

Pellet testing session 2

Further Bench testing of Steyr Sportwaffen LP1 Air Pistol

Following on from our first foray into more serious bench testing, we decided that having evaluated the grouping possibilities of different type and weights of pellets, that on this occasion we would try to determine the relevant group size and position on the target when slight variations were made to the average muzzle velocity.

As with the previous test sessions, a Combro CB625 chronoscope was fitted to the muzzle of the LP1 and carefully aligned to prevent erroneous readings. The air cylinder for the pistol was pre-charged to 200 bar before the first tests were carried out. As only a total of approximately 80 shots were fired, there is no reason to doubt the consistency of the air supply to the pistol.

The now proven and trusted pistol bench test rig was set up at 10 metres from the target and a few test elevation shots fired. It soon became apparent that with a small amount of adjustment, it would be practical to locate the resultant shot holes near to the centre of the target. Whilst not affecting the outcome of the tests, this would provide the added bonus of displaying the shot group position relevant to the '10' ring.

After a few more stabilisation shots to ensure that the pre-charged air cylinder was temperature stabilised at the ambient temperature of 15°C and relative humidity of 55% the test were started.

The pellets used were H & N Finale Match Pistol 4.49mm which have been proven consistent and reliable since the Air Arms pellets used previously became unavailable.

A series of 10 shots were fired, the average muzzle velocity calculated and the resultant shot pattern card annotated. The muzzle velocity was then adjusted and some stabilisation shots fired before commencing the next test series of 10 shots. This procedure was followed for each subsequent change in muzzle velocity.

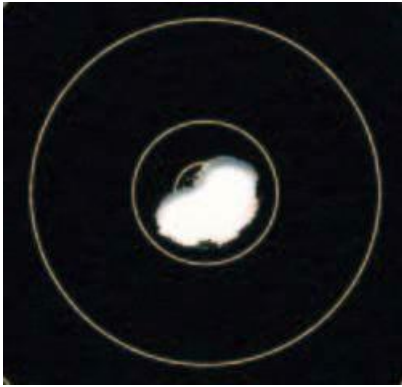
Having started at the current average operation velocity of 524FPS, the velocity was first turned up, eventually stopping at an average of 531FPS as it was felt that the group image was starting to spread. The average velocity was then turned down eventually to 519FPS, before returning back to the obvious best value of 524FPS.

As can be seen from the resultant groups, there is very little to choose between them as they are all within the '10' ring. The other observation was that despite the changes in the average muzzle velocity, there was only a slight variation in the vertical position of the shots and group on the target.

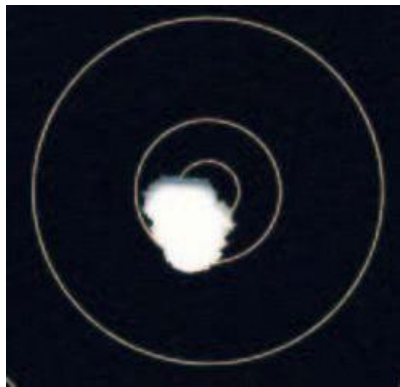
In order to clarify the results and give a representative indication of the details that have been obtained, it should be noted that the diameter of the 10 ring is 11.5mm and the diameter of the 10X or carton ring is 5mm, whilst the pellet has a nominal size of "4.5mm".

The conclusions drawn from these tests are that the previously found most consistent average muzzle velocity of 524/525FPS also produces the best relevant group on the target.

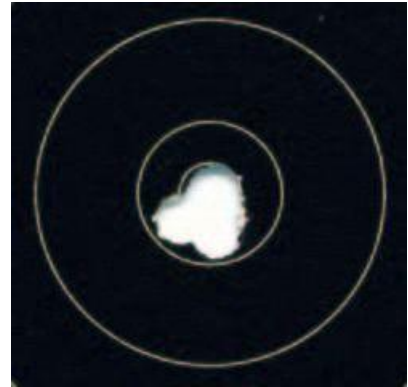
Having gained this information and the reassurance that this combination of grade of pellet and average muzzle velocity produced the best results from the bench test, it is now down to the small matter of correct application of this new found confidence along with improved trigger technique to see if similar results can eventually be obtained on competition cards. That could well be a future subject all of its own.



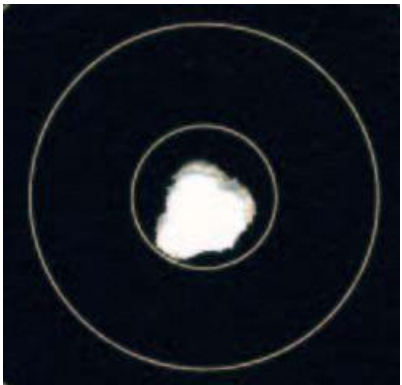
10 shots average of 519 FPS.



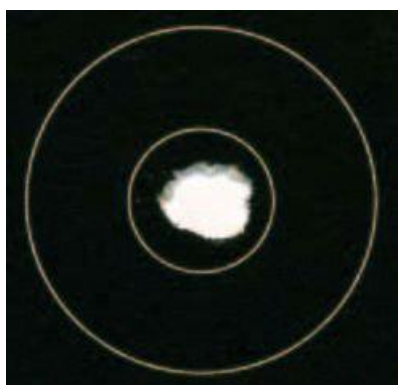
10 shots average of 520 FPS.



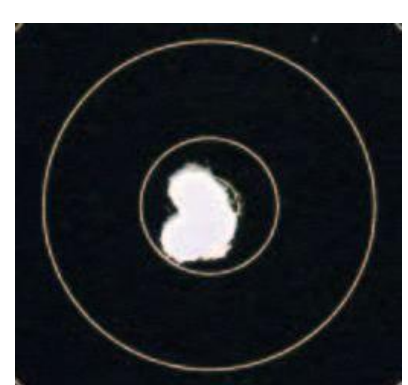
10 shots average of 521 FPS.



10 shots average of 522 FPS.



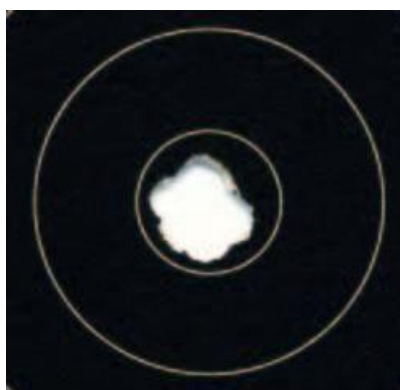
10 shots average of 524 FPS.



10 shots average of 527 FPS.



10 shots average of 530 FPS.



10 shots average of 531 FPS.

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