

st Bullets

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y in .30-06. Yet
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Is this borne out?

e out in practice.
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velocities.

s the .30 carbine
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relatively heavy
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kapok or Dacron
esirable, and may
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Snap Caps

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Compensation In NM Rifles

Has it been determined whether "compensation" exists in M1 and M14 National Match rifles?

Answer: Compensation is a characteristic of some rifles, which deliver bullets from rounds giving less than the average velocity at a higher angle than those from rounds greater than average velocity. Vertical dispersion at long range is then smaller than would be expected from the velocity spread. This condition results from jump, the small angle between the bore axis when the round is fired and the line on which the bullet departs; this is affected by the rifle's bending during discharge as well as by its movement as a whole.

Compensation appears to have been first noticed in the .303 long Lee-Enfield rifle firing Mark VI ammunition at 1500 yds. and the .303 Mark III rifle firing Mark VII at 900 yds. It has been evident in 7.62 mm. NATO conversions of the No. 4 rifle in both England and Canada.

Frankford Arsenal tests

It has not been extensively investigated for the M1 National Match rifle. However, Frankford Arsenal in 1966 tested two M1 National Match rifles for it during an investigation on another subject. National Match ammunition was used. The rifles were fired at 600 yds., the bullets also passing through a paper screen at 300 yds. Velocity was measured on every round. Groups from both rifles at 600 yds. were more than twice as large in vertical spread as those at 300 yds., and the rifles delivered higher-velocity rounds high in the 300-yd. groups, not low in those groups as they would have been if favorable compensation had been present. There was thus a negative or unfavorable compensation. This may be a characteristic of the M1 rifle. It is not enough to be serious, since correctly accurized M1 rifles prove to be quite successful in competition.

About 1962, the Aberdeen Proving Ground extensively tested 18 cal. 7.62 mm. M14 rifles for this characteristic. They

were fired from rest through screens so as to make groups simultaneously at 300 and 600 meters. Average extreme vertical of the 600-meter groups was only 1.90 times that of the 300-meter groups. Results were precise enough to show that this difference from a ratio of 2-to-1 was significant. There was thus a distinct favorable compensation. While these were M14 service rifles, it appears probable they would be representative of the M14 National Match rifle in this respect.—E.H.H.

Kongsberg Arms Factory

All the Norwegian Krag-Jorgensen rifles in my collection are marked with an ornate "K" surmounted by a crown. What is the significance of this marking? Where were these rifles produced?

Answer: The "K" surmounted by a crown is the trademark of the Kongsberg Vapenfabrikk (Kongsberg Arms Factory), a Norwegian government establishment at Kongsberg in southern Norway. Founded in 1814, this factory produces Norwegian military small arms and artillery as well as commercial arms.



Kongsberg trademark.

Norwegian Army muzzle-loading flintlock muskets and Jaeger rifles were the first arms produced at Kongsberg. Then came percussion muzzle-loaders and breech-loaders. Among the latter was the Model 1842 musket with a pivoting hollow breechblock and underhammer lock mechanism. Following this were various metallic-cartridge breech-loading rifles including the Remington rolling-block for the Norwegian Army and the Krag-Petersson for the Norwegian Navy. Both are chambered for 12.17 mm. cartridges. The Krag-Petersson has a Martini-type pivoting breechblock and a tubular magazine in the fore-end. It was developed in the early 1870's by Norwegian Army Captain (later Colonel) Ole Hermann J. Krag, a former director of Kongsberg Arms Factory, and Axel Petersson, a Swedish engineer.

In the 1880's, production of bolt-action magazine rifles was started at Kongsberg. First was the Jarmann 10.15 mm. rifle with a tubular magazine in the fore-end. It was developed by Norwegian armsmaker Jacob S. Jarmann, and was adopted by the Nor-

wegian Army. Col. Krag, a Norwegian arms designer, Erik Jorgensen developed the Krag-Jorgensen rifle, which was adopted by Denmark, U. S. in 1892, and Norway. The Norwegian Krag-Jorgensen rifle produced at Kongsberg, however, for the 6.5 x 55 cartridge rifle arm was produced in rifle and carbine models and hunting versions. Although largely obsolete, it is still in use to some extent by the Norwegian sportsmen. It remains a popular sporting rifle.

The Kongsberg Arms Factory has produced many different handguns for the Norwegian Armed Forces. Best known collector is the 11.25 mm. Model 1914 automatic handgun, a modified version of the Mauser Model 1914.

In addition to sporting rifles, the Krag-Jorgensen rifle, commercial rifles produced at Kongsberg include rimfire rifles, double-barreled Mauser hunting and target pistols, and harpoon guns. The Model 59 target rifle in 6.5 mm. caliber is currently one of the most popular commercial Kongsberg products. It was developed with a Mauser Model 98 in mind, and is popular in Norway and to some extent in Great Britain.—L.O.

Test For Corrosive

Much foreign military ammunition in this country is not specifically noncorrosive. Is there any test to determine this?

Answer: The following test is reliable. Fire several rounds in a clean wool. Wash with nitric acid solution for chloride water. (Solutions used must be distilled water.) If there is a precipitate, as there will be if the solution contained potassium chloride, the silver nitrate in the solution will result in forming a white flocculent precipitate (silver chloride). If priming is then corrosive, the precipitate indicates the corrosive type.

A test can be done using a clean rust- and oil-free razor blade. Immerse in a non-stainless steel barrel, fire one round. Clean the barrel, fire one round. Repeat against each of 5 blades. Clean the barrel close before the muzzle. Repeat with 5 more blades with 5 primings. If the unknown ammunition is the same as 5 primed castings, the reaction known to be corrosive, the blades with bare handle. Set all 15 blades, clean the barrel, hot, humid location in the open, inspect daily for rusting. Clean the barrel with rusting with corrosive solution. Ammunition respectively. It is difficult in deciding ammunition.

Note that for either test, the barrel must be cleaned before firing. Use of test primer, and clean the barrel to prevent possible rusting.



caps. (l. to r.) 20-ga. English of recent type, 16-ga. European, 12-ga. U. S. steel.