor over the icon and a text box will appear with a description of what that icon does.

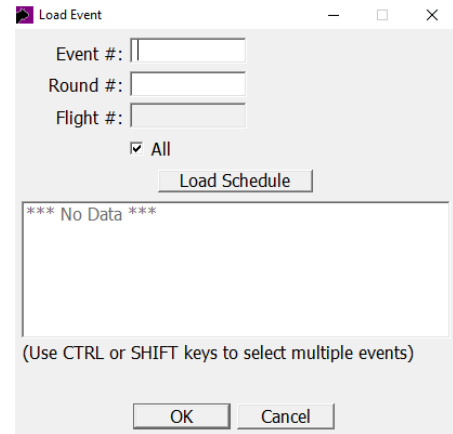
To Load Events from the Current Meet to the Main Window

Make sure you have the current meet events loaded into the EDM/FieldLynx program laptop/tablet from the Competition Secretary's computer at the start of the day. The device should already have the proper Wi-Fi connections but you may have to move the device closer in order to connect via Wi-Fi.


FieldLynx allows the user to select multiple events and flights from a competition schedule and load them into the FieldLynx program. To select and load multiple events at the same time:

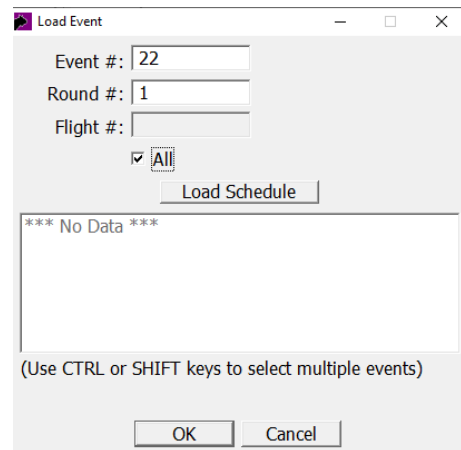
- Click the  icon or go to the “Event” menu and then “Load Event.”
- Click “Load Schedule”.
- Select an “Event” in the list.
- Now press & hold the **CTRL** key on the keyboard then click on and select additional “Events.”
- Once you have the “Events” selected, click “Ok.”

These events will load into and will show up in the “Main Window” of the FieldLynx program.




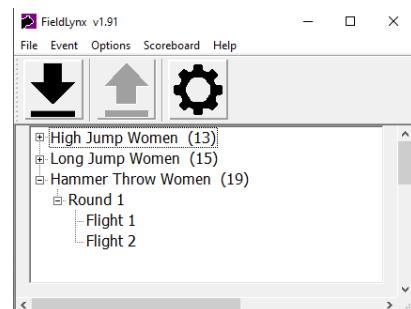
To load Events individually

- Click the  icon or go to the “Event” menu and then “Load Event.”
- When in the “Load Event” window, from your paper sheets type in “Event #”, “Round#”, and click “All”.
- Click “OK”



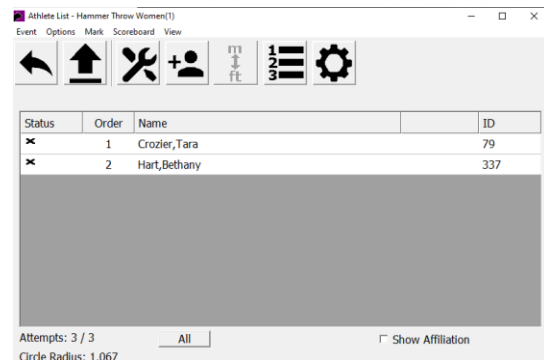
Using the FieldLynx Program

- Go to Page 4 to review the “Options” setup 
- Select the desired event by clicking the event name, round and flight from the Main Window. A new window will open with the Athlete List.



