

The Nuts and Bolts of Effective Stage Design, Part 1

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We all love to shoot matches with great stages that test both our physical and mental abilities; but where do those stages come from? Typically, every club relies on a small cadre of folks, all too often just one or two people, to come up with the stages that will be shot at the each match. But it does not have to be that way. Stage design can be a very enjoyable and fulfilling activity and doing it right is not really that difficult to do correctly. This is the first in a series of articles that go over some of the basics, the “Nuts and Bolts” if you will, of stage design. We will begin by looking at the rules that affect and constrain our designs.

While we will discuss the various “Level 1 exceptions” we will not generally utilize these in the designs discussed here. The Level 1 exceptions are provided for clubs that are restricted by equipment availability (e.g. lack of sufficient wall sections or an indoor range where walls are not allowed) and/or facilities limitations (e.g. shooting indoors down shooting lanes only perpendicular to the bullet trap on the back wall) to allow them to hold sanctioned Level 1 matches. (See Arthur Brown’s article in this issue for more on these Level1 exceptions) For many clubs, especially newer clubs, these exceptions are the difference between holding matches or not, especially during the winter. It is generally better to design to the higher standard and then invoke an exception or two in order to shoot the stage under restrictions.

To start things off let’s examine why effective stage design matters.

Ever shown up at a match and there are no stage diagrams to build to per se? Just someone shouting directions and dragging props around sprinkling targets around in a random fashion to match whatever design is spontaneously erupting in their head. Or maybe there was a stage design diagram but it looked to have been drawn hastily on the back of a placemat or napkin from the place the designer ate breakfast on the way to the match. There is no Written Stage Briefing (as required by 3.2) and the score sheet is the old “universal score sheet”. Chances are really good that it is going to take a lot of work on the part of the setup crew, stage CRO and the Range Master to make sure the stage is safe and legal. Fun? Challenging? Who knows!

Neither of these scenarios, and so many variations on these themes, produces a safe, fun, equitable and legal match month after month. It can also be rather stressful leading to match chaos, endless rules discussions/challenges, match director burn-out, or worse. Stage design by this method tends to devolve into a “one trick pony” type match where every stage is just a minor variation on the theme of all the other stages. This becomes disheartening and lacks the challenge most shooters are looking for; match attendance drops precipitously and the club may even fold. None of this is good for the sport.

Larger matches (i.e. Level 2 and Level 3 matches) don’t generally suffer from these maladies because a lot of time and effort goes into designing the stages, debugging them, ensuring they are legal and yet are still exciting for the shooters even before the first wall section is stood up. Yes, it’s true...quality stage design takes time and effort on the part of the designer. It also takes practice to keep these skills

sharp. Ideally, stages for a match are done by a team with at least one designer and one or more other folks looking them over for problems.

The good news is that there are always lots of clubs looking for stages to run and you should be able to find a ready audience to test your end product in the crucible of competition. Not only does actually using your stage in a match give you a sense of pride and allow you to contribute to the sport in another way; it also is THE best teacher about stage design.

Designing stages is also a good exercise for the shooter side of your brain because by designing stages you actually get better at breaking down other designer's stages at matches allowing you to find the best way for you to shoot the stage.

Can anyone design **GREAT** stages? Well, probably not because not all of us have that special creative, some might say evil, genius from which great stage ideas spring forth. But if you are reasonably creative, are familiar with the rulebook and the basics of our sport and have the desire to design stages you **CAN** design very good, legal, quality stages. The more stages you design, the better you will become. Like just about anything else, practice is the key to developing and keeping the necessary skills.

So let's take a look at some of the basic elements we are required to observe as we design our stages:

Safety, Quality and Balance

Safety should always be our primary consideration throughout our sport and this is especially true with stage design per rule 1.1.1.

Quality is not only a good idea with regard to our stages but it is actually required by 1.1.2. Worth special note is the last sentence: "Courses of fire must be designed primarily to test a competitor's USPSA shooting skills, not their physical abilities." Ever been to a match filled with "track meet" stages requiring long runs without any shooting? It can actually be argued that these stages are not even legal although how much is too much is entirely subjective.

Balance refers to the three legged stool of USPSA shooting "Diligentia, Vis, Celeritas"- Accuracy, Power and Speed. The goal for balance is that the entire match, when taken as a whole, is balanced. Certain types of individual stages tend by their very nature to be unbalanced and that is fine as long as the balance is regained for the whole match by other stages.

Freestyle!

