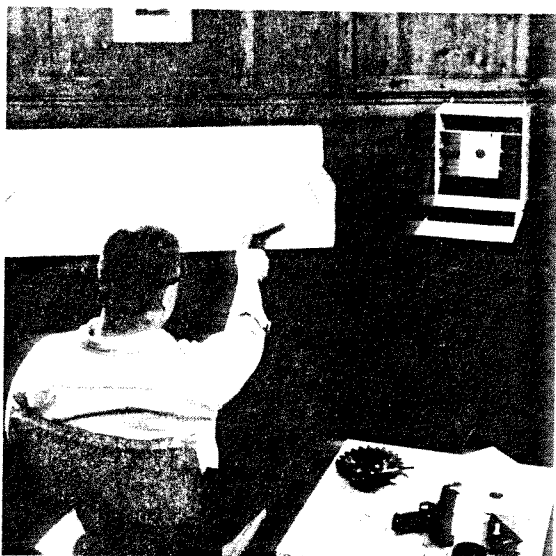


Target shooting from your armchair

BY DICK KIRKPATRICK

With the right kind of bullet trap you can fire anything from spring-powered BBs to big-bore handguns and rifles right in your own living room. And it's perfectly safe



WHAT, FIRE THAT REVOLVER in the den? Sure, why not? He's shooting .22 shots into a perfectly safe bullet trap that soaks them up with no danger of back spatter. It's cold outside, and he couldn't shoot safely in his suburban neighborhood anyway; it's comfortable indoors, and the thick paneled walls and acoustically tiled ceiling keep the noise down. And if his wife does complain about noise, he can always switch to the quieter CO₂ pistol on the table. They'll hardly hear that upstairs . . .

Indoor shooting, whether in an armchair or a regulation basement range, is becoming more and more popular. And more and more good equipment is becoming available for it. You can shoot anything from spring-powered BBs to big-bore handguns and rifles in your living room—if you can get away with it—in complete safety. With 15 ft. of space, you can set up a range for BB guns, and the new spring-powered weapons are a far cry from the equipment you got in trouble with when you were a kid. With 25 ft., plus a little leg room, you can set up an official-scale NRA course for .22 target work. And 35 to 50 ft. (plus an indulging family) is enough for your own indoor trapshooting setup if you like, using the efficient and inexpensive little .22 shotguns with eggshell birds and launching equipment to match. About the only thing you can't scale down to the living room or basement is full-sized shotgun shooting.

living-room rifle range

Big-bore rifles—guns over .22 rimfire size—are no problem, though. Although too powerful to stop with a simple bullet trap, too noisy to fire indoors without acoustical help, and pretty expensive to shoot for fun, you can throw away the book and shoot them with wax, plastic, or small-bore insert bullets. Then the big gun becomes very practical and quite inexpensive for indoor plinking. The power for all three systems is just the pistol primer—no regular powder charge at all. It provides power—and accuracy—enough for close-range indoor shooting, and still feels like the real thing. So you can shoot your .30-06 in the living room, too.

Wax bullets are probably the easiest, and certainly the least expensive. Starting with an empty cartridge, you fit in the proper-sized primer (large pistol or shotgun primers work best) for

the power. You melt a pan of paraffin (or, better still, specially made bullet wax you can buy at a sporting-goods store) and pour it into a shallow pan until it's about $\frac{3}{16}$ -in. deep, though the depth isn't critical. Shove the empty case down through the cooled wax like a cookie cutter, then lift it back out with a slight twist, and it's loaded and ready to fire. For serious wax-bullet shooting, you'll want to drill a few cases to take the big shotgun primers for maximum power, or buy predrilled cases designed for that kind of load. There's a wax-loading kit on the market that contains all the equipment plus some simple tools to simplify reloading plus a supply of special wax that doesn't foul gun barrels as much as paraffin. In either case, you'll want to clean out the barrel frequently to remove wax deposits. For best results, the flash hole inside the primer pocket needs to be opened to about $\frac{1}{16}$ in. too. For the wax-bullet man, there are precast wax bullets that fit into the cases but aren't reusable.

shoot nylon bullets

That factor brings up the second way to shoot big-bores indoors. You can buy molded nylon cases and bullets that work like the wax outfits, using the same primers for power. The nylon slugs, though, are tough enough that they're reusable indefinitely as long as you shoot into a fairly soft backstop. While neither wax nor plastic bullets will reproduce real-bullet accuracy, you can get 3 in. groups at 25 ft. with any of them and probably a little better with the nylon bullets.

