



# The Equipment and Facilities Specifications Newsletter

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of the National Officials Committee in its 29th year of publication

## WELCOME TO NEW SUBSCRIBERS

This Newsletter is a semi-annual educational tool for Implement Inspectors, Technical Managers, interested Throws Officials, and certification chairs. Input and suggestions are always welcome. This copy is being sent to about **900** officials around the world. We welcome our new subscribers with this issue:

Last Name	First Name	Association
Burns	Charles	Arkansas
Elke	Wayne	Canada
Pahl	Derek	Gill Athletics
Phelps	Scott	Gill Athletics
Sutterfield	Jerry	Southwestern
Sutton	Richard	Hawaii

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## CHAIRMAN'S CORNER

When I took over the chairmanship from George Kleeman, I did so with the understanding that Ivars Ikstrums would help with the newsletter. That was 10 years ago. Since that time Ivars has put out two newsletters each year with great new content. He has done this while working full time. That work is now taking more of his time. As a result, he will be needing some help in writing articles for the newsletter. At the recent annual meeting in Columbus, I asked for volunteers to help write. Cindy Slayton and Robert Kern volunteered. That was great and I thank them for helping out. We could still use more folks helping with writing articles.

Those writing articles will be somewhat free in choosing a subject and Ivars will help with ideas as needed. He will continue to edit the newsletter and distribute it. In general, the Fall issue concerns itself with indoor track

problems while the Spring issue looks more closely at outdoor concerns. The Fall issue details the rules changes to be considered and the Spring issue goes over the rules that were changed. Between Ivars and I, that will be done.

If you would be willing to help write articles, please let either Ivars or myself know.

## RULE CHANGES AFFECTING EQUIPMENT OR FACILITIES

The following **USATF** rules change proposals, as regards equipment & facilities specifications, were dispositioned during the annual meeting in Columbus, OH:

**Item 8, Rule 164.4,** Finish lines for events finishing outside the stadium: Changes the finish line width wording from "may be up to 30 cm in width" to "shall be 5 cm to 30 cm in width" for IAAF conformity. The same change applies to companion Rule 244.1 (Item 27) and Rule 256.2 (Item 28). This change was **approved** with an amendment that the line must be of a solid color.

**Item 19, Rule 189.3:** Changes the maximum allowable diameter of the 1 kg discus from 182 mm to 202 mm to match the max diameter dimension of the 1.5 kg discus. This rules change was **withdrawn**.

**Item 20, Rule 195.7(b):** Adds clarifying words about how the throwing weight's handle is attached to the head. [WMA conformance] **Approved**

**Item 21, Rule 195.9:** The indoor throwing weights are allowed a maximum head size that is 15 mm larger in diameter than the corresponding outdoor weights, but this rules change rescinds that oversize allowance for the 4 kg indoor weight. **Approved**

**Chair: Bob Springer**  
10063 Arrowsmith Ave. S.  
Seattle, WA 98178  
e-mail: bobspringer2@comcast.net

**Editor: Ivars Ikstrums**  
822 – 217<sup>th</sup> Place NE  
Sammamish, WA 98074  
e-mail: TF\_ikstrums@comcast.net

**Item 22:** Adds new Rule 195.10 which (1) allows the use of the outdoor weight for indoor or outdoor competition, depending on the throwing surface, (2) allows the use of the indoor weight for indoor competition

only, and (3) disallows the use of both types of weights in the same competition. [WMA compliance] **Rejected**

**Item 36, Rule 264.1:** Adds the specific requirement that throwing implements used for Masters records must comply with *WMA specifications*. **Tabled**

**Item 37, Rule 301:** Adds the 750 g discus to Youth competition for use by the Boys and Girls 9-10 year age division. **Rejected**

**Item 41, Rule 302:** Expands the definition of hurdle layout for Youth indoor competition, and adds a new rule specifying the shuttle hurdle exchange zone. **Approved** with an amendment to the interval for 13-14 Girls.

