

barrels firing military
with hard boattail bul-
plants. Then U.S. expe-
is to a great degree.
with requirements as to
cleaning necessary for
appeared in *The Amer-*
"Prolonging Match
ber, 1970, p. 20-21.
vious beliefs on the

on a greatly enlarged
grooves of the test
article. Most of the
to the lands at succes-
rosion. Groove dimen-
two curves at top. One
bottom of the groove
is simply a horizontal
9", meaning .3118"
begins at the sloped
is the forcing cone.)
to the groove after
grooves did erode at
the chamber the meas-
.564" as nearly as can
sion of some .0005"
ased diameter. But at
umber the groove ero-
.0002" deep, and so
of the graph at one
er.

early .006" depth of
e .004" depth of our
extended the barrel life
ome effect on relative
grooves. But in our
early all the erosion
barrel life) is on the
umber, and compara-
grooves. It appears to
of adequate diameter
equate cleaning, that
d barrel life which is
ossible.—E.H.H.

Muzzle-loader

muzzle-loading rifle
season. One may go
through the season
ot. Provided it is not
the load or fire the
may the load be left

one this many times
and percussion guns,
away when required.
res. Skip none!

oughly, removing the
screw. Soak the end
a water-base cleaner
e nipple or the vent.
ese with another pipe
ater-base cleaner, and
th a patch wet with
reaser, being careful
on the stock finish.
le and vent with a
nd with a dry patch
ke certain everything

lly, with hammer up
air space. No bullet
owed to get into the
Ferry's Match Patch-
s a treated patching

and loads dry; Hodgdon's Spit Patch works
well if you don't get too much on the
patching. After loading, place a small piece
of Saran Wrap on the nipple and snug the
hammer down on it, of course without a
cap. Seal the vent of a flintlock with a
sharpened matchstick. You may run a very
light film of sperm oil down the bore to
prevent rusting there. Then place a square
of Saran Wrap over the muzzle and secure
it with a rubber band. Finally, stand the rifle
away muzzle down; this will keep all oil
out of the load.

Do not use WD-40 at any point here.
While it is an excellent cleaner and lubricant
for many purposes, it is so active that
it will surely get into the load.

In the field, run a nipple pick through
the nipple before capping, or a vent pick
through the vent, making sure it reaches
the powder. When hunting in the rain,
place a ball of Saran Wrap just inside the
muzzle to keep water out.

All this is predicated on not firing the
rifle. If you've shot it, you must clean it
and go through the procedures above.
After hunting in the snow or rain, it's best
to fire the load and start over.

Remember to store that gun muzzle
down.—D.L.D.

National Match Barrels

*I am told that two different barrels are
found on M1 and M14 National Match
rifles. Is this true, and if so what is the
difference?*

Answer: It is true.

Barrels for National Match M1 rifles
were made with two rifling dimensions as
follows:

Dwg. No.	Bore Dia.	Groove Dia.
F7790134	.2995+.0020"	.3075+.0020"
F7791035	.300+.001"	.3075+.0010"

Specifications for the two barrels are other-
wise identical. They may be identified by



National Match M1 barrel marked
F7791035 has bore diameter of .300"
and groove diameter of .3075". Tolerance
on both dimensions is +.001".

the drawing number which is stamped on
the right side of the barrel's breech end.

Between 1953 and 1959 Springfield
Armory produced 21,292 new National
Match M1 rifles. From 1954 to 1963 an-
other 23,457 National Match M1's were

produced by rebuilding existing rifles re-
turned to the installation. New and Armory
rebuilt National Match M1 rifles are in-
distinguishable by either appearance or
performance. Others have since been re-
built at other places, not always completely
to Armory specifications.

M14 National Match rifles may be
found with two different barrels, the differ-
ence being that chrome-plated barrels were
alternative standard when the first 3,000
National Match M14 rifles were made at
Springfield Armory in 1962. Barrels
marked 7791173 have chrome-plated bores
and chambers; barrels marked 7791362 do
not. The two barrels are otherwise identi-
cal, and both have a bore diameter of
.300+.001" and a groove diameter of
.3075+.0010". Use of chrome plated bar-
rels was discontinued because the process
increased the arm's cost without contribut-
ing to its performance as a match rifle.—
R.N.S.

Blackpowder Velocities

*What are the highest velocities prac-
ticable with blackpowder?*

Answer: Blackpowder was used in breech-
loaders up to 2000 f.p.s. The British .450/
.400—3¼" Magnum Black Powder Ex-
press cartridge, with 110 grs. blackpowder
and a 230-gr. lead copper-tubed bullet, was
regularly listed at 2000 f.p.s. muzzle veloc-
ity. But this was an extreme. Other black-
powder cartridges, even express types, gave
lower to much lower velocities.

The question now has meaning mostly
in muzzle-loading. Rifles of appropriate
caliber and construction can be loaded
with round balls to muzzle velocities above
2000 f.p.s. and conical bullets in some
cases to about 1800 f.p.s. See for example
the loads, tested for velocity and pressure,
in the Lyman Black Powder Handbook.
This reference work was reviewed in *The
American Rifleman*, May, 1975, p. 61-62.

What is practicable is not so readily
determined, because it involves trade-offs.
Attempts at high velocities may yield small
return or even no return at all.

The following velocities, each the aver-
age of 10 shots and rounded to the nearest
5 f.p.s., were obtained during NRA test
of the .45 Thompson/Center Hawken rifle
(*The American Rifleman*, June, 1971, p.
68-72). The 100-yd. velocities were mea-
sured, as well as those at 15 ft. Barrel
length of this percussion rifle was 28", and
the bullet was a 126-gr. round ball of soft
lead.

Charge, FFFg Blackpowder (grs.)	Velocity at 15 ft. (f.p.s.)	Velocity at 100 yds. (f.p.s.)
50	1505	860
55	1610	920
60	1660	915
65	1700	915

Thus increasing the powder charge from
50 to 55 grs. increased the velocity at 15 ft.
range by 105 f.p.s. Then going from 55 to
60 grs. gained only 50 f.p.s., and from
60 to 65 grs. only 40 f.p.s.

But at 100 yds., there were no higher

AUGUST 1975

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the "Parti
for deep per



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and calibers avail

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