Fireworks finale rooted in world history

by SUZANNE PHILBROOK

Annually in the United States, the tradition is to mark the finale of a Fourth of July celebration with a fireworks display.

Millions of people flock every year to watch the colorful explosions that briefly splash the evening sky with streams of glittering light. The popping and crackling of the rockets draws ooh's and ah's from spectators.

While the use of fireworks in celebrations like the Fourth of July is long-standing, they are not limited solely to the United States. In fact, Americans inherited the tradition from their European and English ancestors.

The 15th century Italians were early leaders in firework displays. They shot fireworks for religious festivals, coronations, royal weddings and births, and military victories. In Siena, Italy, wooden and plaster figurines shot fire from eyes and mouths in dramatic productions of stories and fables.

Originally, however, fireworks were developed for warfare. The ancient Greeks were among the first to use them for that purpose. A Greek engineer, Kallinikos, took "Greek fire" to Byzantium in 670 A.D.

Also known as marine fire or liquid fire, the explosive material was used in four ways. One method was in siphons or large copper tubes attached to the bow of a ship. Masses of burning material were fired from the tubes.

Smaller, more maneuverable tubes called "strepta," were permanently mounted and could fire in numerous directions. Cheirosiphons were hand tubes of spouting fire. Fire pots or incendiary grenades were another form of fiery weapon.

The name liquid fire probably referred to the consistency of the mixture while hot or from the way the fire "rained" down on its target.

Mixtures for the various weapons consisted of sulphur, rosin, bitumen and maybe even saltpeter. The latter, researchers believe,was included although not mentioned, and was the source of oxygen needed for combustion.

Siphons and streptas were the forerunners of the Roman candle.

Gradually over the next seven centuries, through experiments and improvements with various explosive mixtures, slower mixes were developed that created incendiary projectiles or "stars." By the 18th century most firework designs were complete.

With this gradual evolution came the change from fireworks to firearms that shot bullets instead of fire.

The Italian firework displays were imported to other countries like France and England. In 1613 the marriage of Elizabeth, the daughter of the English king James I, was celebrated with a special display over the Thames River. It portrayed a flaming depiction of St. George on horseback slaying a fiery dragon.

The Italian style of display was used most frequently because of the skill of the Ruggieri Brothers of Bologna. They were the leading practitioners of the time.

One of the more prominent manufacturers and exhibitors of fireworks during the early times was the Brock family of England. Their displays were well-known in the 1800s throughout Europe and England.

In 1865 at the Crystal Palace in London, Charles Thomas Brock introduced a display of lances. These small, brightly burning tubes were about the size of a cigarette and created pictoral displays. By combining layers of lances, Brock developed the "transition piece."

An example of the transition piece would begin with a colorful floral design that changed into a portrait in white fire. Such a display required up to 35,000 lances arranged in panels 80 feet high, totaling 650 feet.

Displays like this drew a paying audience of approximately 80,000 people.

Fireworks inspired music over the centuries as well. George Frederick Handel composed the "Music for the Royal Fireworks." The piece was specifically written to be accompanied by 100 brass cannons.

The U.S. national anthem, no doubt, described some firework display after the American victory at Fort Henry in the War of 1812. Francis Scott Kay included in the lyrics the "rockets' red glare" and "the bombs bursting in air."

By 1815 fireworks were a permanent inclusion in the Fourth of July celebration along with the patriotic speeches, cannon salutes, parades and feasting.

Firework displays are found all over the world. They announce the arrival of spring in Germany, celebrate Holy Week in Mexico and the Day of the Saints in South American countries.

Triplet heifers born on Earl Meier's farm

Dairy farmers are elated when a pregnant cow delivers a heifer (female) calf, but Earl Meier really hit the jackpot.

Meier,co-owner and operator of Meier Dairy Farms in Boring, recently had the luxury of having a Brown Swiss cow he purchased at a Phoenix, Ariz., auction Dec. 9, give birth five days later to identical triplet heifers.

The three calves, each weighing approximately 80 pounds at birth, which reportedly is about average weight for a single-birth Brown Swiss calf, were transferred to the 350-acre Meier farm two weeks ago following initial mothering and nurturing in Phoenix.

"Needless to say, I'm very pleased," said Meier, who along with brother, Larry, and sons, Ken and Curt, operate the all-registered Brown Swiss farm. "I really thought when I first saw Marietta (the mother cow) that she had one calf. We decided at the auction that she was too close to calving to move, so I came back home. When I heard five days later that she had identical triplets," Meier added, "I couldn't believe it."

Neither would most people in dairy farming circles. Mike Gamroth, agent with Oregon State University's Marion County Extension Service, said the incidence of triplets born concurrently to a dairy cow is "about one in 80,000 and that might be low. And when the calves are identical triplets," Gamroth added, "the odds become astronomical."

"Our family has been dairy farming since the late 1800s and something like this has never happened to us," said Meier.

Brown Swiss dairy cows will usually produce about 14,000 pounds of milk annually. That means that over a normal 10-year production cycle, these three cows should give approximately 420,000 pounds of milk, roughly equal to 840,000 eight-ounce glasses.

"You can see why I'm pleased with getting three heifers," Meier said. "They should start producing at about 2 years of age and will weigh approximately 1,600 pounds at full maturity." Meier added, "Brown Swiss milk is high in solids and protein."

Five-year-old Marietta has been pregnant three times, and has a perfect record in dairy circles.

"No doubt about it, she's a valuable cow," Meier noted. "If they all produced heifers like that, we'd be in great shape. Now if she only passed some of those same reproductive genes to these triplets. . . ".

Earl Meir smiled, and pondered the possibilities.