**Item 78:** All Masters championships will use throwing implement specifications that comply with WMA rules. **Tabled**

**Item 91, Rule 332.3(f):** The loss-of-identity rule for Masters implements is clarified. [WMA conformance] **Withdrawn**

**Item 93, Rule 332.3(g):** (1) The callout for the WMA throwing implement table is changed from “specifications” to “weights” to match the actual content of the table.

(2) New rule 332.3(h) is added that states, “WMA specifications are in the individual implement specification tables,” and identifies the specific paragraph numbers.

**Tabled**

**Item 94, Rule 332.3 (h):** The definition of, and use of, Masters take-off boards and take-off lines is expanded. [WMA conformance] **Approved** with amendments to nomenclature and board positioning.

**Editorial changes:** The minimum thickness of the 1 kg discus is changed back to 37 mm. **Approved**

The pdf version of the 2019 USATF rule book is available at: <http://www.usatf.org/About/Competition-Rules.aspx>

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NFHS rules changes for 2019 high school T&F can be found at:

<https://www.nfhs.org/sports-resource-content/track-field-and-cross-country-rules-changes-2019/>

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The NCAA 2019-2020 rules changes are detailed at:

[http://www.ncaa.org/sites/default/files/2019-20MWTF\\_Rules\\_Changes\\_2019\\_and\\_2020\\_FINAL\\_2018\\_0816.pdf](http://www.ncaa.org/sites/default/files/2019-20MWTF_Rules_Changes_2019_and_2020_FINAL_2018_0816.pdf)

The NCAA 2019-2020 rule book can be purchased and/or downloaded at:

<http://www.ncaapublications.com/p-4564-2019-2020-cross-country-and-track-and-field-rules.aspx>

### EQUIPMENT CORNER

If you have any information on equipment that you have purchased or built to help with your weight and measures or technical managers' activities, please pass along the information. One of our goals is to disseminate this type of information.

#### LaserLynx

A few issues ago we ran an article about using the Leica DISTO for field event measurements. This generated comments from readers and it is hoped that the discourse was useful for making a decision whether to buy such a system or not.

The subject of this article is the LaserLynx system which is offered by Lynx, who is well-known for its FinishLynx system. Low-cost laser total stations are becoming more available and Lynx has taken advantage of that to package such a station with its FieldLynx software.



About a year ago the Pacific Northwest Officials bought several such systems for throws and horizontal jumps coverage. The purpose of this article is to describe some of our learnings with the LaserLynx head. This is not an article about the FieldLynx software, which is a subject on to itself. This is intended to describe some of

the problems we had in operating the system. Also, some material is covered here that was not contained in the user manual.

The terms total station, head, and laser unit are used interchangeably in this article. They all refer to the laser distance measuring unit that sit on the tripod.

The first thing that should be understood is that there are several makes/models of laser total stations on the market today. It appears that some of them are identical, but sold under different makes and models. The equipment that we bought from Lynx goes under the "South" name, model NTS-362R4 (that is what's written on the head itself; the firmware reports model NTS360R4L). If you happen across a different make/model but it appears to have the same form factor and functionality, it may in fact be made by the same parent company but sold under a different name.

The unit is primarily advertised as a surveying instrument, but that makes it suitable for dealing with the geometries of the field events.

The manufacturer claims a measurement range of 5 km using a reflector target and about 300 m range without a reflector. This is more than sufficient for field events.

Setting up and leveling this instrument could be a topic to itself; there are a number of YouTube videos that cover this subject. Viewing a couple of these videos is a good idea if you've never set up and leveled a survey tripod and head.

Once the instrument is set up, a distance mark should be placed in the field. The purpose of this is to provide a quick method of checking the accuracy and functioning of the instrument whenever needed. In outdoor track, a steel spike can be hammered in the ground at a convenient location. Indoors you might select existing markings on the ground or make your own. This location needs to be measured, using a steel tape, along the ground to the throwing circle. *A plumb bob can be used to determine the location under the tripod. [or the tripod should have a hollow screw – sighting thru the screw to the ground can be performed just before the head is attached to the tripod]*

The recent Officials Newsletter included a link to a conformity form to document the laser checks at:

<https://usatf.org/usatf/files/17/177a177d-8b42-44f6-b06f-c1b33041459d.pdf>

Measuring the distance mark should be done, at a minimum, prior to every flight, if the tripod might have been disturbed, during a record throw/jump verification, and after competition has concluded.

