



Home-grown GROWTH

With the popularity of its traditional, home-style bakery foods increasing rapidly, how did Sister Schubert's Homemade Rolls automate and expand? Carefully. Very carefully.

BY LAURIE GORTON

“**W**e were maxed out, and that dictated our moves,” said Patricia (Sister) Schubert-Barnes, president and owner of Sister Schubert's Homemade Rolls, Inc., Luverne, Ala.

This summer, her company completed an expansion that doubled plant size and more than quadrupled its capacity. Now, more than 1 million rolls a day flow through the 57,000-sq-ft bakery, baked to order and distributed to frozen grocery cases in 28 states. But the expansion did more than build productivity with automation, it actually improved the frozen baked foods, giving them back some of their original product characteristics.

Rising demand can lift a business to new heights or drown it in a sea of unmet expectations. This entrepreneurial company is succeeding by staying faithful to high product standards. Adapting automated methods to retain the hand-made touch allows Sister Schubert's Homemade Rolls to produce appealing, traditional, home-style baked foods without altering formula or finished product.

“My biggest concern is maintaining the quality and consistency of each product,” Ms. Schubert-Barnes said. “If we are successful at that, we will continue to grow.”

GROWTH STORY. And grow it has. In 1989, Ms. Schubert-Barnes operated a



Patricia (Sister) Schubert-Barnes chose to keep pan-filling a manual operation in her now highly automated bakery. "Where we could do something manually that made a difference to the product, we kept those methods, and we automated the rest," she said.



The warm, tender dough must be sheeted gently. Cream cheese filling and whole blueberries are added to create the newest style, which now rival the company's cinnamon yeast rolls in popularity.

[Below] Although lines move swiftly, 100% inspection before proofing helps assure proper home-made quality.



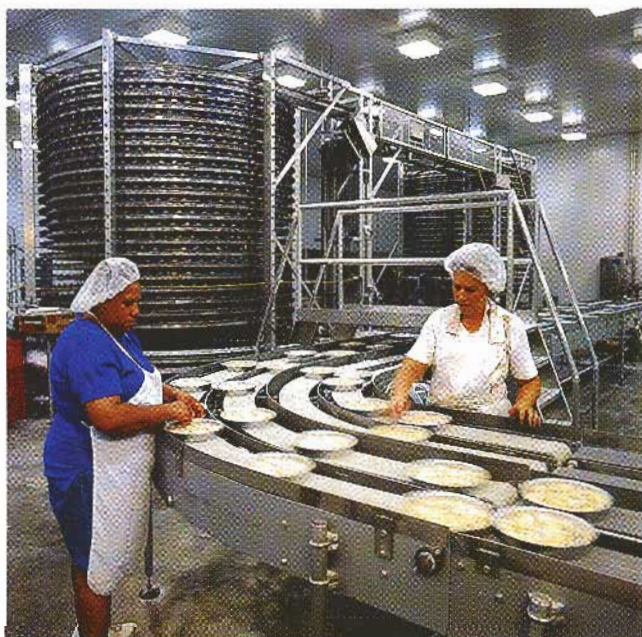
catering business out of her antebellum home in Troy, Ala. She volunteered to donate some of her signature rolls to a holiday frozen food fair at her church. Eighty orders were logged that year. But the next year, she had to cut off requests at 200 pans. And in 1991, she baked 300 orders of rolls for the event.

Reasoning that folks might like to buy her rolls year-round, Ms. Schubert-Barnes interested a local supermarket in carrying them. She bought two commercial ovens at a school surplus auction and found a 30-qt vertical mixer in need of repairs. Her mother lent a used chest-style freezer. She hired three helpers, turned her porch into a mini-bakery and stored flour in the living room.

Demand quickly overflowed capacity. Next she moved into a 1,000-sq-ft back room at her family's furniture warehouse, but within a month she doubled the space. That brought production from 96 cases per week up to 2,600 cases.

