

Target Scoring Tutorial For The Greater Boston Pistol League

Doug White
Ver. 2.0, October 14, 2012

Introduction: The basics of scoring a target as set forth by the NRA are pretty straightforward. However, there are a lot of practical problems that come up that this tutorial will cover in more detail. In addition, the process of scoring in the GBPL varies a bit from what is typically done in an NRA match situation. This is mostly for new shooters, but I hope it may include a few useful tricks for some of the old-timers as well.

NRA Rules: A lot of the NRA rules are designed for formal matches, with referees, statistical offices, score cards etc. and a lot of the material doesn't apply to the way the GBPL is run. Section 14 of the NRA rules covers scoring, and can be found on-line at:
<http://www.nrahq.org/compete/RuleBooks/Pistol/pistol-book.pdf>

GBPL Rules: The GBPL basically follows the NRA rules except for who gets to use scoring gauges and how disputes are handled. Most of the information that affects scoring is contained in the rules (<http://www.gbpl.org/pages/rules.html>), but a few sections in the bylaws also apply (<http://www.gbpl.org/pages/bylaws.html>).

Scoring gauges: In the GBPL, officially designated scorers & checkers are free to use scoring gauges (plugs) whenever they like. Under NRA rules, the use of plugs is limited to match officials.

Disputes: "If the scorers cannot agree on the score of a target, it shall be submitted to the team Captains for scoring without disclosing the identity of the shooter or the team. The decision of the team Captains will be final."

There are also a couple of sections of the Bylaws that affect scoring:

Sec. 13 - Only one (1) dummy score may be used by a team at any single match. The dummy score shall be the lowest counting score used for the team total by either team minus five (5) points.

Sec. 14 - The official NRA scoring plug (Rig plug with spring) is the official league scoring plug and must be used properly. Plugged shots shall be witnessed and confirmed by the opposition before removal of the plug.

HOW THINGS REALLY WORK

There's a lot that goes on in the GBPL that has evolved over decades, and isn't really written down formally anywhere. What follows is NOT official GBPL policies, just my observations of how things operate from shooting in the League for roughly 30 years.

A Note to Shooters: You can make the lives of the scorers & checkers much easier if you clearly mark the top of the target back LEGIBLY with your team name, your name (with initials or first name if you have any family members shooting on your team) and the target type (S for slow, T for timed, R for rapid). This should be done in one line across the top so that your name & team won't be visible with the top inch or so of the target folded over backward. This allows checking the

back of the target for doubles & missing shots without revealing anything that might be considered prejudicial to the scorers, checkers or team Captains.

General Procedures: After the first relay, both teams should assign at least one person (preferably two) to help with scoring. Scoring is typically done in pairs, with one person from one team scoring, and a person from the other team checking. If two pairs are available, it's nice (but not essential) to have each team provide one scorer & one checker. Newer shooters sometimes feel uncomfortable scoring, and prefer to check, so as long as a pair agrees on who does what, that's fine.

During the scoring process, the scorer should discuss any close judgments, plugged shots, possible doubles, missing shots etc. with the checker. Any decisions should be marked by the scorer (9 hits, an arrow indicating if a shot was in or out, x 2 for a double etc.) before the score is marked down. This way the checker won't have to try to remember what was decided, and can focus on checking the shot values and total score. Figure 1 shows a heavily annotated target with examples of the sort of notes a checker loves to see. You don't have to mark any obvious shots, just the ones that might require any sort of judgment call.