One big advantage of wax bullets for western-style shooters: The fast-draw boys use low-primer loads and soft wax bullets and draw down against themselves in a heavy plate-glass mirror. The wax won't break the heavy glass, and it sticks where it hits for scoring. But don't try it out on the antique pier glass. Wax bullets do deliver a pretty good punch. They'll break ordinary glass, and can deliver a pretty good bruise—maybe even put out an eye. Whatever "soft" load you use, handle the gun as if it had real bullets in it.

Another way to shoot big-bore handguns indoors is to use the cylinder insert bullets that use a primer to fire a BB through a short barrel built into the case. They carry out through the barrel without touching it, hit hard enough to penetrate $\frac{1}{2}$ -in. plywood at 25 ft. and deliver fair accuracy.

The cost of primer-powdered shooting is very low. The primers themselves cost about a penny apiece; a pound of good bullet wax costs about 60 cents and is reusable. Brand-new, specially drilled .38 cases for wax-bullet loading cost around 10 cents apiece, and the full reloading kit is about \$5.00. The nylon bullets cost about \$2.00 for 6 (plus primers, which can't be mailed to you) and are reusable until you hit a hard surface with them. The set of 6 inserts to fire BBs through any size handgun costs about \$9.00, plus primers and BBs. None of the systems is very expensive compared to the real thing.

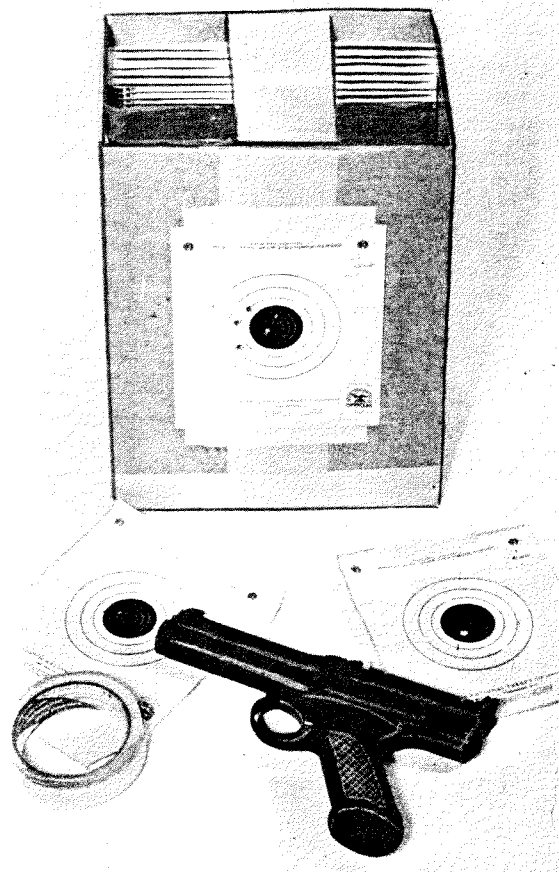
For pure fun-shooting, it's as hard to beat the old spring-powered BB gun now as it was 20 years ago. The new ones are a lot easier to use and harder-hitting than they were then, too, but the cost is still only the price of the BBs—and they're reusable if you shoot into a soft backstop like the one pictured. A good BB gun may cost you as little as \$12.00, but delivers good, consistent accuracy at BB-gun range (15 ft.) and hits 350 ft. per sec. for impressive punch at that range. With good, copper-coated steel BBs selling around 50 cents a pound and the power coming from your good right arm, it's a lot of shooting for as little as a dollar.

economical and accurate

Next best for economy, but accurate enough to be used in National Rifle Association 25-ft. competition, are the hand-pumped pneumatic guns. They use arm power (and more of it) but shoot BBs, .177 caliber or .22 "skirted" lead bullets through a rifled barrel. You can pump them from 2 or 3 up to 10 or 12 strokes, and get low power for soft backstops and indoor shooting, or very good punch for long-range shooting or varmint hunting. The gun is more expensive than the spring-powered models, but if you buy the .177-caliber models, you can still shoot BBs for plinking at a fraction of a cent per shot.