Install the battery according to the instructions and turn on the unit. The next thing you may want to do is turn on the display backlight for ease of reading the display.

This is done by pressing the Star button followed by the F1 button. These need to be separate button strokes – if you press and hold the Star button while pressing F1, a different function will be performed.

Now it's time to configure the head properly. But before continuing, a word of caution is in order here.

Ideally, the head will be set up once and then not touched again. But reality doesn't always work out that way. Operators, who are not familiar with the setup process, need to be instructed to not play with the head's settings. Otherwise there's no telling what will happen.

When setting up the head, check the display for the correct window, and the correct option, before each press of a button. It is very easy on this instrument to press a wrong button that will get you into a completely different function; then subsequent button presses will alter the configuration into an unusable state. If a window is unfamiliar or not what you expected, press the ESC button until you're back in familiar territory.

However, the ESC button will not always get you out of trouble. One of the many keyboard functions on the head is the setting of the display contrast. It is possible, by accident, to black out or white out the contrast. Trust us on this matter – the editor has already done that inadvertently. So how do you operate the head when you can't see anything on the display? The recovery procedure is simple:

- Press: Star button
- Press the UP arrow until the desired contrast is regained.

Do not press the down arrow in the above procedure because it will perform a different function.

Upon powering up, the following display is shown:



Press ESC to arrive at the more normal display:



Set the baud rate:

- Press: MENU
- Press: 3. Memory Mgr.
- Press: 2. Data Transfer
- Press: 1. RS232 Mode
- Press: 3. Comm. Parameters
- Press Arrow Down, select: BAUD
- Press left arrow until "4800 b/s" appears
- Press: F4 to set
- Press: ESC several times to exit.

The baud rate governs the speed at which the computer talks to the head. Faster is not always better in this case. There are other baud rates available; our experience indicates 4800 is the best overall setting. More on this later.

Set the prism constant:

- Select: Star button
- Select: F4 PARA
- Press down arrow twice: Enter -30.0 mm (or the constant for your prism)
- Press: F4 to Enter
- Press: ESC to exit

Select the Reflector [Prism]

- Press: Star button
- Press: Left arrow until Prism appears
  - Will look like this: Reflector [Prism]
- Press: ESC to exit

Set units of measure:

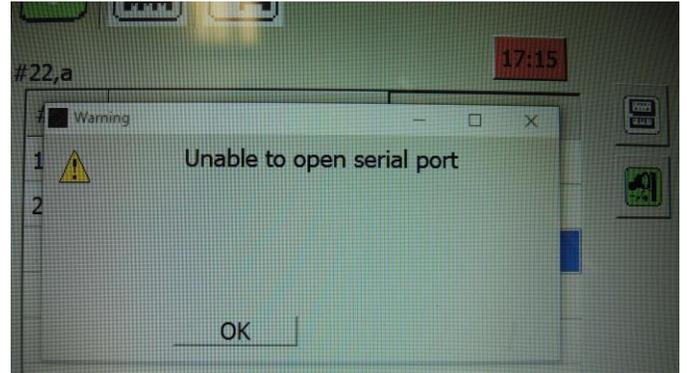
- Press: MENU
- Press5: PARAMETERS
- Press 1: UNIT SETUP
- Press 3: DISTANCE
- Press 1 for METER OR
- Press 3 for FEET-INCHES
- Press: F4 = OK
- Press: ESC to exit

To take a manual measurement:

- Press: Dist
- Press: F2 to start measurement

- Press: ESC to stop taking measurement
- When using FieldLynx software you will take the measurement within that program

One problem we continue to encounter is a comm (communications) problem between the computer and the laptop during competition resulting in the following error message:



The short-term solution is to click on OK and to measure again. However, if you get this message frequently, try changing the baud rate to see if the incidence of this error is reduced. If you know of a better solution, please let us know!

