

# Fireworks



*Aerial Shell- "Willow"*

Stop by LeRoy House on New Year's Eve and stay warm until the fireworks at 9. The House opens at 7 pm and there's plenty of parking in our parking lot. Last year folks seemed to enjoy sitting by the fire and playing with the old fashioned games. The crinkinole board will be set up as well as all four skittles' boxes. We'll see who can get high points. If you just want to sit and listen to the music box, it will be set up in the back parlor. Last year, at 9, many of us stood on the front porch and had a great view of the fireworks.

Growing up, I never enjoyed fireworks. I remember driving out Scottsville Road and parking near the old golf driving park to watch fireworks on the Fourth of July, but I always had my hands over my ears. It wasn't until Shelley Stein and I were invited out to Canandaigua to see a fireworks show by Youngs Explosives that I really got interested in fireworks. We were given a "menu" of all the fireworks that were going to be shot off. Then we watched "brocades", "peonies," and "waterfalls" in all sizes and colors. The menu listed a 6 inch, 8 inch, and 10 inch red brocade and the price for each one. Then

there would be a "waterfall" in various sizes and the prices. If you wanted to put together a fireworks show, and had a certain budget, you could take 3 from column one and 4 from column two, and 2 eight inch peonies and 2 six inch peonies - - well you get the idea. Some of the fireworks were imported but many of the special effects were made by Youngs. I have to admit, that's not a vocation I would aspire to.

There is a lot of chemistry to fireworks. The colors are produced by heating metal salts. Sodium nitrate produces yellow. Calcium nitrate produces orange, Barium salts produce green. Purple is produced by a combination of copper and strontium salts. White is produced by aluminum, titanium or magnesium. Blue is produced by copper salts. The colors are dependent on the amount of energy released by each element which is characterized by a particular wavelength. Lower energy salts produce longer wavelength light, in the orange and red spectrum. These salts are mixed with binders and other chemicals and rolled into small clay balls which are placed inside the shell. When these explode they

are called "stars." The shells are propelled into the air by the combustion of black powder, which is a combination of potassium nitrate, charcoal and sulfur. This concoction was said to have been first used in China over 1000 years ago. The fuse carries the flame to the lift charge of black powder. At the same time a delay fuse is ignited that will work it's way up to the shell. If everything goes right, the lift charge will take the shell high into the air, and the delay fuse will ignite the shell when it reaches it's highest point. (I learned that Disney World has tried using compressed air to propel the shells into the air, in an effort to reduce the smoke from the black powder. In fact, Disney is the largest client of the fireworks industry. Apparently, the cost of the compressed air system and other problems, have forced Disney to curtail this process, in all their park, with the exception of Disneyland in California.)



*Aerial Shell- "Dahlia"*

Aerial shells are the most common type of firework. These include a shell filled with "stars" and a cylinder filled with black powder which propels the shell into the air. The most common aerial shell is a "peony." "Chrysanthemums" are like peonies, but the stars leave visible trails. "Dahlias" are like peonies with fewer stars, but the stars are larger and travel further from the shell break before burning out. "Willows are similar" to the chrysanthemum, but have long burning silver or gold stars that produce a weeping willow-like effect.

Diadems are chrysanthemums or peonies with a center cluster of non-moving stars of a contrasting color. Spiders contain a fast-burning tailed star that bursts very hard and propels the stars in a straight line before falling. One of my favorites is a brocade, which gives a spider-like effect, much like fine lace and it is brighter than the willow.



*Comet- "Rockets Red Glare"*

Comets are aerial shells that are ignited and launched into the air and burn with a bright color as they ascend to their maximum height. They do not "burst" or "break," rather they have a tail. Comets are usually used during the playing of the National Anthem - - "rockets red glare."

There are a variety of noises that fireworks produce. A "bang" that sounds like a gunshot is technically called a "report." Some "cackle" or sound like crackling. There are also "hummers." "Whistlers" or screamers are created by burning Benzoate or Salicylate compounds in an on and off mode.

I haven't been able to find out about fireworks early in LeRoy. It will take a lot of reading through the LeRoy Gazette. Perhaps some of you readers might remember fireworks in the 1940s?

So come and enjoy the warmth of LeRoy House on New Year's Eve, and step outside and watch the fireworks.

By visiting the Keystone Fireworks web page, [www.keystonefirework.com](http://www.keystonefirework.com), you can see various types of fireworks.