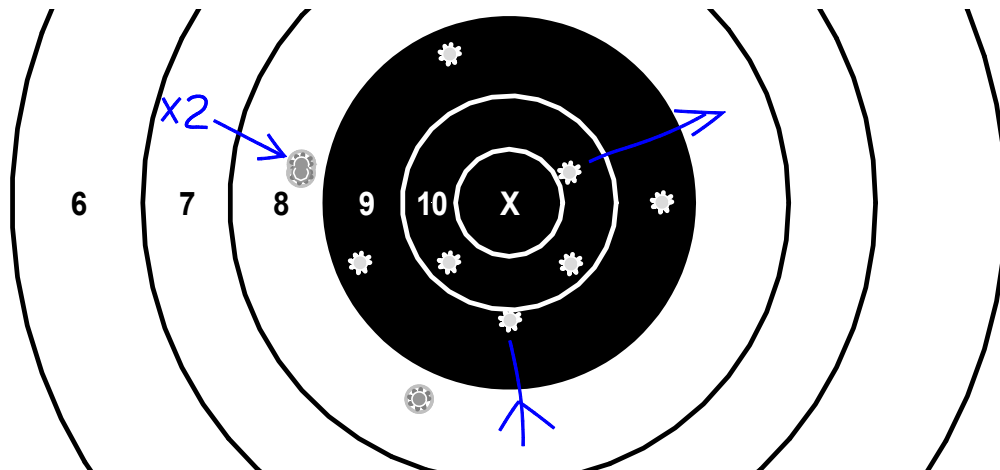


Figure 1: Target annotations for a 'double,' a shot that 'plugged' in & one that was out.

If there is any disagreement on how to score a target, it should be set aside for the Captains to argue over. This is different from both the scorer and the checker deciding that something is too close to call. If both decide "Gee, it's really close but it's too shot up to say for sure," the benefit of the doubt goes to the shooter. Targets should only be sent to the Captains when one person is convinced a shot is out, missing etc., and the other person feels certain that the opposite is true. There's no point in getting in a heated argument over a target, let the team Captains fight it out. League rules state that once a target has been scored & checked, the score is final, so you want to be comfortable with the results. Remember, good or bad, it could be one of your team's targets.

Once any issues have been settled, the scorer should clearly mark the target with the score. On a sustained fire (timed or rapid) target, it's important to mark '0 X' even when no X's were fired. This speeds up the process of recording the scores on the score sheet. The checker should verify that the score is correct (even the MIT shooters have trouble adding occasionally), and initial or

circle the score to indicate that it's OK. If the checker doesn't agree with the scorer, it may be the result of a simple math error, or they may have decided that a shot was out that the scorer felt was in. A polite discussion usually sorts things out quickly, but in rare instances the target will get set aside for the Captains. I would guess that 80% of the errors are math, and 20% are the result of uncertainty over which shot the scorer thought was in or out. Once again, annotating any close judgments (plugged or not) will avoid confusion and speed the checking process.

Once the targets are all scored, they can be entered onto the score sheet. It's fastest if one person reads the scores and another person enters them. The person entering the scores needs to know the team, name, target and score, roughly in that order. If you are reading off the scores, it's faster if you flip the entire stack over so you can read the team name, shooter's name & target type off first. A simple "Woburn, Smith, Rapid, 92 with 3 X's" will keep things moving along. Try not to rush the person writing the scores down by being too speedy. It's traditional to put a small rip in the side of a target once it's been entered on the score sheet just to make sure it doesn't get mixed up with the unrecorded targets.

If you are recording the scores, check to see if either team has family members shooting before you start entering scores. You may have to be careful to make sure the person reading the targets includes first names or initials. It can be very messy to sort out after the fact if people's scores get mixed up this way. Sustained fire scores are typically entered as '94-3' to indicate the X count. Once all three targets have been entered, you can add up the totals and enter them into 2nd column from the right. Be sure to include the X count.

Scoring: The actual mechanics of scoring is a bit like solving a puzzle. Every shot fired went someplace, and did or did not hit a particular scoring value. It's your job to figure out (as best you can) where they went. There are some tools and techniques that can help in your quest, and that's what we'll discuss here.