Skirted pells, or pellets, aren't expensive, either, in the neighborhood of \$1.00 for 250 in .177 and for the same number of .22s. They provide the best accuracy for the money of any of the indoor guns if you don't mind pumping them. The pumping isn't tough for most people, though some women and smaller kids find it difficult.

The liquid CO₂ bottle made the big break-



A shooting box (left) lined with acoustical ceiling tile, gives a break on noise with .22s. The bigger the box the better it works; 2 x 4-ft. sides reduce the noise 15 percent. The National Rifle Association recommends 4 x 4 ft. or larger. A shooting mat and pad also helps. Here (right) is an easy stop for BBs, CO₂ and air-gun pellets, also wax or plastic bullets. It's a cardboard box filled with old phone directories stacked tightly. It costs nothing and is good for hundreds of rounds, is safe and can be set up anywhere there's shooting room. To close the front of the box (it gets riddled) stick new targets over the old

through in pneumatic weapons right after the war, when pellet-gun manufacturers learned to use that inexpensive bottled power for their guns. Now you can get CO₂ powered rifles and pistols—even a simulated revolver—that'll fire from 20 to 40 rounds or more on a one or two-cartridge charge of CO₂ delivering effortless, consistent shots at up to 650 ft. per sec. The cost, of course, goes up, but not too much. A cartridge costs about 20 cents.

You can buy CO₂-powered pistols and rifles in a broad price range under \$100. The highest priced model has everything the big-time match .22 rifles have, including pinpoint accuracy. Both pistols and rifles are available in single shot, manual repeating and semiautomatic models just like powder weapons. They're tops for in-

door shooting, with plenty of accuracy, big-gun sights and features, but a minimum of noise and no need for a bullet trap. The simple box stop shown will do nicely if you shoot carefully.

This winter most of the high-level indoor shooting is being done with the regular .22 rifle on 25 and 50-ft. indoor ranges, as it has for years. The .22 is hard to beat for inexpensive precision shooting on regular ranges, and makes a perfectly practical indoor weapon—if you have an adequate bullet stop—or trap. You can buy a .22 handgun for \$20.00—or \$300.00; a rifle for \$16.00—or \$300.00 up. That's stock. You can pay more if you like custom goodies. Almost any of them will provide satisfying accuracy at indoor distances; at 25 ft. the sights mean more than the gun as a rule.

The bullet trap isn't too big a problem. You can buy a commercial .22 trap for under \$20.00 and a heavy-duty model for any size handgun load for not much over \$25.00. You can build the excellent "venetian-blind" trap for little more than the price of the steel plates. It'll stop .22s for years, and take an occasional bigger load once in a while.

Maybe the biggest problem in shooting the .22 indoors is the noise. Especially in a concrete-floored basement, it does ring the ears a bit. An acoustical ceiling and acoustically tiled walls make a big difference. The acoustical shooting box shown will be some help. Surprisingly, the normally quiet .22 shorts seem to make almost

With this cork-firing "trapshooting" outfit, the shooter's foot presses a bulb to release a breakaway "bird." Then he fires, aiming to "break" it



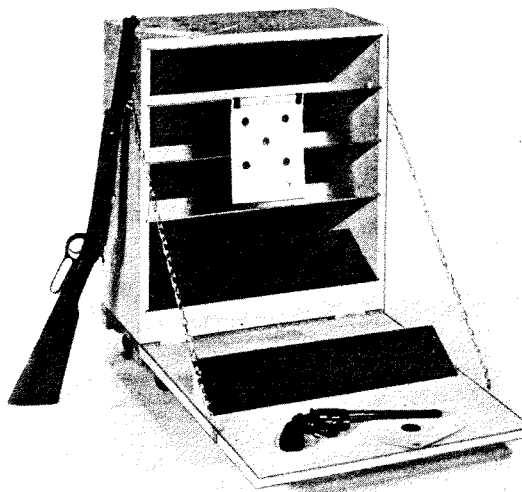
as much noise as the long-rifle loads when shooting indoors, though they have a definite price advantage. At 25 ft. they're both more accurate than you will be for anything but formal target work.