In 1994, she moved her fledgling business into a new 25,000-sq-ft bakery at Luverne, a few miles away. Production capacity rose to 18,000 pans of rolls a day. It's a good thing that the new site included 15 acres of land, because four years later, the bakery grew again.

"When we decided to build a bakery — the move that brought us to Luverne — we wrote a 10-year plan to support our funding request," Ms. Schubert-Barnes said. "We thought we'd put together a reasonable projection, but our adviser suggested that it



looked a little too good. So we toned it down.

"But in just two years, we exceeded our 10-year plan," she continued. "During 1993, our sales were \$140,000. This past year, we exceeded \$12 million. We've doubled revenues just about every year. We're ready to do it again."

EXPERT HELP. "Brand building, that's what it is all about," said George Barnes, vice-president of Sister Schubert's Homemade Rolls, Inc.

And it's been done primarily by word of mouth. Starting out, if a grocer would agree to sell her product, Ms. Schubert-Barnes and her two daughters, Charlotte and Chrissie, would set up in the store and hand out samples.

"I knew if I could get people to taste my rolls, they would buy them," Ms. Schubert-Barnes said.

In a short time, volume grew to the point where she could no longer supervise production and manage delivery all herself. She turned to Mr. Barnes, a food broker, for more professional distribution. He expanded the company from local sales into regional scale. They married in 1995 and now have a three-year-old son, Evans.

"One of the things I learned in the beginning was to leave some jobs to the experts," Ms.

Schubert-Barnes said. "I am the expert at making my rolls, and once I found the experts at sales and marketing that were as enthusiastic about my products, we really started to grow.

"George makes the deals; I make the doughs," she said with a laugh. "In this partnership, I'm the jumper, while George is the one holding the net below."

In the past four years, the market reach of Sister Schubert's Homemade Rolls products moved south ... and north and east and west. The company's Web site, www.sscrolls.com, lists retail locations in 28 states. The site allows secure credit-card ordering and even offers a reproducible letter for shoppers to send to



local grocers asking that their stores carry Sister Schubert's Homemade Rolls products.

The current product line includes the company's newest item, blueberry-cream-cheese yeast rolls, plus Parkerhouse yeast rolls (Sister Schubert's Homemade Rolls's No. 1 seller), sausage yeast rolls, cinnamon yeast rolls, orange yeast rolls, southern cornbread and jalapeño cornbread.

ADDING AUTOMATION. "Four years ago, I thought the new plant would be it for a long time," Ms. Schubert-Barnes said, "but it wasn't."

Guiding the latest expansion were two objectives: increase production and maintain product quality.

"We've gone as quickly as we could, yet as slowly as possible to maintain the product," Ms. Schubert-Barnes said. "Where we could do something manually that made a difference to the product, we kept those methods, and we automated the rest."

In 1995, the company turned to Moline Machinery to automate the forming process. Three years later, it was time for high-tech solutions for flour handling, dough mixing, sheeting, proofing, baking, icing, packaging and freezing. These were supplied by Gemini Bakery Equipment and I.J. White Corp. (Systems). A second Moline line was also added. All are state-of-the-art. But Sister Schubert's Homemade Rolls kept its investment in manual methods for panning: Each roll is hand-placed in a round foil tin, the same approach that a home baker would take.

"With this expansion, everything changed. Even the product got better," Ms. Schubert-Barnes said. "Our original expectation was for 60 pans a minute, but we're at 75 pans per minute now. We can bake 1 million rolls a day, and there's potential for more."

UNCONVENTIONAL BY CHOICE. Sister Schubert's Homemade Rolls products are not easily automated. In every important way, the Parkerhouse and sweet yeast-raised rolls are true to their Southern heritage and utterly authentic, right down

to their melt-in-your-mouth eating characteristics.

"These are my Grandmother Wood's recipes," the owner said. "They're made the same way but in bigger quantities." Ingredients are all natural, with no preservatives or additives allowed. And when the family recipe calls for consumer-style rapid-rise yeast, that's what the Luverne bakery uses, too.