The **FIRST** thing you should do is count up the shots and make sure that you have located all of them. Typically this is 10 shots, but if someone had an alibi, there could be as many as 14. If you can find them all, then you can proceed with scoring. If one or more shots appear to be missing, you will have to use the techniques under 'Not enough holes!' (see below) to try and figure out what happened.

Although most folks reading this are probably well aware of the basic rule, I'll reiterate it here (from the NRA Rule Book): "A shot hole, the lead edge of which comes in contact with the outside of the bullseye or scoring rings of a target, is given the highest value." Pretty cryptic, isn't it? Basically, if a bullet just touched the outside of a scoring ring (say the 8 / 9 ring), the shot will count as the higher value (in this case, a 9). They don't tell you how to score a shot where another blew away the scoring ring, how to find a double, and other nasty cases that you will run into in the real world. Note! The hole made in the paper is a good bit smaller than the actual bullet, and depending on various factors, the 'lead edge' (the grey ring left by the bullet passing through the paper) may not be quite as big as the actual outside diameter of the bullet either. The lead edge is also almost impossible to see if the shot is in the black. That's why they've developed various tools to determine the close ones.

Tools: Figure 2 shows a collection of gadgets that can be used in the scoring process. There's a list of places to get them at the end of this document.

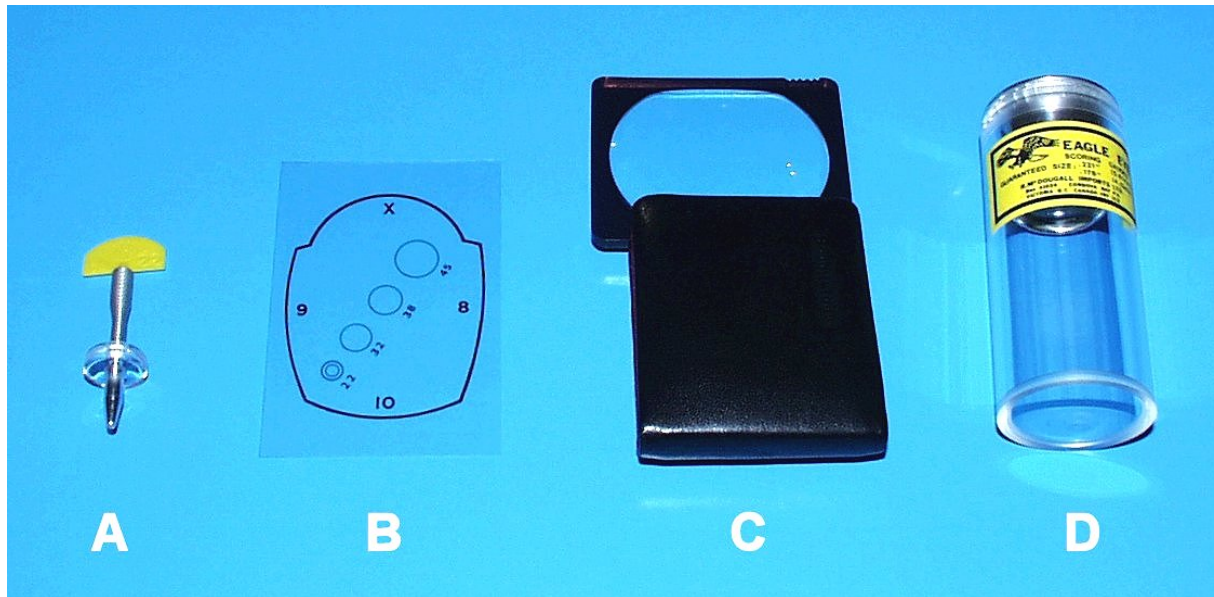


Figure 2: Scoring Aids

A) Scoring Gauge (“Plug”), B) Overlay, C) Magnifier, D) Magnifying Overlay

Scoring Gauge: The most important tool is the official scoring gauge (“plug”). You should make sure someone has at least one plug handy when you sit down to score. The other gadgets will help, but it’s almost impossible to score a match fairly without a plug. The plug has a pin that goes into the shot hole, with a rim exactly the diameter of a bullet. Using the built in magnifier, you can accurately tell if a bullet just touched a scoring ring, at least if it’s an isolated shot with no other shots nearby. The plug has a spring handle, which is designed to prevent “pushing” the shot hole in any particular direction when you insert it. The target should be supported from the