



## PISTOL AUSTRALIA INC. RECOMMENDED VELOCITY TESTING PROCEDURES

### RECOMMENDED AMMUNITION TESTING PROCEDURES USING LABRADAR

The method for testing ammunition for the PA matches and for the Rapid Fire match at the PA/ISSF National Championships will be as follows.

#### Setting up the Labrador

At National Championships the NRC will provide the Labrador. If available a second unit may be held in reserve in case of a failure or other unforeseen event that renders the NRC system unusable.

Preferred power source is the USB power bank supplied with the PA Labrador. The power bank must be recharged every night. Alternative power sources are either 6xAA batteries or 240v mains power.

The unit will be set up in a dedicated area and must be sheltered from rain. It is not affected by light conditions but may be affected by other shooting nearby. The system must be aligned with the target and a firing point marked to show competitors where to stand/sit when firing the gun.

The unit will be set for velocity testing only, with power factor calculated using the conversion chart provided.

Labradar Settings – start with these but if necessary change settings to ensure a valid read each time. **Items in bold must not be changed.**

Setting	Action	Service	ISSF
Velocity Units	<b>fps</b>	<b>fps</b>	<b>m/s</b>
Distance Units	<b>yd</b>	<b>yd</b>	<b>m</b>
Select vel. Range	<b>Handgun</b>	<b>Handgun</b>	<b>Handgun</b>
Set proj. offset	12 ins	12 ins	30 cms
Set distances**	Dx1 = 10 (default)	Dx1 = 10 (default)	Dx1 = 10 (default)
Trigger Source	<b>Trigger</b>	<b>Trigger</b>	<b>Trigger</b>
Trigger Level	1	1	1
TX Power	Low	Low	Low

\*\* Distance related to the bullet passing through the radar beam. Reduce this if necessary – Dx2 to Dx5 can be left on the defaults.

#### The Control Test

The following method of checking the consistency of readings will be used at national championships

1. The Organizing Committee must provide one semi-automatic .22LR pistol (i.e. a standard pistol) and one box of 50 rounds of good quality .22 ammunition. These items must be kept available throughout the competition in case retesting is required.
2. Prior to the start of competition each day (i.e. on days when ammunition testing will be required) the Jury will supervise the following procedure
  - a. Under Jury supervision five shots will be fired with the 'test' pistol and ammunition. The highest and lowest readings will be discounted and an average of the remaining 3 readings will be used as control data.
  - b. The complete test results will be documented and retained by the RTS Office (or Jury).
  - c. This cumulative log will be retained after the competition for comparison purposes.
  - d. The CRO will put the firearm and the ammunition away securely, where it can be easily retrieved but cannot be used for other purposes throughout the competition.



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3. In the event of a failure to meet the applicable ammunition requirements the competitor may request that this test be repeated and the data compared to the control data.
4. If the reading is found to be significantly less (3% or greater) than that of the control data the competitor must not be disqualified and the Labradar must be repaired or replaced.
5. If the reading is found to be correct then the competitor will be disqualified.

### **Availability for training**

The system MUST be available for competitors to test their ammunition during the training days. (Service Pistol rule 6.2 – Note 15, ISSF Annex B Item 7).

### **Ammunition Testing Procedure – ALL MATCHES**

1. Ammunition collected must be a random sample.
2. In the case of a disqualification the competitor or the jury member in charge may request that a control test be carried out.
3. Unused ammunition should be returned to the competitors once testing is complete.

### **Ammunition Testing Procedure for the PA matches**

1. Collect 10 (ten) rounds from all competitors.
2. Pull and weigh one projectile from a cartridge.
3. Load 3 cartridges into the firearm and align the barrel horizontally to be able to fire alongside the unit.
4. Fire a round and check if power factor (PF) has been achieved. If PF is achieved unload the firearm and return the ammunition and components to the competitor.
5. If PF is not achieved repeat the process per item 4 above
6. If PF is still not achieved provide competitor with option to either
  - a have the next round fired (per item 4) – if PF is not achieved the competitor will be disqualified.

**OR**

  - b have the remaining projectile pulled and weighed to ascertain if it is heavier than the previously pulled projectile.
    - i If projectile is heavier, multiply by the velocity of each of the 2 chronographed rounds to ascertain if the required PF has been achieved.
    - ii If projectile is lighter then PF has not been achieved and the competitor will be disqualified.

### **Ammunition Testing Procedure for ISSF Rapid Fire**

1. Collect 10 (ten) rounds from all competitors - only one competitor per relay will be selected for testing
2. Pull and weigh one projectile from a cartridge. (Do not use a kinetic puller for rim-fire rounds).
3. If the weight of the projectile is less than 39 grains (2.53gms) two additional bullets must be pulled and weighed. If the average weight of the three bullets is less than 39 grains (2.53gms) the competitor must be disqualified.
4. Load 3 cartridges into the pistol, align the barrel horizontally to be able to fire alongside the unit and fire three rounds.
5. If the average velocity for the three shots is less than 250.00 m/sec the procedure per item 4 must be repeated. If the average velocity for the six shots is less than 250.0 m/sec the competitor must be disqualified.