Just as these aren't conventional wholesale formulas, neither are their processing methods. "Make your equipment work with my recipes," that's what Ms. Schubert-Barnes told the bakery equipment suppliers.

Sister Schubert's Homemade Rolls' expansion project started in January 1998, with underwriting in place during March 1998. The plant continued to operate during this period. The new production line had to be complete before the existing makeup line could be moved. Everything was done by January 1999.

Burch Engineering, Birmingham, Ala., designed and laid-out the building so that its back wall, set on the mid-point of the property, could become the site's expansion wall. It did. The building doubled in size.

Ms. Schubert-Barnes admitted that her perfectionist streak lengthened startup commissioning. "I had to have things absolutely right before the next step," she said. "There was a lot of sweat and some tears, but the results are worth every extra minute we took. All the hard work paid off. I couldn't be more pleased with the manufacturers involved. They helped us incorporate new equipment and new technology that allowed us to make rolls the way I want them made."

WARM DOUGHS. In a four-hour production cycle, Sister Schubert's Homemade Rolls turns raw ingredients into finished products, iced, bagged and ready for the freezer. The plant operates two shifts with a staff of 180 people. To build stock ahead of the holidays, the company's busiest sales period, additional workers are brought in during September and October for a weekend shift.

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To gain more volume and automate its baking process, the company switched to an indirect-fired gas tunnel oven, and it gained bake quality that rivals home-oven results.



The hot pans of rolls move into the first of two cooling towers. The belt from the spiral conveyor crosses over at the top to a second spiral.

Raw materials, including bagged bakers enriched flour supplied by Sysco along with other ingredients, are received at one side of the plant, with finished frozen goods leaving through four refrigerated docks at the opposite end.

Operators empty the flour bags into a bag dump station that supplies the Abtek automated bulk flour system. Water is also delivered automatically at pre-set temperatures, but all other ingredients are manually batched.

"We took the guesswork out of the flour and water," Ms. Schubert-Barnes explained.

Two Kemper paddle-style vertical mixers produce doughs in medium-size batches. Bowls are released onto carts, and operators push them to the Kemper hoists on each of the two parallel Moline makeup lines.

Doughs come out of the mixer at 90°F (32°C), warm and sticky, just as they do at home. "The dough is very soft and very sticky," Ms. Schubert-Barnes said, "not like a bread dough at all. The less you handle my dough, the better it is."

Because the dough is so tender, it requires three separate reduction stages. The first stage on the Moline line is a

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cross-roller section, which duplicates the transverse sheeting-stretching action of manual rolling pins. Two reduction rollers follow.

Depending on product requirements, a series of flour dusters, topping shakers, filling spreaders and curling rolls can be engaged to turn the thin sheet of dough into a long, thick log.

After sheeting, the dough passes through a specially programmed computerized guillotine cutter. It is computer-timed to cut five minutely different sizes. The sizes vary at random to duplicate hand cutting, but when 16 roll pieces are placed in a pan, the total weight reaches the proper target setting.

Each makeup line employs 18 to 20 operators filling foil tins by hand, an operation deemed essential to product quality at Sister Schubert's Homemade Rolls. This manual operation gives every pan a slightly different appearance that communicates "hand-made" to consumers.

Filled pans leave the makeup lines by traveling along a plastic link conveyor. The two lanes from each makeup line converge as they head toward proofing. Each pan receives a topping of melted 100% butter, applied by a Burford spray dispenser. The butter topping creates a tender, buttery crust.

A DIFFERENT BAKE. The plant's new proofer, an I.J. White Accu-Proof system, puts two spiral conveyors to work. Sister Schubert's Homemade Rolls employs a dry proof, typical of home baking practice. The pans of rolls enter the chamber low, travel up one spiral conveyor, cross over and descend the second spiral before exiting the proofer.