back, near the shot, and the plug inserted gently into the hole until the bottom of the magnifier is against the paper. To check the result, look down through the magnifier from the side (see Figure 3). If the metal rim of the gauge just touches the line, the shot is “in” & counts as the higher value. The plug works best on shots in the black, where you can look for a thin line of black between the rim of the plug and the scoring ring. If you can see any black, the shot is “out” and counts as the lower value. You can do this with shots in the white as well, but the contrast between the aluminum plug & the white paper make it a bit harder to tell at times. The lighting in many clubs is less than ideal, and you may have to hold the target up & turn it around a bit to get a good view of what’s going on. Using a separate magnifier can also help, especially if your eyes are tired or not as sharp as they once were. Squinting is perfectly acceptable. Remember, if a shot is close enough to warrant plugging, let the checker see it as well. Ideally, you should agree on a result before removing the plug, and mark the shot with an arrow pointing whether it was in or out (see Figure 1). In general, a shot should only have a plug inserted once. The place where this becomes a problem is if you and the scorer or checker disagree and you need to refer the target to the Captains. It’s difficult to set a target aside with a plug in it without messing up the result, and you will probably need the plug for other targets as well. In such cases, you don’t have much choice but to pull the plug out & forge ahead.

NOTE: if nobody brought a plug, an unfired round is close to the official NRA size for a plug (0.2225" - 0.2240"). Don’t use a fired case, it’s expanded some in the chamber and can be 0.01” or more oversized.

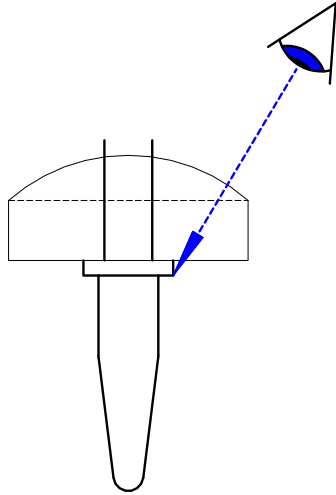


Fig. 3: How to use a scoring gauge (“plug”)

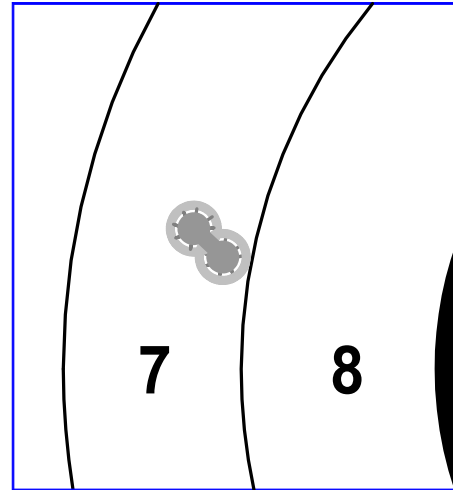


Fig. 4: Two shots too close to use a plug

This is all well & good if the shot is away from other shots, but there are plenty of cases where you can’t use a plug because another shot touches the one you are interested in. If you insert a plug into a shot like the one shown in Figure 4, the tear between the adjacent shot will prevent the plug from centering itself in the hole, and you won’t get an accurate indication. This is where an overlay comes in handy.

