

She needed a science project for school

## FIFTH GRADER BUILDS TINY PIPE ORGAN

by HAL STEINER

It was quite a challenge which dad had tossed her. Fifth grader Debra Johnson was trying to dream up a project for a science fair held annually at Glenwood School in Thousand Oaks, California, where she is an "A" student. The project



The console is built around the source of keys—a discarded toy piano. Debbie needs no drawknobs or stopkeys. Her one rank of Stopped Flutes is "on" all of the time. The tone is Tibia-like.

had to be rather devastating because the competition was tough; one lad had built a working computer.

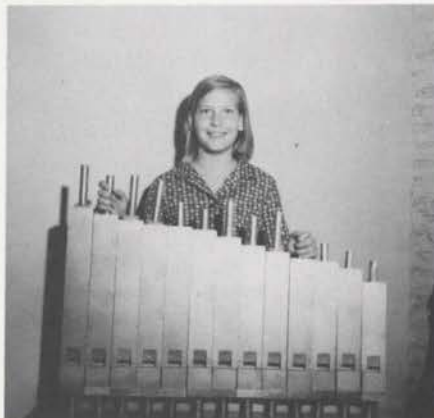
"What shall it be, dad?" asked Debra.

Charles Johnson looked up from his newspaper briefly. "Oh—why don't you build a—hm!—build a pipe organ!"—and promptly forgot about his suggestion. But not for long. Debra, a comely miss of 11 years, hardly knew what a pipe organ was. She had never seen or heard one, knew about the instrument's existence only vaguely. But her father had spoken. And Debbie is a determined gal.

There was only a limited time until the exhibit had to be ready for the science fair so the girl had to learn rapidly. Her fifth grade teacher, Linda Spellman, was most helpful. The teacher recommended books and she put Debra in touch with people who know about pipe organs. The next week was spent boning up on pipe organs in the library. A British book on actual construction provided some details but showed a system of keying far more complex than Debra needed. Because she was planning on a one rank, 24-tone instrument she wasn't concerned with a switching system.

Her first acquisition was a battered toy piano that someone was about to discard. That supplied the rudiments of a console and also provided some keys. Next came the blower problem. That was solved by a vacuum cleaner. The keys and vacuum cleaner are the only two pieces of "prefabricated" equipment in the finished work. The rest was developed from scratch at a cost of about \$30 for materials.

First came the pipework. At first Debra hoped to use the little bamboo flutes available in oriental gift shops but they proved to be "screetchy" and otherwise impractical. Debra didn't know it then but she was looking for a Tibia sound. Next she tried to construct pipes from cardboard mailing tubes. Debbie couldn't know that this had been recommended in a book entitled *Organ Building for Ama-*

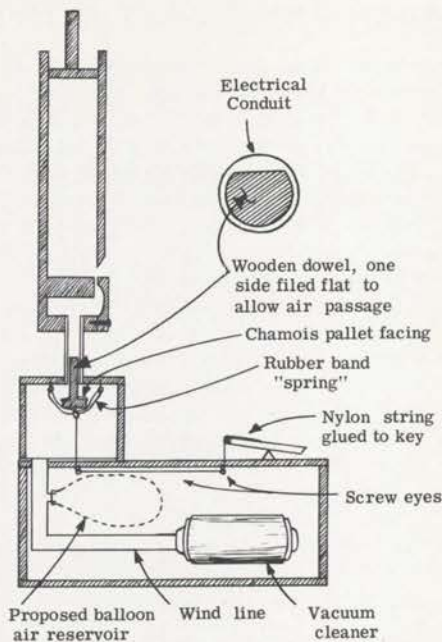


DEBRA'S PIPEWORK — Her scaling (length only) was arrived at by experimentation. The plywood pipes have been given a coat of "brass" paint.

teurs by Wicks, before the turn of the century—and had been found wanting.

All through these experiments the little girl had never seen an organ pipe. In her rounds of those who could help her she found a man who had a stopped wooden pipe to loan her. With this pattern, progress picked up. Due to the short time available, Debra decided to reduce to one octave—13 pipes all to be made of 3/8 inch plywood.

She worked out scales for the length of the pipes. Dad helped by cutting the lumber with his circular saw in the garage but Debra did the nailing, gluing and clamping. The circular saw also provided



Cross section of keying action devised by Debra. It was her fifth attempt and the use of nylon string for "trackers" made the difference.

a curved upper lip, rather than a bevelled one, for each pipe. Because only one octave was involved, the novice organ builder decided to dispense with all scaling, other than length. Therefore, all of her pipes have the same outside dimensions, except for length.

The sample pipe happened to be equipped with a stopper—so the thirteen pipes that Debra built are also stopped pipes. And to her credit, she included the nicking on the languid that gives a flute "poof-free" speech. No regressive "baroquery" for this modern miss!