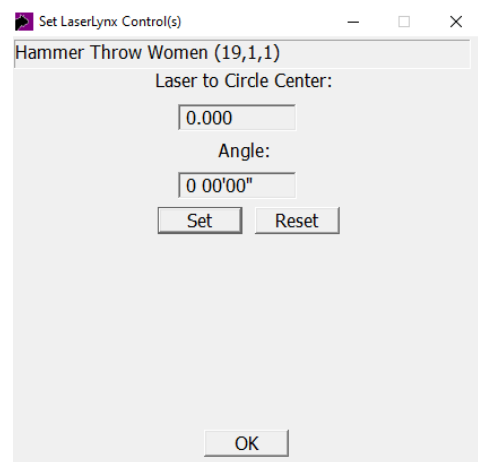
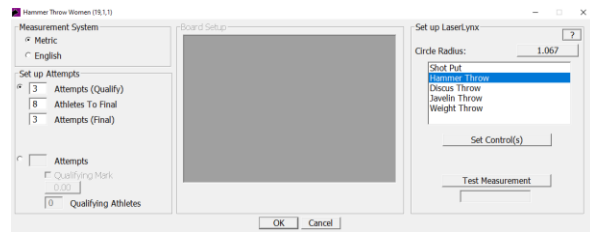
Now click the “Event Setup” icon .

Note: The “Event Setup” for attempts will have to be done for each new event throughout the day. If you’re on the same event, the EDM should be fine by checking the Laser to Circle and Angle numbers. See below.



Event Setup

- Click “**Metric**” under the “**Measurement System.**”
- “**Set Up Attempts**” as per meet rules.
- If there are less than 8 athletes in an age group, click “**Attempts**” and put the number of attempts in the box per meet rules.
- IF you’re using the EDM, select the type of event you’re setting up and confirm the “**Circle Radius**” is correct. (Hammer/Shot Put Radius = 1.0675. Discus Radius = 1.25)
- Click the **Set Control(s)** button.
- Have somebody hold the reflector pole on the radius mark in the circle. Site and focus the EDM on the reflector pole
- Click **Set**. The EDM will start clicking.
- Wait for the “**Laser to Circle Center:**” and “**Angle**” to be calculated.
- Numbers other than “**0.00**” should show in both “**Laser to Circle Center**” and “**Angle.**” You should write down these numbers and they should be the same when you setup other events from that circle during the day. Click **Ok**.

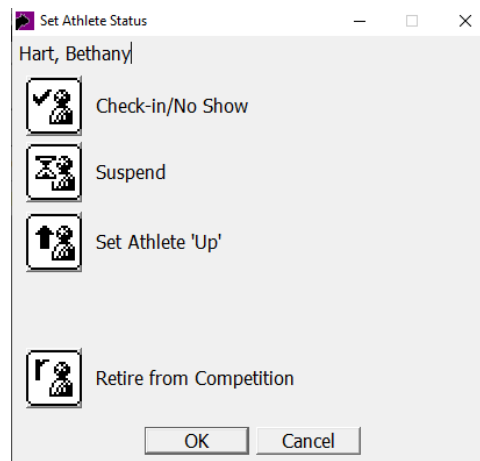
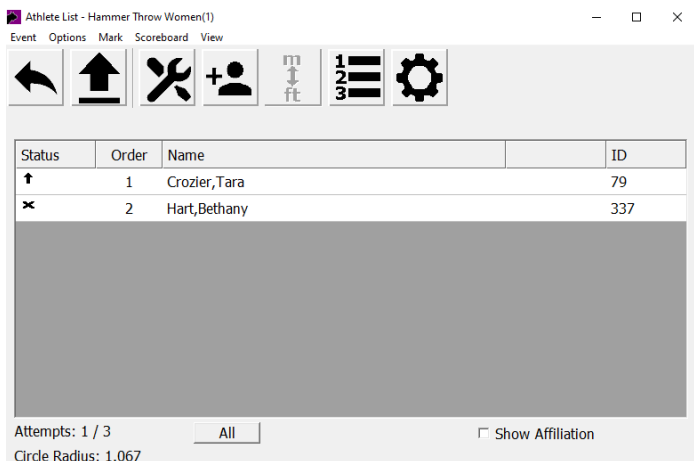


Record a Test Measurement

- With the “**Event Setup**” page still open, ask the marker to move the target pole to a position in the middle of the landing sector.
- Site and focus on the reflector pole.
- Click the “**Test Measurement**” button. The distance will come up in the box under the button. (This process can be used if you don’t have athletes registered in the FieldLynx program. The EDM becomes a glorified tape.)
- Validate that the calculated distance matches the distance measured with a steel tape. Click **Ok**.
- IF the EDM and tape don’t agree, first make sure you have the right event and radius of the circle. Or you may have to move the radius mark in the circle back or forward the desired amount and then measure again until the EDM is the same as the steel tape. Or you can change the radius of the circle by clicking “**Circle Radius.**”

