Ammunition and Energy Testing Procedure on Seddon Range

8 November 2017

NRANZ Council has decided to raise ammunition testing and Muzzle Energy testing to a more visible level in NRANZ and Club competitions on Seddon Range. This has been instituted so that range personnel and competitors can be up brought up to speed for the Long Range World Championships in 2019. ICFRA requests that testing of ammunition ensuring conformity to shooting rules and range criteria is available during the LRWC. Also, NRANZ Shooting Rules require such testing.

Seddon Range has a maximum Muzzle Energy (ME) level of 4500 joules and a maximum muzzle velocity of 1000 metres/second. A table is provided below listing the maximum muzzle velocities for projectiles to reach the allowable ME.

Muzzle Energy (ME)

NRANZ expects all competitors to be aware of their ammunition ME.

TR NRANZ Rules
T2.21. Ammunition may not be used which is forbidden under specific rules provided for in Range Regulations…..(This includes ME for Seddon Range)

F/O – F/TR ICFRA Rules
F2.20. Ammunition….must meet in all respects the limitations of any range regulations (e.g. calibre, velocity, muzzle energy etc)…. (This includes ME for Seddon Range)

In order to check for conformity, the NRANZ has acquired a LabRadar Chronograph to measure muzzle velocity. There is no need to attach anything to a rifle nor set up a chronograph on another part of the range. Testing has indicated that it can be placed approximately shoulder level and out of the vision of a competitor to record shots. The Chronograph is then armed to record and will display the velocity as each shot is fired. The testing is open and transparent and anyone can see the results while it is in operation.

In the event of the operator of the LabRadar recording a muzzle velocity indicating higher than the maximum allowed for the projectile in use, the CRO will be informed and the CRO may consider testing the competitors ammunition as oulined below.

Discretion will be excercised by the CRO in a competitor's first instance of their exceeding ME. In their first instance there will be no penalty. The competitor will be given the opportunity to acquire complying ammunition to complete their shoot within the remaining time available with no additional sighters. They shall use complying

ammunition for the rest of all remaining competitions under penalty of disqualification.

NRANZ Shooting Rule T19 outlines reasons for Disqualification that includes:

T19.5.11. Using ammunition outside the ICFRA specification.

LabRadar: http://www.mylabradar.com/

As a rule of thumb, competitors should ensure only 1 in 20 shots should exceed the maximum muzzle Velocity to ensure conformity. The mean velocity plus twice the standard deviation (SD) should not exceed the max velocity from the table. Use the mean and SD function of a chronograph or calculate the mean and SD. Eg. If the SD is 10 fps, 2 SD = 20 fps, the mean should be less than 2986 fps if 155 gn projectiles are used (Max 3106 fps). A sample size of at least 10 shots when calculating the mean and SD is recommeded.

Ammunition

NRANZ Shooting Rule:

T8.13. The RO or another range official who has been delegated by the CRO is authorised to check that the ammunition used by a competitor is within the specification for the match. One round from those that the competitor is about to fire may be taken for subsequent examination. The competitor should not be disturbed once he has commenced firing. The host country is to provide a person with suitable expertise to ensure that checks are done to collected ammunition in the shortest possible time. After dismantling the round for checking, the unfired cartridge case and bullet must be returned to the competitor.

An area has been set aside with a suitable press and balance and will be used to test the ammunition during the 2017 Nationals.

The projectile and case shall conform to ICFRA specifications under penalty of disqualification.

Rifle Weight

NRANZ now has a balance and a set of test weights with which to measure rifle weight. This may be available prior to the commencement of Nationals or at an advertised time and place. See the Wailing Wall for times and place. Random checks during champioships may be carried out on the request of the CRO.

Rule F2: F/O: 10 kg F/TR: 8.25 kg

See Rule F19.4 for “Disallowance of scores” which includes:
F19.4.4 Use of a rifle that does not comply with the requirements set out in these rules.

It will be assumed that all competitors have read NRANZ Shooting Rules and ICFRA Shooting Rules.

NRANZ Rules Here:
http://nranz.org.nz/assets/Documents/shooting-rules-4-2010-Edition.pdf

ICFRA TR Rules Here:
http://www.icfra.co.uk/TR_Technical_rules_2016.pdf

ICFRA F Class Rules Here:
http://www.icfra.co.uk/FC_Rules_2014%20Final.pdf

Maximum Muzzle Velocity for Projectile weights.

Projectile Weight (gn)	Max Velocity m/s	Max Velocity f/s	Muzzle Energy Joules	Muzzle Energy Ft/lb
80	998	3274	2581	1903
90	998	3274	2903	2141
105	998	3274	3387	2498
130	998	3274	4193	3092
140	996	3268	4500	3318
150	962	3156	4500	3318
155	946	3104	4500	3318
155.5	945	3100	4500	3318
160	931	3054	4500	3318
170	904	2966	4500	3318
180	878	2881	4500	3318
185	866	2841	4500	3318
190	855	2805	4500	3318
200	833	2733	4500	3318
210	813	2668	4500	3318
215	804	2637	4500	3318
220	794	2606	4500	3318
230	777	2549	4500	3318
240	760	2495	4500	3318

Thank you
NRANZ Council