Technology The New York Times

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December 20, 2001

Walking in a Wired Wonderland

By DAVID L. MARGULIUS

NINE reindeer wait patiently on Mark Obermiller's lawn in Scottsburg, Ind., with the whine of a jet engine rising in the background. Behind them Santa sits on a white sleigh and can be heard running through a preflight checklist with Rudolph:

"Master switch on — check."

"Transponder on and set to 12-hundred — check."

"Cloaking device set to engage on takeoff — check."

"Roll turbines — check."

"On Dasher, on Dancer, on Prancer, on Vixen, on Comet, on Cupid, on Donner, on Blitzen — and away!"

With these words, a simulated fireball shoots from the sleigh's afterburner, and Santa and his cargo vanish into blackness. The theme music from "Top Gun" fills the night, and the 80,000 lights in the Obermiller family's Christmas light show — surely one of the most high-tech in the world — begin to pulsate and dance.

The sleigh and Mr. Obermiller's other animated displays — which include a Santa driving a tractor, another piloting a helicopter, and snowmen roasting hot dogs around a campfire — are a new twist on the holiday lights that have set the seasonal scene for generations.

Harnessing computer sequencing software, elaborate electrical circuitry and a lot of creativity, a small group of hobbyists is breaking new ground in the art of making people smile in

December. Colorful poinsettias grow and bloom. Snowmen tap- dance and throw snowballs at one another. Carousels spin, angels flap their wings, penguins sing, and toys roll down conveyor belts, all thanks to the new technology.

"People will sit in front of the house in their car watching for 20 minutes," said Joe Faszl, who runs an elaborate digital display at his home in Ballwin, Mo. "It just brightens up people's attitudes." He said that he put up his computer-controlled lights every year for the payoff of seeing "a 5-year-old's face stuck to the window of a car on a cold night."

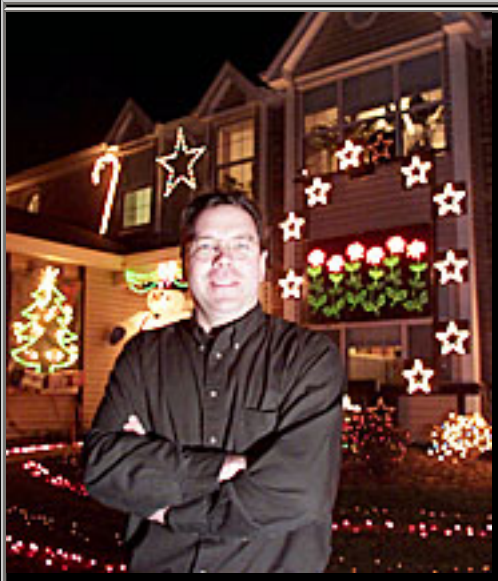
Mr. Obermiller agrees. "Digital basically is a crowd driver," he said. He switched to computer-controlled lights in 1998 after he had a dream "about using my lights to tell all about Jesus at Christmastime," and traffic to his display increased fourfold from the previous year. "I was flabbergasted," he said. "People were lined up on both sides of the highway."

A millwright who works the night shift at a local Ford plant, Mr. Obermiller said that his display drew 300 to 400 cars of spectators on a typical weekend night before Christmas. This year's theme is "America the Beautiful," and he is using a lot of red, white and blue lights.

Mr. Faszl and Mr. Obermiller are among the few dozen hard-core digital lighting animators who congregate on the message boards at www.planetchristmas.com, a site run by Chuck Smith of Franklin, Tenn. Combining the skills of electrician, programmer, artist and construction worker, they share tips on software, hardware and new animation concepts as well as lend moral support to one another.

"There's not a whole lot of lunatics like us out there, but it's growing," says Mr. Faszl, who got started in 1985 with a Commodore 64 and "a fire hazard of a relay box." He was captivated by a Budweiser Eagle sign in St. Louis in which the eagle seemed to be flying, and wanted to build a similar display of poinsettias that would appear to grow and bloom.

He got an old advertising sign from a stereo shop that flashed the letters in "Panasonic" one by one, ripped out the control circuitry and hooked it to red and green lights he had arranged



David Carson for The New York Times

AGLOW Joe Faszl, amateur animator, designed a sequence of lights that make flowers appear to grow and bloom for the digital lighting display at his house in Ballwin, Mo. He also counsels budding holiday-lights enthusiasts online.

MULTIMEDIA

Graphic: A Digital Duel

OTHER RESOURCES

Some pointers on building a computer-controlled holiday display:

Start small, then add on. Check the message boards at www.planetchristmas.com and the

as poinsettias. As the circuitry for each letter in "Panasonic" was activated, another part of the flower's stem would appear, making the plants appear to grow and then bloom.

"Anything I could find that was electronic I pulled apart, anything you could blink lights with," Mr. Faszl recalled. "The animation just got the better of me."