"In our sport, shooting is freestyle; stage design is not" – George Jones NROI RMI

Rule 1.1.5 is the #1 rule that is broken by every beginning (and many veteran) stage designers. Remember, the goal here is to create a puzzle or problem for the shooter to solve. The more possible solutions there are to the puzzle the better the stage is likely to be given proper development. Start in Box A, shoot T1 – T3, move to Box B, shoot T4 – T6, etc. is NOT freestyle.

So the first thing you really need to do is to forget about the standard three foot by three foot shooting boxes. Think of them as shooting areas that can be just about any size and shape. Yes, some types of stages (e.g. Standards) quite often make use of a standard 3x3 shooting box to define the shooting locations; but for the most part it is a better practice to not start your design with a 3x3 box and build from there.

Exceptions to the Freestyle rule

There are five primary exceptions to the Freestyle rule. The first (1.1.5.1) is an exception for Level 1 matches to allow for “box to box” type courses of fire. As mentioned earlier this exception exists to allow clubs working within limitations (e.g. shooting indoors) to hold sanctioned matches. If you are designing courses for a club that has lots of walls and other props without restrictions such as needing to shoot down specific shooting lanes of an indoor range then designing a box to box stage is entirely unnecessary. And don’t just move those shooting boxes up on to the walls and call them shooting ports. That still isn’t really freestyle. Let’s look at some examples of what is essentially the very same stage designed three ways. **Figure 1a** shows a stage that one might design as a box to box stage. Then **figure 1b** moves those boxes up to the walls and calls them shooting ports and finally **figure 1c** shows the stage built as a freestyle stage. See the differences? Setup requirements really aren’t that drastically different but shooting the stage is likely to be very different!

The second (1.1.5.2) and third (1.1.5.3) allow our Standards exercises and Classifiers to require reloads and specify strong hand/weak hand. Note that these exceptions apply only to Standards as defined by 1.2.2.1 and Classifiers as defined by 1.2.2.2.

The fourth exception (1.1.5.4) and fifth (1.1.5.5) allow for strong hand only or weak hand only in medium and long courses. It is important to note the restrictions in these two rules regarding the number of shots allowed and that unencumbered movement and freestyle engagement between requiring transition between strong hand/weak hand. This restriction is quite often missed by novice and even some very experienced course designers. The primary reason for this is safety. Note that USPSA does not allow for requiring strong hand or weak hand reloading or clearance of jams. This did exist long, long ago in some of our foundation sports so you may hear some folks talking about doing this and the various techniques involved in doing so including hooking of rear sights over the shooters belt to rack the slide, grasping the handgun between the knees to reload a magazine, etc. By and large, these techniques are useful in the realm of self-defense but not safe enough to allow in our sport.

