LOGICAL *EVOLUTION*

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Programmable logic control and other cutting-edge automation technologies help steer upstart machinery builder onto the right path

Anyone who has put in their fair share of time in the Canadian packaging machinery industry is well familiar with the name Langen, which been virtually synonymous with Canadian case-packing ever since the founding of **Langen Packaging** back in the early 1950s. Today, the Langen name can be also be linked to something entirely different—popcorn.

It's something of a stretch, granted, but there is plenty of logic behind this seemingly dramatic change of venue.

Paul Langen, formerly vice-president of Langen Packaging before leaving the company in the year 2000, these days keeps himself busy as president of an up-and-coming industrial group **PJR Holdings** of Georgetown, Ont.

One of the several companies operating under the PJR umbrella is called **Rebopop**, which recently teamed up with **Family Time Snacks Inc.**, a Valparaiso, Ind.-based snack-food company, and machinery builder **Great Lakes Packaging Inc.** of Dolton, Ill., to produce an award-winning pouch for Family

PJR president Paul Langen showing off Allen-Bradley components, which he says are specified as standard by many North American-based plants.

"The idea was to see if we could apply our machinery background to develop a package that would be more machine-friendly," recalls Langen. "We spent eight to nine months developing packages, and then we received interest from Family Time."

Rebopop responded by supplying Family Time with its first-built cartoning machine, capable of cranking out 60 one-of-a-kind popcorn packages per minute.

The form-fill-seal popcorn pouches are glued to folding-carton blanks, and then sequentially folded around the pouch to form a ready-to-erect carton, which was selected as one of the *Outstanding Packages of 2003* in the U.S. by the ***New Products Magazine***, published by **Stagnito Communications** in Chicago.

This attention-grabbing pouch/carton combination is cold-glued in a compression unit, before being overwrapped with 120-gauge biaxially oriented polypropylene (BOPP) film. The carton itself—manufactured from food-grade, grease-resistant sulfate board produced by the **Smurfit-Stone Container Corporation**—is litho-printed in five colors.

To get the popcorn popping, the consumer simply removes the overwrap and erects a six-inch cube by pushing on red arrows at opposite ends of the blank. After that: just place it in the microwave, set time, and throw on that DVD!

Having made the strategic decision to focus on serving the popcorn industry, PJR set about shopping for some reputable and well-respected machinery-making expertise: first acquiring the assets of **AFA Systems Ltd.** in July of 2001; then further strengthening its manufacturing base with the purchase of **Nordale Machines Ltd.** last November.

The merger of these two key assets has led to recent formation of **AFA/Nordale**, which shares the roof of a 12,000-square-foot, 18-employee manufacturing operation in Georgetown, about 60 kilometers northwest of Toronto, with Rebopop.

By acquiring AFA systems, PJR got hold of an established designer and builder of stand-alone, high-speed automated packaging assembly machines, as well as valuable skills in the integration of groups of machines for high-speed, automated assembly of products and cartoning /case-packing infeed systems.

As for Nordale, founded back in 1956, the company had long enjoyed a well-earned reputation as a supplier of packaging machinery for smaller-sized industrial operators.

"They had a good reputation in the Canadian market," Langen told ***Automate Now*** during a recent visit to the AFA/Nordale plant, "and there is still a place for them.

"There are people who want to get into the market with a machine that's simpler to adjust and easier to

Electrical technician Dimas Arruda tending to the wiring of the Mark 500i machine, assembled by AFA/Nordale.

maintain," he expands, "but it is a small, niche market.

"We want to bring in our expertise with higher speeds and more use of electrical systems. That way, we can expand our market here and, hopefully, move into the U.S. market."

Some of the key machinery innovations currently under development at the Georgetown plant, aimed directly at popcorn packaging applications, include a pouch packager and a carton former—again, a very logical outcome considering the fact that there are currently over an estimated 3,000 Langen Packaging cartoning machines installed worldwide.

To make sure all its machinery runs as intended, Langen knew he had to outfit them with the most reliable machine control technology around, and after going through all the due diligence of a thorough supplier selection process, he finally zeroed in on the high-end industrial control technology from **Rockwell Automation**.

Headquartered in Milwaukee, Wis., Rockwell is one of the leading global suppliers of industrial automation hardware and software, with its Canadian operations based in Cambridge, Ont.—right in the heart of Canada's industrial heartland—supplying the full, comprehensive range of Allen-Bradley automation controls and components, process control software, power distribution systems, etc.

An overview of the work-in-progress on the Mark 500i cartoner.

"Allen-Bradley was the favored machine control of our customer," explains Langen. "Before, Nordale was used to building machines with relay logic and smaller PLCs (programmable logic controllers), but when we came in, we went to Allen-Bradley PLCs and their PanelView computer terminals, and we incorporated them both into our machines.

"Today, many plants specify Allen-Bradley technology as their standard."

For AFA/Nordale, the Allen-Bradley solution consisted of a single-axis Ultra 3000 indexing servodrive with an MP-Series low-inertia servomotor; as well as a MicroLogix 1000 PLC and a PanelView 300 operator interface terminal.

The Ultra 3000 unit provides all the motion control for the application—registering the part coming in and positioning the flighted conveyor in front of the pneumatic loader. Featuring built-in torque tolerance to eliminate the risk of machine jam-ups, the Ultra 3000 is also is part of the drive link of Rockwell's Kinetix integrated motion control software program.

The MicroLogix 1000 programmable controller takes care of regulating all the machine control, while PanelView 300 provides machine operator with a user-friendly interface terminal that ensures high-performance functionality with advanced alarm handling, screen security, analog gauges, ATA PC memory card, universal language support, and online printing.

So far, Langen says he has been extremely pleased with the performance of each and every one of the Allen-Bradley system components.

"Before, we had a servo controller that talked to a PLC, which meant that we were dealing with two different components," he states. "Now, the servo control is part of the PLC, rather than a separate device, so it is a lot more efficient."

With such advanced control technologies at its disposal, combined with a vast wealth of experience to enable it keep making better and better machines, it seems only logical to conclude that AFA/Nordale has exactly what it takes to service whatever industry it chooses. And at least in the popcorn packaging business, for now, there is more than a kernel of truth in the notion. ❑