Overlays: The standard overlay is small clear plastic sheet that has (amongst other features) a pair of concentric rings for scoring .22 shots. The outer ring is .22 inches in diameter, and the inner ring is close to the size of the hole made in a target by a .22 bullet. By placing the rings over a shot (even one that’s partially torn away) it’s possible to center the rings over the hole and get a fairly accurate idea of whether a shot was in or out. This isn’t as exact as a plug, because there is a bit of judgment involved in centering the overlay rings over the hole. Once again, good light and a magnifier can help. The magnifying overlay shown in Figure 2D merely combines the two. Figure 5 shows what the target from Figure 4 looks like with an overlay in place.

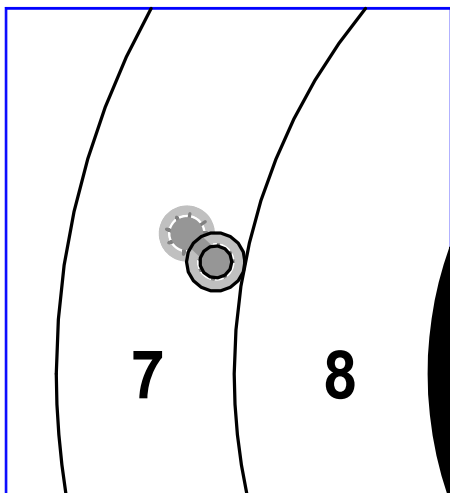


Fig. 5: Using an overlay on a shot that is partially torn away

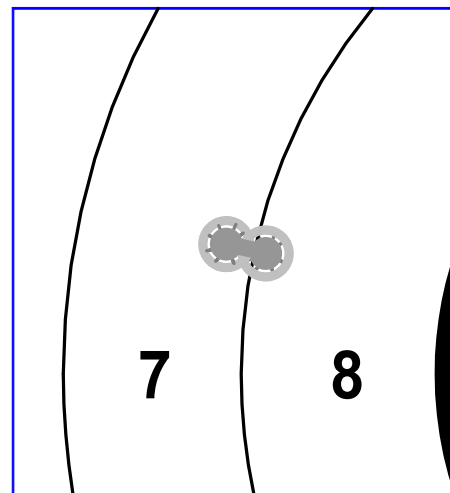


Fig. 6: Target with the scoring line shot away.

The next nasty case is when one shot has removed a part of the scoring ring that a second shot may be touching. This is illustrated in Figure 6. You can't use a plug, and using an overlay will show where the shot went, but not if it touched the line of the next higher point. In this case, the trick is get another target and place it under the target you are scoring. It may take a little adjusting, but you should be able to slide the bottom target around until the scoring ring lines up exactly with the ring that's been shot away. Now you have something that you can examine with an overlay to see if the line was touched by the outer most shot. Once you think you have everything lined up, make sure your checker agrees with your diagnosis before you finish scoring the target.

Not Enough Holes!: This is where scoring becomes a pain in the neck. Sometimes there will be 9 holes with an obvious double and you can score it without much difficulty. Other times no amount of eyeballing the front of the target will turn up an obvious double and more subtle means of examination are required. Finding the missing shot (or convincing yourself and the checker there isn't one) is the hardest part of scoring, but there are several techniques you can use. In the end, it usually ends up as a judgment call. If it looks tough, get your checker involved in the process. You can even ask another scorer or checker for an opinion.