As was stated before, the field operators should not be adjusting the settings in the head itself. At most, these settings can be checked by the group's primary EDM operator at the start of the meet and then left alone.

This is intended to be an overview of the head itself. If you have experience with this system, or another, and have developed procedures or reference sheets which can be shared, please forward them to the editor. Full credit will be given.

## THE TRAINING CENTER

This is a regular feature of this newsletter, where we discuss the method of measuring an implement, venue or a track facility. Your comments or areas of interest are welcome. It is through this kind of dialogue that we learn from each other and improve our skills. Send the editor your stories and questions.

### Disqualified implements

Bob Springer

I am hoping this is the first of a regular series showing some of the disqualified implements that have been turned in since the last newsletter. This is made possible by those implement inspectors that turn in reports and include pictures. For those who have not sent me reports, what I want is a breakdown by implement with the number of implements inspected and the number disqualified.

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Giving me the reasons for the DQ helps me figure out if there is a problem with a particular implement. For those working high school meets, please keep the rubber discus separate from the steel rimmed ones. For Masters and Youth implements, I don't put the different weights into separate categories so just tell me Men's and Women's implement numbers. Do keep combined events separate from the other events. If you make repairs, do give me a count of those repaired and returned to the meet.

I will not be showing all of the implements in these columns, but will pick out some of the more egregious examples. Since this is still indoor season all these will be indoor implements.

Let us start with a weight with a bit of a problem with the strap.



This is an obvious safety problem as the strap is torn. With the weights, safety is a big concern. Here is one with a bigger safety problem.



Tape was used to cover the broken ring. This shows why we should remove all tape before checking implements. Most tape is not allowed in any event. Although there is no picture, be sure to check the bolts holding these

together. I have a report of one that was less than a turn of coming apart.

Shots had two particular problems in the pictures sent to me. There were a couple like this



with some pretty big holes (indentations?). If those go deep enough, the lead fill can leak out and cause the shot to become light. If these are thrown onto a turf field, the lead pellets are toxic and need to be removed which is a major problem given the rubber pellets used as infill.

The other problem reported was shots with a rough surface. Here is one example:



This one would be a real problem trying to make it smooth. Some schools without indoor facilities throw the indoor shot outdoors onto cinders. That really makes a problem for the surface. Gouges are also a problem as seen here:



The following rubber ball is filled with lead shot but its shell is extremely soft and pliable. Its diameter also exceeds the indoor maximum for a 12 lb shot of 132.5 mm. This is an exercise ball, not a competition shot:



*(all above implement pictures were submitted by Gunny Roll, except last one by I. Ikstrums)*

This column is dependent on officials sending me pictures of problem implements so do send them in.

**Baton inspection**

For those of you who are full-time or part-time implement inspectors, when is the last time that someone brought you the meet's batons for inspection? Particularly for a championship meet?

The following picture of a baton was provided by Dave Soeth from a HS 4x100 relay race last year:



The embellishments are stickers, some of which are peeling. At this point it would be good to review USATF Rule 170.4. Regarding construction, the rule says, "The relay baton shall be a smooth hollow circular tube made of wood, metal or other rigid material in one piece." In this case, the operative word is "smooth," and the pictured stickers violate that requirement. Engraving on the baton is also not allowed for the same reason.

The rule goes on to provide the physical requirements:

- 28 to 30 cm in length
- 4 cm ± 2 mm in diameter
- weight not less than 50 grams.

Most calipers and a decent scale can be used to certify batons to the above requirements.

**DOCUMENT LINKS**

The **Implement Inspector's Handbook** is available at: <http://www.usatf.org/Resources-for---/-groups-officials-/Officiating-Resources/Implement-Inspection.aspx>

**Previous EFSS newsletters** are located at: <http://pacificnorthwest.usatf.org/Officials/Resources.aspx>