Next came the problem of the keying action. It very nearly floored her. Re-

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Her curiosity about organs aroused by her own construction experience, Debra attended the Dick Schrum concert and later got a chance to examine the console. Maintenance man Dick Stoney showed her some of the big Kimball's pipework. Now the little girl is "hooked" on pipes — and only eleven!

## FIFTH GRADER BUILDS PIPE ORGAN, continued

member that Debra Johnson was attempting to cover centuries of organ innovation in a three month period. When we say she started from scratch that tells only a part of the story. Until the project loomed, her interest in music consisted of a vague desire to play the guitar. But she has had no more musical instruction than that available in school.

She worked out a keying system involving rubber bands in place of the more common spring-loading of pallets. And she learned that modern foam products aren't as leak proof as old-fashioned leather for facing pallets. She finally used chamois leather.

The Johnson family is what might be called a closely-knit group. There are five children and their parents practice "togetherness" in practical ways. In this case, when time ran short and there were still many problems ahead, Debra's problem became a family problem. There was much midnight oil burned in order to get the instrument ready for the competition. In fact, when it was delivered to the school to go before the judges, the paint was still tacky.

Charles Johnson readily admits there were times when he wishes that he'd never suggested the organ project. In fact, he wasn't serious about it. But daughter Debra took it as a challenge, and once started, there was no turning back. Debra has an inquisitive mind, an abundance of stick-at-itiveness and a positive and outgoing personality. Once she had been "turned on" she knew she had to finish.

Not that there were not moments of doubt. She actually went through five stages of organ building experimentation before she finally hit upon a workable combination. And always the "science fair" date loomed to spur her on. For awhile she toyed with the idea of using a toy balloon for an air pressure regulator and reservoir. But instead, she voiced her pipes to take the full output of the vacuum cleaner, and thus eliminated the reservoir.

Through all the anxious days Debra's mother, Lee Johnson, encouraged her daughter and helped ease disappointments. And no one was more excited than Lee when the finished product worked. There it stood, a 13-pipe chest atop the console afforded by the greatly altered toy piano, it's gold-tinted wooden pipes and black finish gleaming. And it gave out a deep-throated Tibia sound.

One of the last jobs was "fine tuning." Because Debra is not a musician she had no idea as to how it should be tuned, nor did she even have a pitch pipe to start her off. She solved that problem by inviting a girlfriend to the house, a voice student with an accurate sense of pitch. The girl sang the notes while Debbie worked the stoppers in the pipes.

There was considerable suspense while the judging was being done at the science fair, which included projects from most all the schools in the Valley Oaks District system. The competition was stiff. But finally Debra's pipe organ was adjudged the winner in its class and today she will show visitors a desk pen set with an inscription engraved which proclaims Debra a prizewinner.

Meanwhile the prize instrument adorns a proud spot in the Johnson living room and visitors are frequent. Every once in a while dad stops on his way through the living room and looks at the instrument with a "I hope I never have to go through that ordeal again" look on his face. But then, parental pride shines through and he adds, "Y'know—I'm mighty proud of Debbie."

But Debra is already making plans for when she reaches the 7th grade. "You know—I've heard about a type of organ called a 'mighty Wurlitzer.' Now—perhaps. . ."

## VOX POP, continued

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theatre with gaping chambers where pipes used to be and a willing management. If things work out, Burton and his group will install the rare 2-9 Reuters theatre organ they have been getting into shape in the empty chambers.

The new Sierra Chapter (former TOES) scheduled an ambitious movie night

at Grant Union High School in Sacramento on April 29th. Chapter "veep" George Seaver was set to cue a Ford Sterling comedy and the well-remembered 1928 hit, *Lilac Time* with Colleen Moore and Gary Cooper, the instrument being the famous 21-rank instrument assembled in 1938 from Wurlitzers removed from theatres in Redding, Calif., Reno, Nevada and San Francisco.

Over Easter Dean McNichols "did it again" when the little Friends church in Bell, California, filled to overflowing to see the old silent *King of Kings* and hear Dean's accompaniment at the two-deck (style D) Wutlitzer. Encouraged by the turnout for his November 1966 concert, the film was planned as a special Easter presentation. That Dean's accompaniment hit home was evident in the audible sniffing heard above music during the scourging scenes. One scene called for a gong, which the organ doesn't have. Dean solved that one by cueing the projectionist to turn up the sound track at that moment to hear a gong struck in 1928. No one was the wiser. Dean says he enjoyed playing the movie; "it's much easier than a straight concert."

Gene Featherston reports from Cincinnati that the 3-10 Uniphone organ in the Rivoli theatre has been kept busy so far this year with no let-up in sight. In February the Central Indiana Chapter had John Muri playing a silent film, in April

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