Best place to go for information on shooting indoors—or anywhere else, for that matter—is the National Rifle Association, 1600 Rhode Island Avenue NW, Washington, D.C. 20036. Write for their excellent booklet on the 25-ft. shooting program; better still, you can become an individual member for a small fee. Still better, check out and join your local NRA-affiliated club. It's always more fun to shoot with friends, indoors or outdoors.

The bullet trap detailed is an inexpensive, easy-to-build home-range version of the excellent



This "venetian-blind" bullet trap is designed to stop any rimfire .22, and will contain the lower-powered handguns up to .38 short for occasional shooting. This 24 x 26-in. size is for beginners on the 25-ft. range, and is quite safe



"venetian-blind" bullet traps designed for commercial and police range use by Joseph Nikoden of the Detroit Bullet Trap Company of Chicago. It's less likely to produce "splashback" than the traditional single-plate traps. It doesn't throw as much sand around the basement, nor does it take up so much floor space when not in use. This design can be scaled up or down to almost any size, and is flexible enough that it can be changed to fit the steel plates available to you. We show this one in detail, but mostly to give you the principles of venetian-blind trap design.

Key to the trap are the angled, overlapping plates that actually do the work of deflecting the incoming bullets. Key to *that* feature is that bullets don't bounce like billiard balls, but smear out and slide along a hard, smooth surface. The soft .22 slug smears down along the slanted plate, off onto the steel back plate, and down into the sand or wet sawdust in the base of the trap. The angle of the primary plates isn't very critical—30 to 45 deg. will do, though the shallower the angle, the less backscatter you'll get. However, the 45-deg. angle soaks up more of the force of impact, reducing wear at other points. You'll get a slight, harmless (at 5 ft.) powder spatter at any angle, however. When the bullet upsets against the plate, some of the metal is squeezed back in the direction of its flight. In any indoor shooting, where a bullet might strike something other than the backstop or trap, it's a good idea to wear glasses as a safety extra.

For frequent, heavy shooting, the side, top and bottom lining plates are a good idea, since splattering metal will wear the wood walls in time. Lining "plates" can be very light sheet metal of any kind. The 20-ga. steel used in the pilot

model would last a lifetime. Heavy plate pays off on the louvered deflectors and the protective plate over the built-in lights.

It's important to make sure that each primary plate overlaps those above and below it enough that, no matter from what position you're firing, you can't see the backplate. (It's best to paint the backplate light grey to be sure you can see it if you work into a dangerous position.)

