



Testing New Ground

STEEL SHOT STUDY

FINDS FACTS FOR PHEASANT HUNTERS

BY CRAIG BIHRLE

If a day of pheasant hunting is ever unpleasant, Jerry Feist experienced one.

A participant in the first-ever scientific test of shotshell efficiency on ring-necked pheasants, Feist's task on that day was to bag six roosters at long range. The day had advanced from mid-morning to almost supper time, and Feist was the only one of six hunters who had not completed his mission. While most of the others also struggled

to collect their long-distance birds, Feist had a particularly challenging outing.

An experienced pheasant hunter, the normally jovial Jerry would just as soon have cased his 12 gauge on this hot early October afternoon, but since this was an important test of ammunition that required a certain number of birds shot at several distance increments, he persevered.

Tom Roster, lead researcher for the CONSEP pheasant test, gets ready to draw a bead on a ringneck rooster. Test results provide a wealth of information for pheasant hunters.

Finally, a burly rooster evaded the nose of a curious dog and burst from drying cattails. Instinctively, Feist quickly shouldered his shotgun, and then waited...and waited...as the bird stretched the distance between them, effortlessly gliding toward a grassy island in the middle of a wetland. When the pheasant passed the range at which most hunters wouldn't think of trying a shot, Feist pulled the trigger and tumbled the rooster onto the island.

The shot distance, subsequently verified by his hunting partner Mike Johnson with a laser rangefinder, was close to 50 yards. The ammunition, at that time known only as "code black," was effective when properly placed by the hunter.

And that, in effect, was the essence of this fact-finding test. Which, if any, of three steel shot loads might prove better or worse for taking ring-necked pheasants, when the hunter can hit the bird.

While most hunters have their own preference and ideas about lead and steel (or other nontoxic shot) loads for pheasant hunting, no *scientific* research has ever closely examined the issue with any shot type.

Discoveries from this test may surprise some, and contradict long-held assumptions by others, but when it comes to ring-necked pheasant hunting, the code black load (which unknown to Feist or any other hunter in the test, contained large steel pellets) was found to be more efficient for cleanly bagging pheasants than code green or code red loads, which contained smaller steel pellets. Not just at longer distances, either. At *all* distances.

That was the major finding among many derived from this two-year study of steel shot performance on pheasants. The test, conducted in fall 1997 and 1998 by the Cooperative North American Shotgunning Education Program, and designed and administered by independent shotshell ballistics expert Tom Roster, compared the capabilities of three different steel shot loads for taking ring-necked pheasants. The U.S. Fish and Wildlife Service, North Dakota Game and Fish Department, and South Dakota Department of Game, Fish and Parks funded the test.

CONSEP is an international organization of 24 U.S. states, including the North Dakota Game and Fish Department, the U.S. Fish and Wildlife Service, Canadian

Wildlife Service, three foreign countries, as well as Remington Arms Company, Winchester Group/Olin Corporation, and many others. CONSEP exists to generate and provide scientifically valid, useful shotgunning and shotshell information to hunters, wildlife agencies and the arms and ammunition industry.



Each steel shot load tested was color-coded. If test participants know what they are shooting, personal bias could affect results.

Testing of steel shot on pheasants is a direct response to expanding requirements for nontoxic shot use for upland game hunting on national wildlife refuges and waterfowl production areas managed by the U.S. Fish and Wildlife Service.

Nontoxic shot is also required for upland game hunting on state-managed areas in some U.S. states, but not in North Dakota.

In North Dakota, South Dakota, Minnesota, Iowa and Montana, where most WPAs exist, hunters frequently seek pheasants on these areas where lead shot is no longer allowed. While steel shot effectiveness for taking ducks and geese is well-documented by CONSEP, hunters who choose to – or must – use nontoxic shot for pheasants had little more than educated guesses to guide them.

Steel shot is one of several nontoxic shot types approved for use in areas where lead shot is not allowed. Others include bismuth, bismuth-tin, tungsten-iron and tungsten-polymer. For this test, only steel shot was selected, Roster said, because it commands the vast majority of nontoxic shot sales, is readily available in a variety of shot sizes and load configurations, and is by far the least expensive of nontoxic shot types. "The average hunter," Roster said, "...at the turn of the century, is still concerned about economical ammunition that is legal to use."

The most economical steel shotshells in 12 gauge are those that come in one-ounce payloads, and that is what the CONSEP pheasant test investigated. The one-ounce load, Roster noted, contained plenty of shot for taking ducks in various waterfowl tests, and therefore seemed theoretically likely to be adequate for pheasant, since they are roughly the same size as a mallard. Shotshells were 1,375 feet per-second, 2 3/4-inch factory Remington 12 gauge loads (no specially-made loads), and shot sizes included No. 6 (.110 inch), No. 4 (.130 inch) and No. 2 (.150 inch), though shooters did not know the shot size they used each day. One-ounce loads of each shot size are also available in three-inch 20 gauge shells.

"The purpose of the steel shot pheasant test," Roster explained, "...was to try to find the most efficient of the three steel shot sizes for taking ring-necked pheasants."

After more than 300 pheasants bagged over typical pheasant habitat, at measured distances of less than 20 to more than 60 yards; after analyzing those birds for post-shot behavior, and x-rays and necropsies to determine pellet damage and penetration (terminal ballistics), one load distinguished itself.

"If you have a choice between steel No. 2s, No. 4s and No. 6s," Roster recommended, "the No. 2 steel would be your best choice. An interpolation of the data clearly indicates that No. 3 steel would be a close second."

While pheasant hunters sometimes look to larger shot sizes – No. 2 steel or perhaps No. 4 lead – for late-season hunting where shot distance might be longer than earlier in the season, this test clearly demonstrated that No. 2 steel is more efficient than 6s or 4s for harvesting pheasants at **all ranges**. At the same time, shooters were able to hit pheasants with steel 2s (111 pellets per ounce) at the same rate they did with steel 6s (326 pellets per ounce) and 4s (177 pellets per ounce). "We did not find a difference in the hunters' ability to hit the target," Roster noted, "regardless of the number of pellets in the shell."

While this test did not investigate lead shotshells typically used for pheasant hunting, hunters might make some