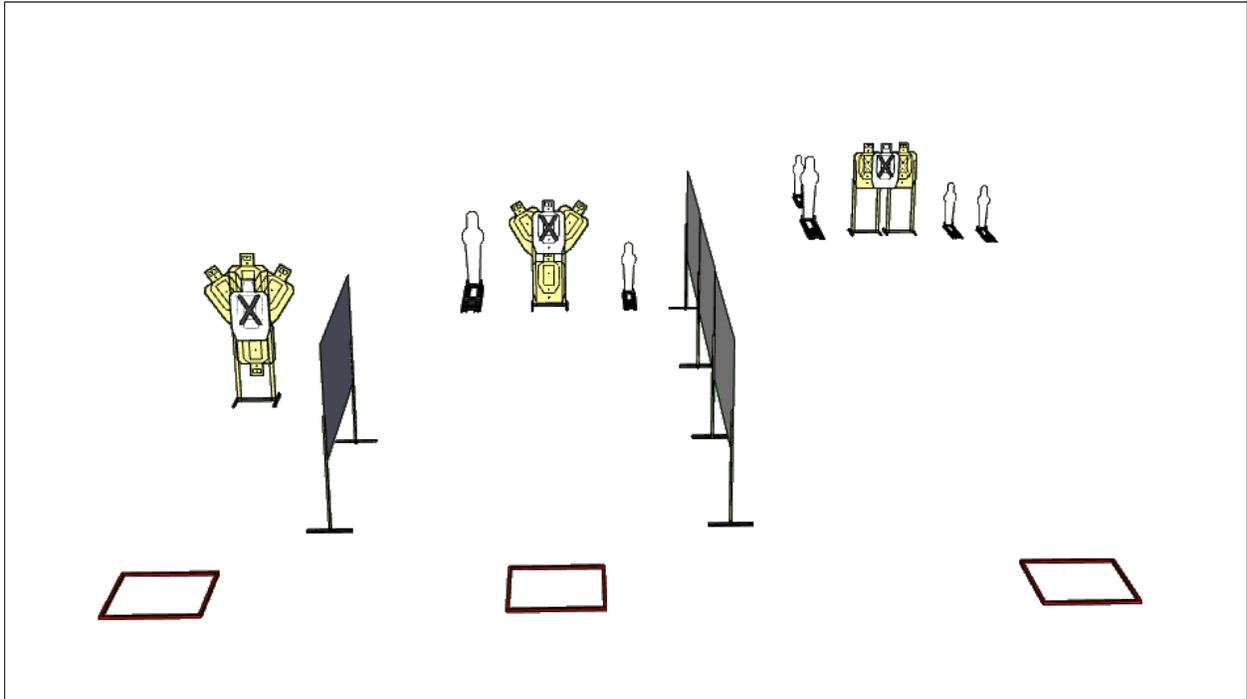
Rounds per View

Another rule that causes consternation among stage designers and tends to lead to the lack of freestyle possibilities in stage design is the Rounds per Location or View rule. Rules under 1.2.1 limit the required rounds per view or location to eight. Note the word *required* in this rule. A perfectly legal stage might have 15 paper targets (30 rounds) available from one location or view and 1 target (2 rounds) hidden behind an obstacle (e.g. wall) requiring the shooter to complete the movement through the course of fire. While this is legal to the letter of the rule it presents very little challenge and really isn’t a test of skill.

An excellent way to preserve freestyle and increase challenge is to have some of the targets in your course of fire available from multiple locations. This presents the shooter with a couple challenges: 1) planning which targets to take from which locations and where to perform reloads, and 2) keeping to the plan to avoid not wasting time and ammo re-engaging a target. This can also provide shooters in different divisions the opportunity to build a plan that best fits their division. For instance, **figure 2** shows a course of fire that can be shot multiple ways. Think about how you would shoot this course of fire as an Open shooter with a 28+ round magazine, then a Limited Shooter with a 20 round magazine and finally as a Single Stack shooter with 8 round magazines. See the difference?

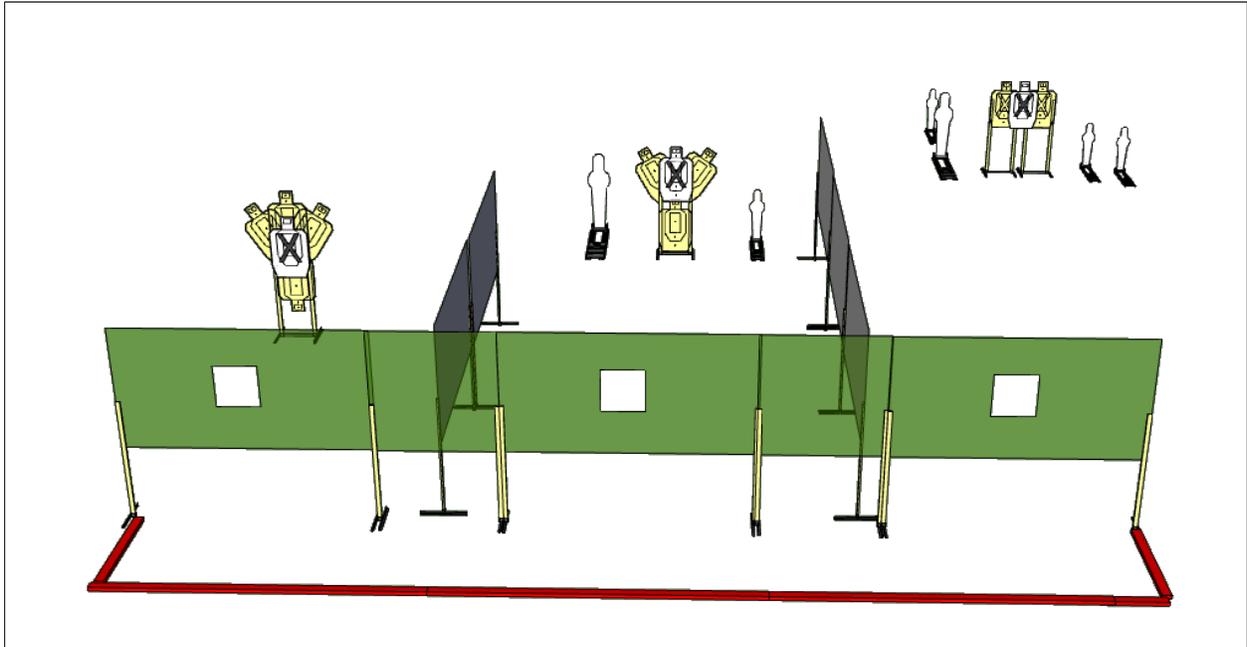
Well, that's enough for now. Next time we will get into more rules that affect our stage designs from a construction standpoint. Until then my best advice for anyone that wants to try stage design is just to get out there and do it! It can be very instructive to design a course of fire, build it and then watch as your club's shooters solve the puzzle you have presented them with. If someone finds a loophole in your grand plan don't take it personally! This should always be viewed as a learning opportunity. At the end of the match sit down with your design and, if you can, the shooters that burned it down, and figure out how you can tighten it up to increase the complexity of the puzzle and therefore the shooting challenge. Stage design, just like shooting, takes a lot of practice and experience to become proficient and maintain that proficiency.

