

Vdr III

Ronald Simmons
 Chief of Deputy Weapons Evaluation
 Branch of the Ballistics Research Laboratory
 & the Army -
 Evaluates weapons for 13 years. (441-447)
 - Expert on rifle accuracy & killing power (442)
 Bench-firing Refresher (448) - all of the shooters
 skilled ~~shooter~~ in normal match competition
 had ~~been~~ by NRA they were all masters (449-450)

Slightly qualified reference
 a master by NRA 1449

58225
 40

 65

Answers # 27

Ver III

Mr. SIMMONS. We wanted to determine what the aiming error itself was associated with the rifle.

Mr. EISENBERG. Can you give us the times in which the various riflemen used to fire the three shots in each sequence?

Mr. SIMMONS Yes. And the numbers which I will give you will be the average of two readings on stop watches.

Mr. EISENBERG. For each rifleman?

Mr. SIMMONS. For each exercise.

Mr. Hendrix fired twice. The time for the first exercise was 8.25 seconds; the time for the second exercise was 7.0 seconds.

Mr. Staley, on the first exercise, fired in 6 3/4 seconds; the second attempt he used 6.45 seconds.

Specialist Miller used 4.6 seconds on his first attempt, 5.15 seconds in his second attempt, and 4.45 seconds in his exercise using the iron sight.

Mr. EISENBERG. What was the accuracy of Specialist Miller?

Mr. SIMMONS. I do not have his accuracy separated from the group.

Mr. EISENBERG. Is it possible to separate the accuracy out?

Mr. SIMMONS. Yes; it is, by an additional calculation.

Mr. Miller succeeded in hitting the third target on both attempts with the telescope. He missed the second target on both attempts with the telescope,

Miller
#27

but he hit the second target with the iron sight. And he emplaced all three rounds on the target, the first target.

Mr. EISENBERG. How did he do with the iron sight on the third target?

Mr. SIMMONS. On the third target he missed the boards completely. And we have not checked this out. It appears that for the firing posture which Mr. Miller--Specialist Miller uses, the iron sight is not zeroed for him, since his impacts on the first and second targets were quite high, and against the third target we would assume that the projectile went over the top of the target, which extended only a few inches over the top of the silhouette.

Mr. EISENBERG. What position did the rifleman fire from, Mr. Simmons?

Mr. SIMMONS. The firers braced an elbow on the window sill and used pretty much a standard sitting position, using a stool.

Mr. EISENBERG. How much practice had they had with the weapon, Exhibit 139, before they began firing?

Mr. SIMMONS. They had each attempted the exercise without the use of ammunition, and had worked the bolt as they tried the exercise. They had not pulled the trigger during the exercise, however, because we were a little concerned about breaking the firing pin.

Mr. EISENBERG. Could you give us an estimate of how much time they used in this dry-run practice, each?

Mr. SIMMONS. They used no more than 2 or 3 minutes each.

Mr. EISENBERG. Did they make any comments concerning the weapon?

Mr. SIMMONS. Yes; there were several comments made particularly with respect to the amount of effort required to open the bolt. As a matter of fact, Mr. Staley had, difficulty in opening the bolt in his first firing exercise. He thought it was completely up and it was not, and he had to retrace his steps as he attempted to open the bolt after the first round.

There was also comment made about the trigger pull which is different as far as these firers are concerned. It is in effect a two-stage operation where the first--in the first stage the trigger is relatively free, and it suddenly required a greater pull to actually fire the weapon.

Mr. EISENBERG. Mr. Simmons, did you prepare a table showing the probability of hit at a

given target at given ranges by riflemen with given degrees of accuracy?

Mr. SIMMONS. Well, we prepared a table which showed what the probability of a hit would be on specific sizes of target as a function of aiming error, and using the appropriate round-to-round dispersion also in these calculations.

Mr. EISENBERG. What were the targets that you used in your calculations?

Mr. SIMMONS. We used two circular targets, one of 4 inches in radius and one of 9 inches in radius, to approximate the area of the head and the area of the shoulders, or the thorax, actually. And a significant point to these calculations to us is that against the larger target, if you fire with the 0.7 mil aiming error which was observed against the first target, the probability of hitting that target is 1, and it is 1 at all three ranges, out to 270 feet.

Mr. EISENBERG. Can you explain the meaning of the probability being 1?

Mr. SIMMONS. Well, the probability is effectively one. Actually the number is 0.99 and several more digits afterwards. It is rounded off to 1. Simply implying that the probability of a hit is very high with the small aiming errors and short range.

Mr. EISENBERG. Now of course this aiming error is derived from the three riflemen who you employed in the tests, is that correct?

Mr. SIMMONS. Yes.

Mr. EISENBERG. Could you proceed to the other two?

Mr. SIMMONS. Using the 1.2 mil aiming error, again at the larger targets, the probability of hitting the target at 175 feet is 1; at 240 feet it is 0.96; and at 270 feet it is 0.92.

Mr. EISENBERG. How would you characterize the second two figures in terms of probability?