- 1) CAREFULLY examine the front of the target. A rapid fire target with the shots spread all over is much more likely to have a miss (or two) than a slow fire target with all the 9 visible shots inside the 8-ring. Study a couple of shots that are well separated from the others to get an idea of what a 'normal' single hole looks like, and then study the rest for anything that looks a little different. Look for small lead marks on the edge of the paper from a near miss, or a shot cleverly hiding in the middle of the NRA logo.
- 2) CAREFULLY examine the back of the target. To do this without revealing who's target it is, fold over the top inch or so and crease it flat. This should hide the shooter's name & team and you can proceed with your research. Count up the shots again. Sometimes the scoring rings & text on the front can distract you enough that a shot can be missed. It is frequently easier to spot a slightly oversized hole from the back than from the front.
- 3) If you have identified a likely candidate, see if the checker agrees. If so, you're ready to mark the shot (see Figure 1) and move on.
- 4) As a last resort, you can 'drop a plug on it.' This is a one-time procedure, because performing the test messes up the hole so that a subsequent attempt may be invalid. To do this test, you need to identify a shot that you (and the checker, who should be watching, or even holding the target for you) are certain is a single shot. You also need to identify one or two candidates for the double. The process consists of dangling a scoring plug centered over a hole, with the tip inside the hole, and then dropping the plug. Depending on the target paper & other factors, the plug will typically only fall part way through a single shot hole, and then tip over. If a shot hole IS a double (and you are lucky) the plug will either fall noticeably further into the hole, or ideally, drop cleanly all the way into the target. Sometimes you can 'feel' the difference between a single shot hole and a double as you slide the plug in. This is difficult to have a checker verify, so it's not recommended. As an absolute last ditch attempt to find a missing shot after you've stuffed a plug into a hole, there is one remaining trick you can try. You can press down on the target to flatten the paper immediately surrounding a single shot & possible double, and then examine both the size of the remaining holes, or you can try

dropping a plug again. If you aren't comfortable with any of this, I'd stick with visual inspection only & let the team Captains mess with fishing around with a plug.

Alibis: Scoring alibis is usually straightforward. The Range Officer should have clearly marked the total number of shots fired at the target, something like '13 shot Alibi.' The rule is to score the lowest 10 shots fired, which isn't necessarily the lowest 10 shots on the paper. The first step is to carefully count the number of shots. If you don't come up with the correct number, there may be a double, some misses, or there may have been a double alibi and the shooter never got them all off. One technique to avoid confusion is to draw an X through the high shots that won't count.

Shot Clusters ('close groups'): If a competitor fires a tight group of three or more shots that produce a hole large enough for a shot to pass through without touching the paper, any missing shots are assumed to have gone through the hole. If the hole straddles a scoring ring, the non-visible shot(s) are scored with the higher value.

Weird Holes: The vast majority of targets you'll score will all have pretty boring little round holes in them. Depending on the pistol, ammunition, target brand (or age), you can sometimes get some odd holes. If the target paper is too brittle or stringy, a shot can tear out a larger hole than normal. If the holes look slightly oversized, a plug will still give a good indication of shot value. If the paper is torn up a lot, an overlay is usually the best tool for the job.

One of the most common problems you can encounter are 'keyholed' shots. These are bullets that aren't stabilized properly, and they enter the target slightly (or not so slightly) sideways. This can be the result of a mismatch between the ammunition and a particular pistol, a damaged barrel, or bad ammo. Figure 7 shows a photo of a keyholed shot. Typically, the nose of the bullet will leave a leaded edge on one side of the hole, but the back of the bullet will rip the paper with uneven leading. To score a keyholed shot, 'the higher value is awarded if the leaded edge of the bullet hole touches the scoring ring of higher value, even though the hole is elongated to the bullet's length rather than being a circle of the bullet's diameter.' Once again, an overlay is the best gauge to use when scoring these. As you can see, the overlay is centered around the dark leaded edge circle, and not the hole, which is offset. If the shot is in the black and you can't see the leaded edge, you just have to use your best judgment. Once again, if it's really close, the benefit of the doubt goes to the shooter.

