

## Suggested Chronograph Stage Procedure

The detailed chronograph instructions are found in Appendix C2 of the current USPSA Competition Rules. Please read this Appendix and be familiar with it. Below is a suggested task list for each of the stage staff. This is only a suggestion, as each chrono crew will need to figure out a process that is the most efficient for them, but also fulfills the requirements of App. C2. The process also needs to be as consistent as possible for each shooter. Each day of the match, the chronographs need to be verified with the firearm and calibration ammo from the RM. The scales should also be checked with test weights.

**Equipment:** It is highly recommended for matches to run dual chronographs in case one chronograph breaks. If one chronograph breaks, then the second chronograph can be used alone for the remainder of the match.

Traditional chronographs need to be in a chrono box with proper lights (don't forget the power). Make sure to use lights that are recommended by the chronograph manufacturer and test the lights before the match. Radar type chronographs are allowed, and don't need a box, but do need some pre-testing to figure out the best positioning for reliable readings.

The chrono station also needs 1-2 tables and a couple chairs, a scale to weigh pulled bullets, scale to weigh handguns, batteries for scales (if applicable), an official USPSA box and mag gauge, calculator, plenty of pens, a couple bullet pullers (and a large block of wood to hit it on), and shade/wind breaks around the RO work area. Chrono will also need the current version of the [USPSA Production Handgun List](#) (Guns in Production and Carry Optics must be on the list) and the [current rulebook](#) from the USPSA website, USPSA App, or print copies if the range does not have internet access.

**Chrono receipts:** Practiscore can be used to record chronograph stage data. In addition, each shooter/squad will have a carbon copy chrono sheet receipt that needs filled out at the chrono stage (unless the hard copy requirement has been waived, see rule 9.11.2). Receipt sheet templates are available on [nroi.org](#).

**Ammunition Collection:** This can be handled a number of different ways from collecting 8 rounds in a plastic bag labeled for each shooter on the first stage of the match, to having a RO picking up dropped magazines after "Range is Clear" on the stage prior to Chrono, or just asking the shooter to supply rounds when they reach Chrono. Pick one, be consistent.

**CRO:** The CRO will be in charge of the stage and interact with the shooter. The

CRO should have a space on the table where the shooter will place their firearm when directed (use “Make Ready” command). The CRO will inspect the firearm and check the firearm per the division requirements (see [checklist below](#), and App. D1-D8 for details).

The CRO will fire three shots across the chronographs and call out the speeds to the RO, who will record the values in Practiscore. The power factor will be calculated (do not round the numbers) and if the shooter did not make power factor, see steps 37-38 in App. C2. If a shooter does not make the declared power factor, or has illegal equipment, call the RM. The RM will verify the call and will make sure the information is correctly entered into Practiscore.

After the CRO is done with the competitor’s firearm, the CRO will place it back on the table and give the “Unload and Show Clear” command followed by the “If Clear, Hammer Down, Holster” (or appropriate command for PCC and revolver), and then “Range is Clear.”

**RO:** The RO will pull and weigh a bullet for each shooter from the collected ammunition. The RO will also fill out the chrono form in Practiscore with the bullet weight, the velocities that the CRO calls out, and whether the competitor passed the equipment check and made declared power factor. The RO will tap “Review” in Practiscore and record the information from the review screen on the paper receipt, along with their initials and time of day, and then present the tablet and receipt to the shooter who will tap “Approve” and initial the receipt sheet. The shooter/squad will then get the carbon copy of the chrono receipt.

**Rechecks:** The RM may, at any point during the match require a shooter to return to chrono to be re-checked. In addition, shooters that request a gun change will need to chronograph the new gun (and the previous gun if not already chronographed and it is safe to do so). For this reason, it is important to not tear down and to continue to staff the chrono station until released by the RM.

**WSB:** Below are two example chrono WSBs. Example 1 can be used if chrono is a separate stage and the WSB will be read to the squad like normal when the squad arrives. Example 2 can be used if chrono is paired with a stage. Read the stage WSB and the chrono WSB to the squad at same time and then post the chrono WSB by the chrono station too. This keeps the chrono officer from having to re-read it to every shooter.

## Chronograph Written Stage Briefing Examples

### Example 1

You will be called individually to the chrono table. Please have an empty magazine with you and hand it to the CRO. Leave your firearm holstered or bagged until given "Make Ready." Once the command is given, place the firearm on the table in the designated location, with the slide/bolt locked open. The CRO will then test your ammo and place your firearm back on the table. When instructed by the CRO with the appropriate range commands, you can handle, clear, and holster/bag/flag your firearm.

### Example 2

Stage 4b is an 8 round, potentially match changing, chronograph course. There is one target, and you don't get to shoot it. Your power factor will be determined by a single bullet weight and three bullet velocities.

After you shoot the Stage 4, you will immediately report to chrono. Chrono will be able to use ammo from any mag on your belt and/or person. Leave your handgun holstered or PCC flagged until given "Make Ready." Once the command is given, place the handgun/PCC on the table in the designated location. The CRO will then test your ammo and place your handgun/PCC back on the table. When instructed by the CRO with the appropriate range commands, you can handle, clear, and holster/flag your handgun/PCC.

After the Stage 4 walkthrough, we ask that the last shooter of the squad proceeds to chrono. The last shooter of the squad will chrono before he/she shoots the stage.

After you are done at chrono, please return and help your squad finish the stage.

## Chrono Division Checklist

### Open Division (App. D1)

Minimum power factor for major	165
Minimum power factor for minor	125
Minimum bullet weight	112 grains for Major PF
Maximum magazine length	6.742" (171.25 mm)

### Limited and Limited-10 Divisions (App. D2, D3)

Minimum power factor for major	165
Minimum power factor for minor	125
Minimum bullet caliber for major	.40 cal / 10 mm
Maximum magazine length	5.561" (141.25 mm) 6.742" (171.25 mm) for single stack guns

### Production Division (App. D4)

Minimum power factor for minor	125
Maximum size handgun and all magazines (revolvers are exempt)	Handgun with empty magazine inserted must fit wholly within USPSA box
Maximum weight	Handgun with empty magazine inserted must be no more than <b>59 oz.</b>

### Single Stack Division (App. D5)

Minimum power factor for major	165
Minimum power factor for minor	125
Minimum bullet caliber for major	.40 cal / 10 mm
Maximum size handgun and all magazines	Handgun with empty magazine inserted must fit wholly within USPSA box
Maximum weight	Handgun with empty magazine inserted must be no more than <b>45 oz.</b>

### **Revolver Division (App. D6)**

Minimum power factor for major	165
Minimum power factor for minor	125
Minimum bullet caliber for major	No

### **Carry Optics Division (App. D7)**

Minimum power factor for minor	125
Maximum magazine length	5.561" (141.25 mm)
Maximum weight	Handgun with optic and empty magazine inserted must be no more than <b>59 oz.</b>

### **Pistol Caliber Carbine Division (App. D8)**

Minimum power factor for minor	125
Maximum velocity	1600 FPS