**October 2020 – Laws Committee Guidance on the Use of Laser Measures**

New measuring devices appear on the marketplace on a regular basis. Several models of laser measures have recently been introduced for use in lawn bowls. These devices have been designed by incorporating third-party laser measuring devices into a patented assembly, with components, which adapts them for use on a bowling green to measure for shot bowls.

World Bowls is working continuously to assist and encourage the development of the sport, and this includes the adoption of technological innovations that will assist players and officials. The World Bowls Laws Committee does not need to give permission for new measuring devices (each MNA has this authority), but the LC will comment if they do not comply with the Laws of the Sport.

The LC recently evaluated some of the new laser measures and has determined that it is appropriate to issue some guidance to MNAs and bowlers on their use. This guidance is intended to inform bowlers and bowls administrators of some considerations that should be given when assessing laser measures for domestic use, and to describe some limitations on their use, without commenting on any specific model.

**Background**

The LC initially evaluated the prototype for a new laser measure in 2015. At the completion of this review process, the LC approved the measure for domestic use. This assisted the manufacturer with refining the design and commencing production of the measure, and it enabled MNAs to consider adoption of the laser measure for domestic use. Approval of this device was based on three principles:

1. The bowls laser measure worked on the concept of measuring the horizontal distance between two vertical planes, achieved by the design of the mount of the laser and incorporation of a vertical reflective target plate placed against the object being measured. The LC accepted this procedure as a proxy for measuring the sloping line between the nearest points of the jack and a bowl, as the intent of measuring is to determine the relative difference in distances between two or more bowls and the jack, rather than the absolute measurements.

2. The measuring process was consistent and easily replicable.

3. The third-party laser measure was manufactured by a reputable company in the field of optics and was deemed to provide a suitable level of measuring accuracy.

The World Bowls Umpire Development document was not updated to include the laser measure at that time.

**Recommended Guidance**

The laser measure may be used as an alternative to the box measure, subject to any restrictions adopted by any MNA, and it is now listed in the “alternative equipment” section in the Umpire Development documentation on the Word Bowls website. Due to a variation in tolerances among laser measure models and as they do not measure directly between the nearest points of the jack and a bowl, there is a recommended minimum distance for their use. The recommended minimum distance for using a laser measure in an ideal situation is 300 mm.

[Note: The LC has amended the recommended minimum distance for using a box measure to be 200 mm, as callipers (or feeler gauges) are ideal for measurements less than 200 mm.]

The maximum distance for using a laser measure can vary, depending on the ambient lighting conditions, the measuring range of the laser beam, and the reflectivity of the target. The LC does not have any recommendations regarding maximum distance.

There are now several models of available laser measures for bowlers. Each model has a unique design and instructions on their use. The Umpire Development document has been updated to include generic instructions on how to use a laser measure; however, bowlers should use each laser measure in accordance with the manufacturer’s instructions to obtain optimal results. This also includes all health and safety guidelines pertaining to the use of lasers.

All other types of approved bowls measures are used to determine the relative differences in the distance between the jack and various bowls. The laser measure is unique, in that it provides a digital reading of the actual distance between two objects, and the user must perform a mathematical calculation to determine the difference between any two readings. For this reason, it is not necessary to return to the original bowl to recheck the distance. As a result, the user may be expecting to achieve a greater degree of accuracy when using a laser measure; however, there are some limitations which must also be taken into account.

Laser measures should be used with a degree of caution. All laser models display metric units to three decimal places (i.e. 1 mm), but their technical specifications indicate various levels of typical measuring accuracy, ranging between +/-1 mm and +/-3 mm. The LC recommends that MNAs adopt some protocols in response to measurements that fall within these ranges, such as:

a) to recheck the measures to the closest bowls to confirm the result;

b) to alter the method of measuring or choose an alternate measuring device.

Another limitation of any laser measure is that it can only be used when the jack and all bowls are on the green, and nothing is in the ditch. The laws state that any measurement involving the jack or a bowl in the ditch must be carried out using a flexible or string measure whenever possible.