

# SON OF LONG-RANGE M-16 SERVICE RIFLE

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The June 1995 issue of Precision Shooting lifted the veil from the arcane world of M-16 service-rifle shooting at distances previously considered somewhere between unworkable and impossible. Now, thanks to the generosity of Jimmy "JLK" Knox, your hard-working handloaders, shooters, and data-inputters have expanded upon the VLD (very low drag) 80-gr info for another peek behind the scenes. Readers may compare this issue's data on 70- and 75-gr JLK .223 bullets with the similar info published in June. Not surprisingly, we found some similarities and some differences, and we'll point them out where appropriate. If the reception from the first article is repeated, we may have to prod Dave Brennan into putting all this stuff into book form and sending us on the talk-show circuit. (Visualize the scene: Larry King, who asked Capt.Scott O'Grady, "Do you eject before or after the missile hits?" now gets to display world-class ignorance on ballistics. Yes!)

## TEST RESULTS OF 70-GRAIN VLD BULLETS

AT 200 YARDS

All tests conducted with LC 91 case, GI primer, OAL 2.40  
Five-round group averages for velocity and extreme spread.

A = MOA B = 2 MOA C = ho hum

Varget powder Excellent results

Charge Av. Vel. SD Grade

25.0 2,900 17 B

25.5 2,950 16 A

26.0 3,020 18 A+ Best 70-gr load tested

26.5 3,083 9 A

H-4895

23.5 2,923 42 C

24.0 2,985 16 C

24.5 3,041 11 A Primer leak

25.0 Did not fire

N-130

22.0 2,876 10 A

22.5 2,931 14 A 4th-best 70-gr load tested

23.0 2,982 13 A

23.5 3,033 6 C

## N-133

23.0 2,865 11 A 3rd-best 70-gr load tested

23.5 2,942 16 B

24.0 3,008 22 B

24.5 3,054 19 A

## N-135

24.0 2,866 15 B

24.5 2,911 24 B

25.0 2,968 10 B

25.5 2,998 22 B+

## R-12 Good results

24.0 2,794 8 A

24.5 2,881 12 A

25.0 2,978 28 A

25.5 3,029 31 B

## R-15 Excellent results

24.5 2,864 63 C

25.0 2,932 14 A

25.5 2,992 17 A

26.0 3,035 11 A 2nd-best 70-gr load tested

## TEST RESULTS OF JLK 75-GRAIN VLD BULLETS

## AT 200 YARDS

All tests conducted with LC 91 case, GI primer, OAL 2.41 Five-round group averages for velocity and extreme spread

A = MOA B = 2 MOA C = ho hum

## Varget Powder

Charge Av. Vel. SD Grade

24.5 2,780 29 B

25.0 2,868 13 B

25.5 2,899 24 B

26.0 2,985 10 B (Grade A+ w/out one flier)

Filled to base of neck

## A-2520

24.0 2,803 49 B

24.5 2,864 11 B

25.0 2,885 15 B (Grade A+ w/out one flier)

25.5 2,985 8 C

H-335

24.0 2,852 127 B

24.5 2,850 21 B

25.0 2,901 29 A

25.5 3,028 14 B

H-4895

24.0 2,868 11 A

24.5 2,944 17 B

25.0 2,998 7 A Blown primer, cratered

25.5 Did not fire Filled to base of neck

IMR-4064 Good results

24.5 2,908 16 A 5th-best 75-gr load tested

25.0 2,900 14 A+ 2nd-best 75-gr load tested

25.5 2,982 17 A Primer misfire

26.0 Full to top of neck

R-12 Good results

23.5 2,688 41 B+

24.0 2,763 14 A+ Best 75-gr load tested

24.5 2,822 19 B

25.0 2,908 26 A

R-15

24.5 2,770 13 A 4th-best 75-gr load tested

25.0 2,908 -- A 3rd-best 75-gr load tested

25.5 2,952 24 B

26.0 2,995 11 B Blown primer

VVN-133

24.0 2,933 13 B

24.5 2,974 12 B Blown primer

25.0 Did not fire

25.5 Did not fire

The Difference Between 70s and 75s

As before, the test data were compiled by benchrester Dana Beasley, using his Howa Weatherby action with a 20-in Douglas barrel, one-in-seven twist. The chamber was cut with a JGS match reamer. The barreled action was set in a McMillan benchrest stock, topped variously with a 20X Weaver or 36X Tasco. A word about barrels. For 600-yd shooting, nine-twist barrels definitely favor the 70-gr JLKs. There have been reports of 75-grainers performing well in nine-twist bores, but we suspect that involves some crafty number-crunching, incense burning, or legerdemain. For across-the-course shooters, evidence supports choice of 69-gr bullets in nine-twist tubes for the 200-300-yd legs and 70s at 600 yds. The 70s need to be seated out to touch the rifling, so refer to the June '95 article for further detail. It's possible to build a rifle with a short throat to accommodate 70-gr VLD bullets, which (unlike the longer, heavier JLK BBs) can be loaded in the magazine. The obvious advantage is the simplicity of one ammo type for across-the-course use: the proverbial M-16 for all seasons. The 70s are superior to 69-grainers at 600 yds, but not better than the 80s. However, the afore-mentioned commonality may offset the long-range deficit for some shooters, and there's definitely an advantage for the 70s on reduced-course matches or where wind is not a big factor.

#### Powder: What Works

Our tests involved eight powders for both the 70s and 75s, and there is a good deal of similarity between the best propellants for the new 75-gr VLDs and the 80-grainers described before. Both bullets really like Reloader 12 and 15, which together accounted for at least three of the best groups for those bullet weights. RL-15 provided the best single group with the 80-grainers while RL-12 topped the 75-gr trials. IMR-4064 placed second and fifth among all 75-gr loads.

In absolute terms, the difference between first and fifth place with the 75s was about .273 MOA. We found a somewhat different situation with the 70-gr JLKs. While some different powders were tested, LC 93 brass and GI primers were used in all instances, and other variables were miniscule. (For instance, overall cartridge length with the 75s was 2.40 in. and the 70s were 2.41.) Though RL-15 placed second, the first and fifth spots were won by Varget with N-133 and -130 taking third and fourth. It was a much closer race than with the 75s, amounting to merely .103 MOA difference between first and fifth-best loads (but does anybody care?).

In summary, the 70s are somewhat more consistent than the 75s, at least among the five best choices, but the slightly-heavier VLDs do better, in absolute terms, by about 18% among the top three. The relative difference between the fourth- and fifth-best loads for both bullets isn't worth mentioning. So we won't.

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For further queries out there in computerland, visit Accuracy Speaks via our E mail address: [ask-derrick@accuracyspeaks.com](mailto:ask-derrick@accuracyspeaks.com) We can't respond to every query, but we'll select pertinent subjects for use in further columns.