Pans accumulate in four lanes on



Four heads drizzle icing over the rolls, turning the pans to simulate hand application.

the loader conveyor feeding them onto the wire mesh belt of the Werner & Pfleiderer 78-ft-long tunnel oven. The indirect-fired gas oven uses a recirculation system to maximize fuel efficiency. Its turbulence system ensures even heating throughout the zones.

"The new tunnel oven works just like a giant

gas-fired home oven," Ms. Schubert-Barnes said. "It bakes the rolls with less moisture loss than the rack convection ovens we had before. I feel like I've gotten my old rolls back!"

The hot, baked rolls leave the oven and are grouped in two lanes to enter the twin I.J. White ambient cooling spirals. Pans travel up one spiral, cross over to the second and descend again. These spirals, like all others in the bakery, are controlled by Allen-Bradley PLCs so that belt speeds assure proper processing time.

The cooled rolls continue their travel, entering the icing station. Here, two Hinds-Bock depositors with two heads each dispense icing. The stations rotate the pans as the icing flows down in multiple streams. This action mimics the action of hand drizzling.

A separate staging conveyor between the dispensing system and the I.J. White spiral Icing-Set system isolates drips. This step helps keep excess icing off the spiral's belt. To further assist sanitation, this spiral is equipped with an I.J. White automatic belt washer.

PROTECTIVE PACKAGE. From the top of the icing-set spiral, pans descend a conveyor that diverts them to one of three UBE paddle-baggers. Swept into a polyethylene bag that's sealed by a

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Burford twist-tier, the rolls move off to the blast freezer.

"We package rolls before freezing to make sure that product moisture isn't stripped away by the blast freezer," Ms. Schubert-Barnes said.

Dwell time in the freezer is, thus, longer than for unpackaged products, but limiting moisture loss is worth the extra expense. Also, by reducing ambient mois-

ture within the freezer, Sister Schubert's Homemade Rolls doesn't have to defrost the coils as often.

Bagged rolls travel on a conveyor through a port in the wall leading to the refrigerated case-packing room where the I.J. White Thermal-Pak spiral freezer's entrance and exit are located. Rolls move into the -16°F (-27°C) blast freezer at the

bottom to travel up one spiral conveyor and down a second, staying in neat four-across lanes.

Because of Alabama's mild winter climate, the company located the compressors for the glycol coolant system serving the blast and storage freezers outside the building.

Operators manually load the frozen rolls into shipping cases, 12 pans to the case. Marq case erectors supply the manual case-loading line. Stacked onto pallets, operators move the cases of rolls by forklift to the adjacent, multi-tier freezer warehouse. The dock area, too, is refrigerated to safeguard the frozen rolls when they are staged out of the four doors.

Sister Schubert's Homemade Rolls converted its former production shop into a staging area for auxiliary equipment. Some packaging supplies are also stored here.

CLEAN BY INTENT. The plant's two-shift schedule gives a three-hour break for clean-up before the next day's production. Because Sister Schubert's Homemade Rolls makes sausage-filled rolls, it operates under U.S. Department of Agriculture inspection.

"We're real sticklers for cleaning," Ms. Schubert-Barnes said. "U.S.D.A. oversight helps, because this means the plant must always operate in a sanitary fashion. I want it that way. And I can let the U.S.D.A. inspector play the 'bad guy' on rules, if I have to."

By using "hand-made" methods, Sister Schubert's Homemade Rolls earns a bonus in quality control.

"Every single roll is looked at during the process," Ms. Schubert-Barnes said. "The staff here is the reason that the rolls are so good. They handle the dough every day, and they don't let problems get by."

Moving ahead with automation was an important step for Sister Schubert's Homemade Rolls. With the production improvements, quality variables have been reduced. This inspires even more excitement from the company's enthusiastic owner.

"We're going to try to stay one step ahead; to stay on the cutting edge and to be able to stay ahead," Ms. Schubert-Barnes said. "We're still the same bakery with the same attitude." ■

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