Figure 1a:



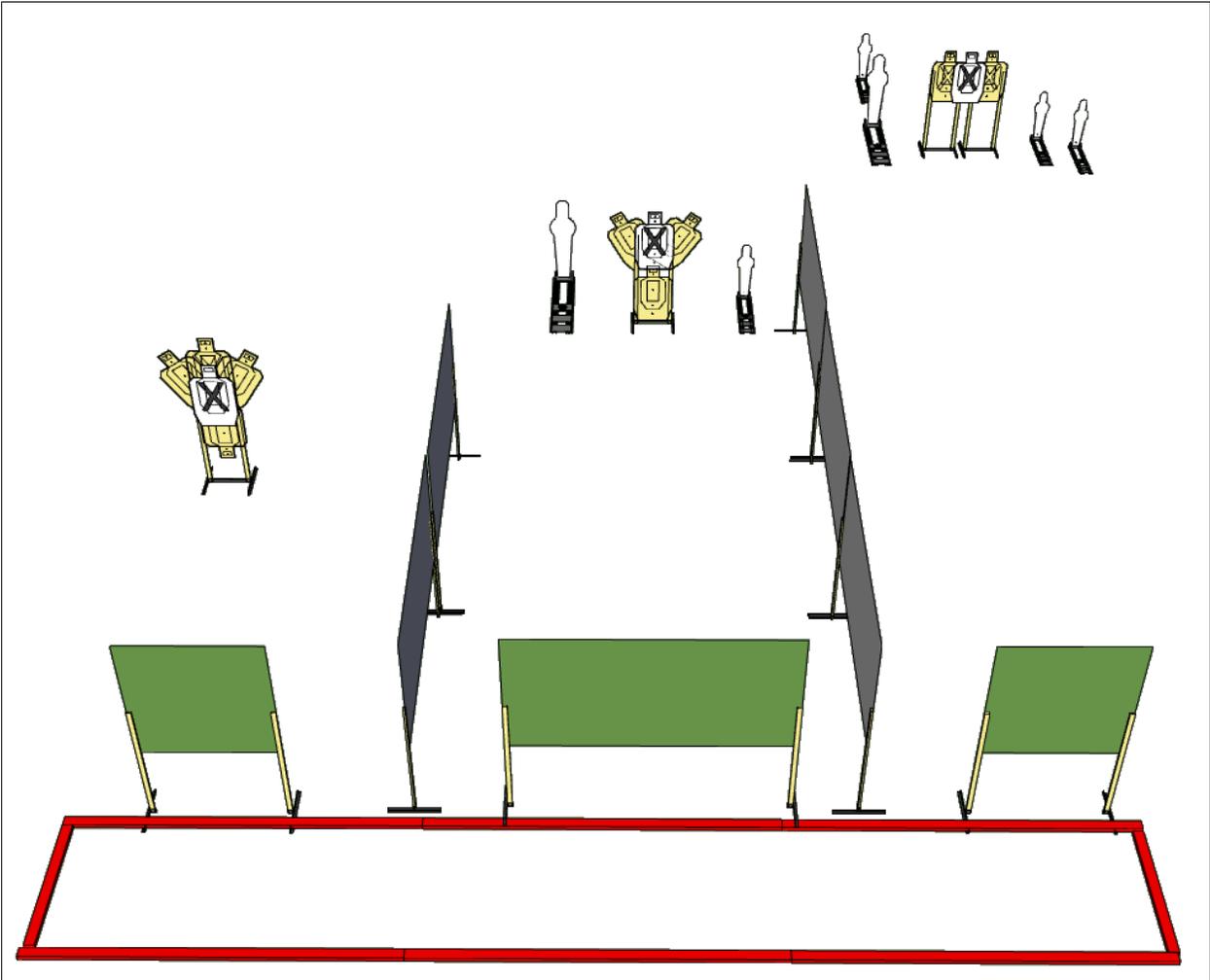
Caption: Box to Box stage. Useful if shooting down prescribed shooting lanes on an indoor range but definitely not freestyle.

