

obtain equivalent energy. So, if you previously used #5 lead for your duck shooting, #3 steel loads will provide very comparable ballistic performance.

You might now ask, "By going to the larger pellet size, won't I lose pattern density?"

The answer is "No," mainly because steel loads pattern better than lead loads, and thus deliver comparable pellet counts downrange.

Because steel is harder than lead and deforms less upon ignition in the chamber and contact with a gun's barrel, it is possible to select a larger shot size when using steel and still maintain good pattern density.

For shooting at distances under 50 yards, hunters will usually find that improved cylinder and modified chokes will perform much better with the tighter patterns and shorter shot strings characteristic of steel loads. In fact, the average hunter may be using a gun that is "overchoked" for both steel shotshells and current lead loads. An improved modified choke is a good choice when using steel shot for pass shooting beyond 50 yards.

Although some waterfowl hunters will not notice a difference between shooting lead and steel loads, other shooters will have to make adjustments. Remember that steel shot leaves the muzzle with a high initial velocity, but then slows down faster as it moves downrange. The general rule is to shorten your lead when shooting steel at targets at less than 30 yards, use about the same lead for shots between 30 and 50 yards, and increase your lead for longer shots. All hunters should practice with steel loads and determine their own sight picture or lead that they need to use.

Numerous studies have been conducted to determine the relative crippling rates of lead versus steel shot. One of 14 tests found that steel crippled more birds than lead. One test showed lead crippling more than steel, while the other 12 tests showed no significant difference between the two.

Ballistics researchers have field tested many of the steel shot loads currently on the market. Number 4 steel for ducks and #2 steel and F shot for geese are three loads which appear to have a disproportionately high

crippling rate. In each case, it is suggested that a different pellet size be selected. In other words, when #4 steel shot seems appropriate, based on the expected range of the target and size of the ducks to be taken, the larger #3 steel shot would be preferable. When #2 steel seems appropriate for geese, based on expected range and the species of goose, steel BB's would be preferable. BBB and T shot have been proven to be quite effective on Canada geese for pass shooting out to 70 yards.

Some sportsmen have voiced a concern that steel shot may damage their guns and early steel shot loads did, in fact, damage some gun barrels.

However, the entire shot charge is now enclosed in a tough plastic shot cup that virtually eliminates contact between the shot and inside of the barrel. Bore erosion is presently no greater with steel than with lead.

However, steel loads, like magnum lead loads, may cause a slight expansion of the choke (ring bulge) in some tightly choked shotguns and in those made with soft steel barrels. Ring bulge is caused by the higher pressure of these loads and the resistance of the shot charge to being compressed as it enters the choke. Ring bulge is essentially cosmetic and does not affect the performance or the useful life of the shotgun.

Older, soft steel American double barrels, such as L.C. Smiths and Parkers, and some modern guns made in other countries, are not recommended for use with steel shot. If you are not sure if steel shot loads will damage their guns should contact the manufacturer.

Waterfowl hunters should contact department waterfowl biologists Jeff Herbert (444-2813 in Helena) or Tim Hinz (252-4654 in Billings) if they have any questions concerning the effective use of steel shot.

By learning the facts about steel shot and developing the skills to shoot it, you can contribute to the conservation of Montana's, and the nation's waterfowl resource. You will also be able to leave your favorite waterfowling spot knowing that hit or miss, you haven't left a toxin behind that can continue to cause waterfowl to die long after you've left.

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