These days digital lighting equipment is easier to buy off the shelf but does not necessarily require less of a time commitment. The main components are the lights themselves, the electrical control boxes that turn the lights on and off, and the PC software that drives the control boxes and that programs animated sequences with accompanying soundtracks.

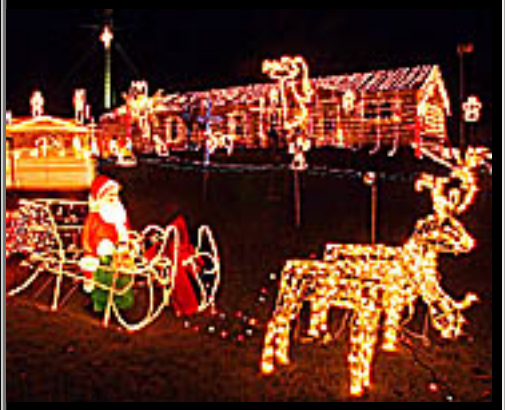
Dasher, the leading software program for controlling these digital displays, was developed by Drew Hickman of Merriam, Kan. Now 30, he started working on the program after his college years, writing a simple DOS program that turns light circuits on and off using a PC's printer port. Dasher 2.0, the latest Windows-based version, provides a spreadsheet-like grid that makes it easy to program sequences of lights and sound, including patterns in which objects seem to be chasing each other. For example, Dasher can program four reindeer on four separate circuits, turning them on and off in sequence "so it's like a reindeer walking across your yard," Mr. Hickman said.

"The patterns are simply based on the user's creativity," said Mr. Hickman, who said he had sold nearly 100 copies of the software, at $79. (He is keeping his day job as a network engineer.) Dasher can synchronize the playing of MP3 music files with the lights and build play lists, automating an entire sound and light show with daily start and stop times. To avoid disturbing neighbors with loudspeakers, most serious animators hook the PC's sound card to a miniature FM transmitter to broadcast the music. A sign on the lawn instructs viewers to tune their car radios to a certain frequency.

Lights shaped in popular patterns like reindeer, trees and snowmen can be purchased at local stores. More intricate designs can be made from scratch with standard light strings and almost any kind of backing — plywood, plastic cardboard, blow molds, wire frames, tomato cages or chain link fence. Those patterns can then be wired into

technical information at www.christmascave.com, and browse through the products offered at each site. Talk to people who have been mounting displays for years and figure out what you can build in the time you are willing to commit. Both sites offer links to photographs and videos of other people's displays.

Calculate costs up front. Excluding the PC, a starter set with eight circuits and 1,000 to 2,000 lights will run about $350. A display with 32 to 64 circuits and 30,000 to 50,000 lights will cost $2,000 or more. FM transmitters for music cost about $100, and the Dasher software is $79.



John Sommers II for The New York Times

CROWD MAGNET The display at Mark Obermiller's house in Scottsburg, Indiana.

control hardware, with the type of control box depending on how much wiring the user can tolerate snaking through the house and yard and how fast the animations should run (some lighting sequences involve changes every half-second, which requires more sophisticated hardware).

The control hardware takes the PC's low- voltage digital signals and translates them to the standard electrical current powering the lights.

There are several ways to do this. Digital input-output cards that fit inside the computer can be connected to solid state relays outside the computer that are then connected to the light circuits. A control box can be connected to a PC's serial or parallel port as well as to the light circuits. In a third option, a control box based on the X-10 home automation standard connects to the computer and then to any household wiring, which is then be connected to the lights. That minimizes the need for extension cords running through the house but slows performance.

Almost any PC will do. Mr. Smith, the Webmaster at www.planetchristmas.com, uses a 450-megahertz PC clone to control a 96,000-light display with 399 individual circuits, revered as the granddaddy of digital Christmas displays. "It doesn't take a lot of computer horsepower," he said. "The computer just looks at it as 400 on-off switches. I literally fire up the program Thanksgiving night and never touch it until Christmas."

Many conventional light displays use some form of preprogrammed control box, which at best enables the user only to vary the animation's speed. "People are usually satisfied with that for a year or two, but then they learn about computer control," Mr. Smith said. PC-controlled systems also help the user avoid a big power bill because the lights are rarely all on at once.

Mr. Smith's Web site, created five years ago, remains a catalyst for experimenters. Mr. Faszl of Ballwin is helping a newcomer from Arkansas build his first computer display. "Mistakes can be very expensive," he said. "Having to rework something can literally cost you dozens of hours in the basement." Mr. Faszl is also working on a new feature that will enable people visiting his Web site (www.faszl.com) to control parts of his show remotely and watch the results.

Mr. Smith, who takes four days off from work each year to put up his lights, feels no less enthusiasm for the project than he had when he started in 1986. "It's a labor of love," he said. "I get to play Santa Claus out in front of my house, and see all these people going ooh and aah. It's a wonderful feeling."