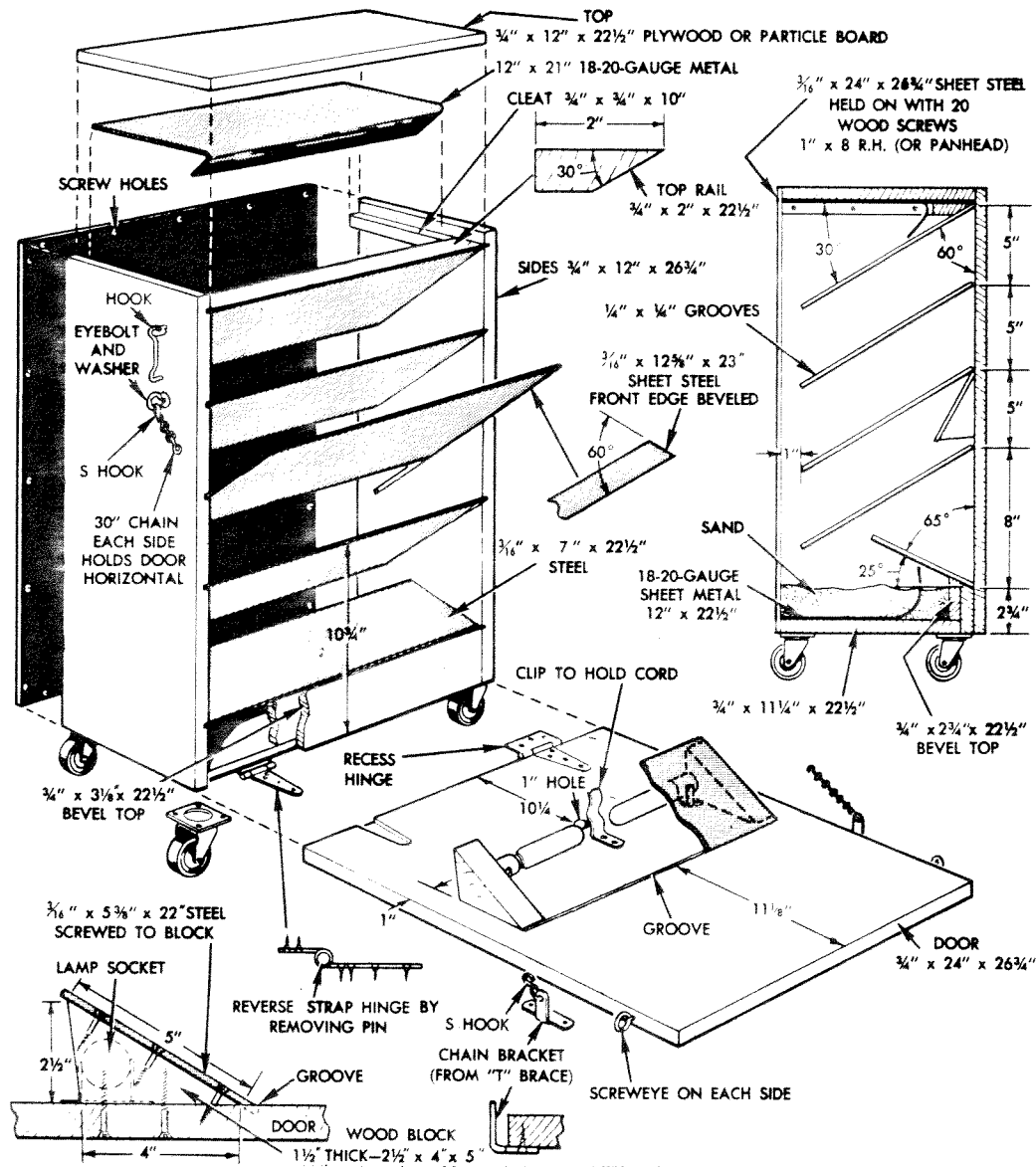
Mr. Nikoden's basic design holds, no matter how big—or small—you build a venetian-blind bullet trap. It could be 6 in. square or 6 ft. square. About the only limiting factor would be its weight—it must be heavy enough to stay put under bullet impacts and light enough to be somewhat portable, though the latter isn't important if you have space to spare.

The paper target (another inexpensive item that costs about a penny) is easily attached by bending it over the leading edge of one of the primary plates, using masking tape to anchor it to the reverse side. Or a wire can be run across the face of the trap, passing through the coiled springs of two clamp-type clothespins, which in turn hold the target. Either way, there's nothing to deflect a bullet.

With the trap 30 in. tall (depending on your choice of targets), there is no reason to elevate it for shooting in the standing position. With smaller traps this may be necessary; it's an easy matter to set it on a box or table, or to hang the whole trap from the ceiling beams on chains.

Caution: The trap won't do for BBs. They don't slide—they bounce. They not only tend to leave the trap, but flatten themselves out of re-usability. Better to use a soft backstop.

See also: ammunition: chronograph; gun cabinet; marksmanship; shotguns.



Exploded plan, above, shows the details of construction of this particular trap, but sizes can vary to fit the...