Keeping Posted

Thursday, July 5

The Sandy Mountain Days bed race will be held at 7 p.m. along the parade route from Paul Koch Ford on Proctor Boulevard to Sandy High School on Bluff Road.

The Mountain Days parade will begin at 7:30 p.m. Entries include a float with Sandy's royalty, the high school band, antique automobiiles and the Al Kader Shriners Drum and Bugle Corps. Gerry Pratt is the grand marshal.

The Clackamas County Bookmobile will be at Firwood School from 9:30 to 11 a.m.; at Brightwood Store from 11:30 a.m. to 1:30 p.m., and at Hoodland Plaza from 2 to 4 p.m.

Friday, July 6

The Sandy Community Players will perform "Everybody Loves Opal" at 8 p.m. in the theater on Proctor Boulevard. The run continues Saturday evening.

Saturday, July 7

Sandy Mountain Festival will open in Meinig Memorial Park at 11 a.m. The festival closes at 8 p.m.

The Clackamas County Bookmobile will be at Zig Zag Inn from 9:30 to 11:30 a.m.; at Aims Community Church from 12:15 to 1:30 p.m., and at Dodge Park from 2 to 4 p.m.

Sunday, July 8

A flea mart sponsored by the Sandy Seventh-day Adventist youth group is scheduled. The mart will begin at 9 a.m. in the Adventist Community Center at 17150 University Avenue. For information about renting a space, call Jim Caudell at 668-4427.

Sandy Mountain Festival continues with hours from 11 a.m. to 6 p.m.

Monday, July 9

The Clackamas County Bookmobile will be at Cottrell School from 12:15 to 2 p.m.; at Carver School from 2:30 to 4:30 p.m., and at Boring Western Farms Store from 5 to 7 p.m.

Tuesday, July 10

Sandy Chamber of Commerce meets at noon at TJ's Restaurant.

Eastern Star meets at the Masonic Hall at 8 p.m.

Wednesday, July 11

The Sandy TOPS (Take Off Pounds Sensibly) Club meets at 9 a.m. and 6:45 p.m. in the Community Action Center. For more information on the morning club, contact Shirley Reed at 668-5338. For more information on the evening club, call Ginny Rada at 668-7348.

Sandy Area Merchants meet at 7 a.m. at TJ's Restaurant.

Thursday, July 12

The Rebekah Lodge meets at I.O.O.F. Hall at 8 p.m.

The Golden Age Club will be at the Sandy Senior Center at noon.

Festival influx creates traffic jam

The overnight impact on a city like Sandy created by the Sandy Mountain Festival is more than economic.

The sudden influx of approximately 75,000 persons presents problems such as increased traffic congestion and fights. For a police force of six, the problems are compounded.

But when the Sandy Police Department takes to the street this weekend to patrol the festival area, they won't be alone. Twelve volunteer police reserves will be there helping.

The program was begun in 1966 by "five or six individuals who were interested in law enforcement," according to Police Chief Fred Punzel. The men didn't have the time to become regular members of the force, so the reserves were born.

Originally, the reserves provided extra patrols and participated in search and rescue operations to aid the Clackamas County Sheriff's Department. Since then, the scope has been narrowed, Punzel said.

The reserves still assist with search and rescue, but are now used more frequently to back up regular officers by working at special events like ball games and the Mountain Festival to allow the regular force time to go about their duties. The reserves also provide security for local businesses, Punzel said.

While the number of reserves has doubled in the past 13 years, their membership has changed also.

The membership is now 50 percent female. "Law enforcement is just opening up to females," Punzel said. "Today it's very apparent they are capable of handling the job. And, in our case, they have a little more time to help out than the males."

Training for the reserves involves 90 hours of classroom training and firearm training at the Clackamas County Sheriff Academy. That experience is coupled with in-service training such as riding a minimum of eight hours per month in a patrol car and attending training sessions.

Although the reserves have all the legal authority of the regular police, including the power to arrest, Punzel said they aren't quite ready to fill in for vacationing officers or man patrol cars by themselves.

"As complicated as things are on the streets, they aren't educated enough to turn them loose in their own cars," he said. "You've got to be with it daily or you just don't keep up with it. It's like any profession."

To enter the reserves, participants must be 21 years old, have an interest in participating and have no criminal record or extensive driving record. The only other requirement is that they pass the Academy and firearm training.

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OSU studies logging landslides

The landslides that follow logging, particularly those associated with roads and forest clear cutting, are being analyzed by a team of Oregon State University researchers to help provide remedies for the problem in the future.

"We've learned that during the period of time following logging, frequency of landsliding increases and then begins to fall off," says W. Lee Schroeder. "For some reason, landslide frequency in clear cut units peaks about five years after logging."

Schroeder is assistant dean of engineering at OSU and professor of civil engineering. He also is the principal investigator for the research on "Landslide Hazard Analysis for Forest Management." Other engineers and foresters are involved.

The research team is developing a landslide hazard index for forest managers to use in making decisions about such things as the method of logging to use and the location of timber access roads within a forest.

"The choice of logging method is important because some methods are more disruptive to soils than others," Schroeder explained.

"We will try to divide existing topographic maps into hazard zones and assign factions—1, 2, 3 and 4 corresponding to degree of risk. If logging is taking place in a class 4 (high hazard) area, for example, landslide management needs to be given special consideration," Schroeder observed.

Steepness of the slope, strength-type of the soil materials, the ground water table and the type of landslide movement that could occur are involved in determining the relative landslide risk factors, he pointed out.

"The ground water table factor is the most important, it has been found. It's the major element in slope instability. If we didn't have water, we wouldn't have landslides generally."

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