

BASICS OF ROUND STAR ROLLING USING THE "ROLLING PAN" METHOD--101

This seminar is meant to demonstrate for the novice (and more experienced) fireworks hobbyist, the method I've learned over time of how to roll round stars, the main part of a round fireworks shell, using aluminum or stainless steel round mixing bowls. I will not go into real great detail, as that would probably take a full '8 weeks course'! I will try to show the general procedure that I use, including safety, materials, tools and equipment, the "Do's and Don'ts", and some basic star formulas that are easier to learn with. It is then up to the hobbyist to use this information in his/her endeavor to roll useable stars for shells.

WARNING—Rolling stars is one of the most difficult things to learn in this hobby. I have been doing it for many, many years, and I'll tell you right out—it doesn't come without much frustration and failures. It takes a lot of patience and fortitude!

There are many problems that can arise, and tricks to learn to solve them, and they only come from experience. There will be 'ruined' batches in the beginning. But with practice and determination you will eventually start being able to roll good stars. Just try not to get too discouraged as you learn.

STAR TYPES

There are basically four types of stars used in all fireworks devices.

- 1.) **CUT stars.** These are made by dampening the formula with a water/alcohol mixture, kneading the mix into a dough-like consistency that is molded into a brick shape, and then 'sliced and diced'—cut—into cubes of the appropriate size. This is probably the easiest star to make. But it's drawbacks are—they are limited to only one color/effect, and they can be difficult to stack in a round shell hemi set.
- 2.) **PRESSED or PUMPED stars.** These are made using specially made plate sets that have matched cavities and plungers to eject the compacted stars from the cavities. Pumped stars are basically the same, except they are made one at a time using a tool called a "star pump". These stars are fairly easy to manufacture also. But they have the same drawbacks as cut stars—limited to only one color/effect, and they can be difficult to stack in a round shell hemi set.
- 3.) **MICRO stars.** These are simply small 'seed' stars used as effects in most Class C consumer fireworks. They are a type of round or cut star, usually 1/4" and smaller in diameter, and are made in mass quantities by the Chinese.
4. **ROUND stars.** These are the most difficult stars to make, but are the most useful and rewarding stars. They are the gist of round, Oriental-type shells. Once the process is mastered, it does not take long to produce larger quantities of stars. And by using different star compositions during the rolling process, it is possible to make 'color-changing' stars. They are also much easier to 'stack' in the hemis when assembling the shell. They can also be used in cylinder shells and mine-type shells.

SAFETY!

As with all fireworks related procedures, SAFETY is the main objective. Remember, you are working with highly flammable and sometimes, explosive mixtures and solvents. You must always keep this in mind. Here are a few general rules to abide by:

- 1.) Work in a well ventilated area, away from any source of fire or open flames. Preferably work outside, in an open area away from people and buildings, in the shade, and when the breeze is light. If possible have a water hose or fire extinguisher handy.
- 2.) Star compositions contain hazardous chemicals, and the solvents can be hazardous also. Wear the appropriate safety equipment—eye protection, good particle mask, latex gloves, and cotton clothing.
- 3.) Do not let excess star composition accumulate around the area. Clean up any spills immediately. Remove any completed stars from the area immediately. They should be dried in the shade, NOT in direct sunlight.
- 4.) **WHAT IF...?** Always keep a plan in mind, God forbid, should something go wrong. Know what you will do in the instant!

EQUIPMENT

Here is a general list of the equipment you will need to roll stars.

- 1.) Assorted size aluminum or stainless steel round bottomed mixing or wac-type bowls—the type used for tossing salads. You should have two of each size—from 'cereal bowl' size to, say, 8 qt. You should also have one or two sizes in between. The correct size bowl makes it much easier when rolling stars. Any round bottom bowl should work, but mixing bowls work the best. And anything that makes the rolling go easier is well worth it! I don't see them much in stores around here anymore. But 'google' them on the Internet and they are readily available.
- 2.) Condiment shaker—for sprinkling small increments of comp. when starting the star cores.
- 3.) Spray bottle/atomizer, standard size—type used for misting plants. You should also have a small atomizer bottle for misting small amounts of water/alcohol on the small star cores at the beginning.
- 4.) "Surgical Tools"—Butter knife, fork, spoon, and tweezers—used to cull, separate, and break up clumped together cores that form during the beginning of the rolling process.

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