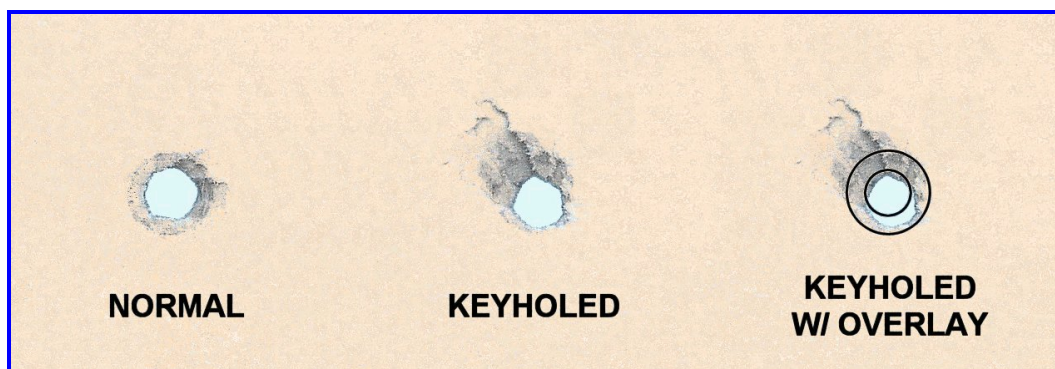


Figure 7: Normal shot, keyholed shot & keyholed shot with overlay

One last thing to be watchful for is that keyholed shots or overly torn target paper can easily make a single shot look like a double. It's very disconcerting to pick up a target that looks like it has 10 doubles on it, but it's worse when it looks like there are only 9 doubles. You then have to use a lot of judgement to decide if it's 9 shots, or one of the keyholes is actually two shots. Fortunately, such targets are very rare.

Adding up The Score: There are a couple of ways of totaling the score on a target. Some clubs have a nice little rubber stamp (see Figure 8) that has a table to fill out. This is very handy and helps reduce errors, but it's slow. A lot depends on how good the shooter was. A target with everything in the black is usually pretty easy to 'subtract down' (as opposed to 'add up') in your head. You just total how many points they didn't get and subtract from 100. For example, a target with a 7, two 8's, three 9's (and four 10's, which you can ignore) is a 90. With very little practice, you can score good targets in a matter of seconds. Unfortunately, not everyone in the League shoots that well, and there are a lot of targets with misses, 4's etc. on them. If a target looks like it's going to add up to less than 50, summing from zero is probably quicker & more accurate than subtracting. Another way to tell what tactic to use is to see how many shots you don't have to deal with using each technique. For example, if a target has four 10's, there are only six shots you have to worry about with the subtraction method. Conversely, a target with four misses has only six shots you have to add up. Neither approach is 'right,' you just have to pick the one that gives you the best accuracy while keeping things moving. If you are just starting out or your math is a little rusty, you can also draw your own little table on a target if a stamp isn't available.

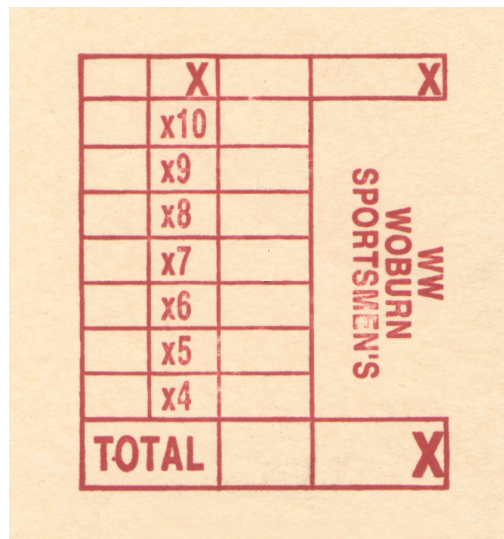


Figure 8: Example of rubber-stamp target scoring chart

Sources: Scoring plugs should be available at any good gun shop for around \$6. The target stamp can be made up at any decent stationery store, where you can also typically get magnifiers. The scoring stamp example above came from Staples. The NRA also has overlays, and they can be purchased from several competition shooting suppliers typically in sets of two for \$4.50. The magnifying overlays (~\$23) are only available from a few places. Champions Choice (<http://www.champchoice.com/>) and Champion Shooter's Supply (<http://www.championshooters.com>) carry them as well as plugs. You can get everything but a stamp from Champions Choice, including plain magnifiers.