Figure 1b:



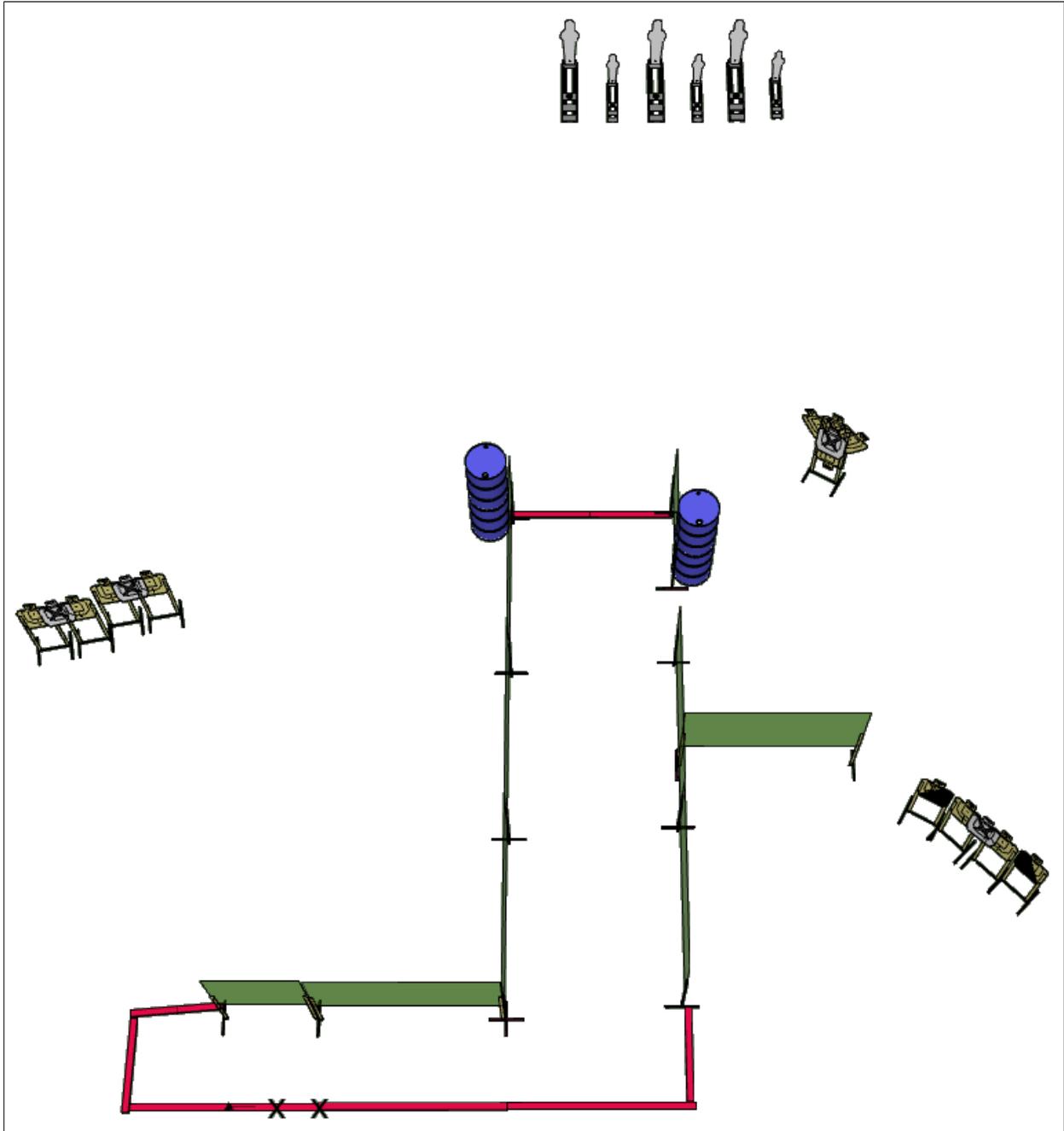
Caption: All we have really done here is move the boxes from the floor to the walls. It is really the very same stage as in 1a with no real perceptible change to the shooting challenge.

Figured 1c:



Caption: Now every array can be engaged from at least two positions and portions of the middle array are available from left “lane” and portions of the right array are available from the center “lane”. Now we have a puzzle for the shooter to solve!

Figure 2:



Caption: How would you shoot this stage as an Open vs. Limited vs. Single Stack shooter? Note that the left most three poppers are available from the location left of the start position (X's).