Check-in Competitors

Check competitors in by tapping the  icon next to the athlete’s name. Set the athlete to **Check-in, Suspend, or Set Athlete ‘Up.’**



- ↑ Athlete is **Up**
- ↑↑ Athlete is **Next**
- ↑↑↑ Athlete is **Waiting**

Once the athletes are checked in you will see the following indicators to the left of athlete’s name when you go back to the athlete list. These icons will automatically change as you progress through the competition

Additional Functions

Retired from Competition Status: The *Retired from competition* status is now supported when the IAAF, NCAA or USATF rulebook is selected.


To set the status of an athlete to **“Retired from competition (r)”**:

- Go to the **“Athlete List”** for the event's flight.
- Tap on the **“Status”** column for the athlete to be retired.
- Tap the **“Retire from Competition”** icon.


Check-In Entire Flight: The option to check-in the entire flight, (if you know they are all there,) is also available from the menu bar of the Athlete List, in addition to the main screen.

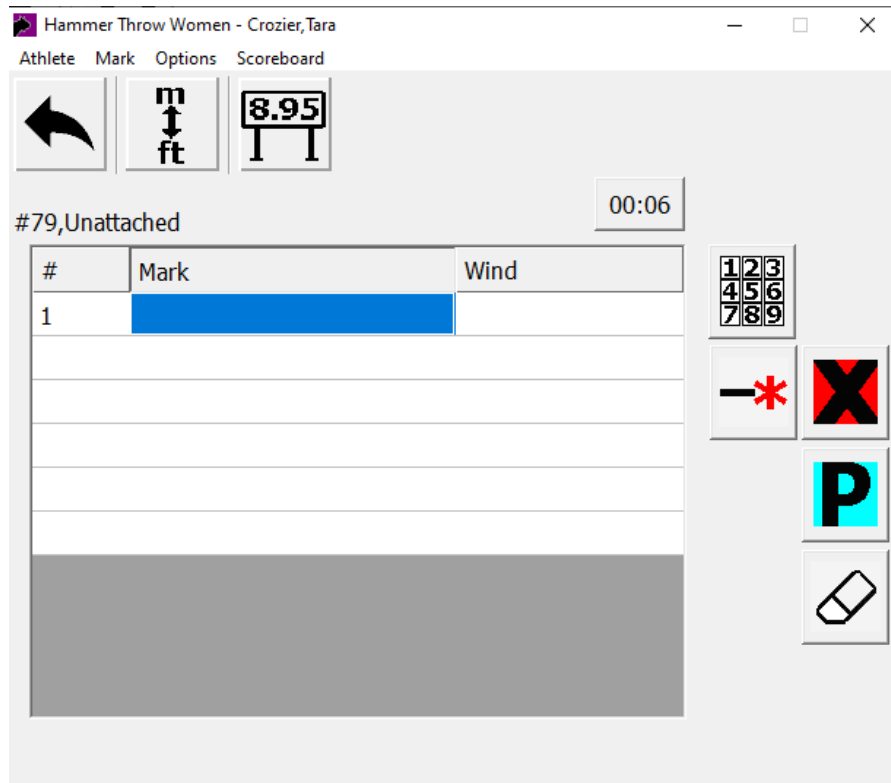
To check-in an entire flight from the Athlete List:



- Expand the *Event, Round and Flight* from the main screen.
- Go to **“Options” / “Check-In Entire Flight”**
- Click **All** (button).

Add a Competitor (Optional): Click  then add **ALL** the athlete information, bib #, correct spelling of names and club. (Make sure the Competition Secretary is aware an athlete has been added.)





Entering Athlete Marks

- Tap on the competitor who is up next . The blue mark entry screen appears and the timer starts so don't click on the name until they're called.



- To record the competitor's mark using the EDM click the  icon after the EDM operator has indicated the EDM is focused correctly on the reflector pole. Call out the attempt so the official with the paper can record it, click the  icon to return to the athlete list and call the next athlete.

Other useful icons in this window.

	Foul		Pass
	Send mark or standings to the scoreboard, (once we get one!)		Display the current standings from the "Athlete List" window.

Once results are complete click **Event / Send Results**: You may have to take the laptop closer to the Competition Secretary's computer to get in range of the Wi-Fi