



# Collaborative

The kiss of death for a C&S technology company: trying to outguess the market by offering 'bells and whistles' that don't enhance the bottom line

By Robert J. Derocher

**W**hen you're a supplier or distributor of communication and signaling equipment to railroads, you know you'd better come up with the right technology ... for the right road ... at the right time. If you don't, says John Felty, national sales manager for Lat-Lon LLC, you'll know about it pretty quickly.

"Our railroad partners have never hesitated to speak out about their interest in new features that can help them solve problems. All of our recent technical developments have been customer driven," Felty says. "The kiss of death for a technology company is to try to outguess the market and develop 'cool,' high-tech features that do not help the bottom line."

From replacement bulbs to traffic dispatching systems, the C&S product market reflects a technologically diverse range of products that play a pivotal role in helping railroads carve out a credible and profitable niche within the shipping chain. Felty alluded to it: High technology personifies the C&S market, but product and equipment suppliers have learned that technology borne in the lab must undergo rigorous testing in the field, and unrelenting scrutiny from customers in the research and development stage. C&S suppliers, for the most part, acknowledge that it is critical that they stay on top of customer requirements. Suppliers believe that this inherently close C&S research and development collaboration, while not unique to the C&S market, is extremely important, given the critical role the technology plays in railroad operations.

## Technology + performance

Railway Systems Suppliers Inc. (RSSI), the primary trade association for C&S suppliers, represents more than 225 companies. The C&S market reflects \$500 to \$750 million in annual sales, RSSI estimates. The competition for sales dollars among suppliers is as fierce as

the competition their customers face as they vie for shipping dollars. But on the other end of the product development spectrum, there is little or no pressure to regularly come up with a better mousetrap despite the C&S market's reputation as a prolific technology incubator.

For example, while John Schaefer says his company builds its products so they're user-friendly, he acknowledges coming across his share of more complex product innovations that have had a profound effect on operational cost and efficiency.

"We build it so it's easy to use and we aggressively apply the 'keep-it-simple' formula, says Schaefer, manager of engineering and sales for S&C Distribution Co. On the other hand, Schaefer cites a number of technologies that he observes are in a state of technological flux.

The use of electronic-coded track circuits to replace pole lines has had "a gigantic impact on operating costs," he says. More recently, Schaefer has been impressed by SYSTRA Consulting's *RAILSIM*<sup>®</sup> simulation software package that allows the user to display data from any signal recording device. "People say it [C&S technology] hasn't changed in a hundred years, but there are constant improvements," he says.

At Union Switch & Signal Inc., work is currently underway on a next-generation dispatch system for CSX Transportation. The system will work on a Unix<sup>®</sup>-based platform to enable better computer-aided dispatching. In the United Kingdom, Union Switch & Signal's traffic planning technology improves operational headways on Network Rail's West Coast mainline, says Jeremy Hill,

# by Design

vice president of marketing and product development for US&S.

"Certainly there are developments on the locomotive side that are encouraging, but control and signaling technology, particularly the types of applications that we are implementing in the dispatching systems for CSX and Network Rail, represent the newest wave of C&S development of proven technology," Hill says.

## 'No down time, no train delays'

Whether it's high-tech or low-tech, some common threads run through virtually all of the products utilized by the railroads. "They want products that assure system availability: no down time, no train delays, no overtime," says Jim Huntley, director of sales in North America for ERICO Products. "They want products that last and perform."

To that end, many suppliers say they work regularly with their railroad customers to ensure that products are meeting those needs. Safetran Inc. says its product line management organization was established to maximize contact with its customers.

"We have interactions with the railroads in various aspects of the business cycles and take those opportunities to incorporate their input into our product strategies," says Rob McKeel, marketing leader for GE Transportation Systems (GETS)-Global Signaling. "Our customers make us successful, and we are well aware of that."

Similarly, returning the favor by helping to make the

customer successful means pushing the research and development envelope in a number of different areas.

"We have seen a lot of interest from shippers wanting to keep track of the condition and location of their rail assets," says Lat-Lon's Felty. "This includes ambient and internal temperature for tanks and box cars, as well as handling events and general car health."

## A big customer base

Striking a balance between the needs of the Class I freight railroads, short and regional lines, and transits also can be a challenge for C&S suppliers.

Because of the scope of their operations, Class Is want a greater interest in technology that enhances speed and computer-aided dispatching, many suppliers say. But perhaps the biggest difference is cost: Smaller railroads usually don't have the capital to invest in new technology or higher-priced products, and they don't have the capacity to justify high-volume purchases.

"It used to be that regional railroads wanted name-brand only," says Caden Zollo, sales representative for The Specialty Bulb Co. "They are slowly changing to other brands that are less expensive."

It's not just the short and regional roads that are being more cost-conscious. The lethargic economy has forced all railroads to tailor or re-examine their purchasing strategies. US&S has seen the effects at its regional service centers that provide maintenance and refurbishment of existing equipment. Work at those centers has increased, both from freight and regional roads, as a direct result of the need to conserve spending, US&S's Hill says.

"There is an upside to the tight financial constraints we have faced dealing with short lines," adds Felty. "By designing our equipment to meet short line purchasing constraints, we are able to offer our Class I customers a more economical product."



## Lighting the way

It's pretty much a given that all railroads are looking for durable, cost-effective C&S products that require little or no maintenance.

In the area of bulbs and lighting, Specialty Bulb — a supplier to short and regional lines — is seeing a switchover from incandescent bulbs to light-emitting diode (LED) technology, according to Zollo. "One of the most popular suppliers of LED signal lamps to this industry states that LED technology is designed for a 'virtual lifetime,' which is most often 10 years or 100,000 hours," she says. "An incandescent lamp varies from a few hundred hours to several thousand hours. The LED is much more expensive, but you will have cost savings in the end."

ALSTOM also has introduced a new line of low-cost, high-performance LEDs, says John Schultz, vice president of sales and marketing.

Western-Cullen-Hayes (WCH), a manufacturer of signal crossing equipment, is also seeing the shift to LED. The majority of states authorize their use and American Railway Engineering and Maintenance of Way Association (AREMA) issued LED product specifications in 2000. Among the products WCH sells most to railroads are the 12-inch flashing light unit and the gate arm light unit. The two units use less power and are designed to feature better viewing angles with no bulbs or reflective dishes.

## Tied in to the market

Prominent among track and trackside products is in-tie technology, such as the rod-in-tie layout developed by US&S. In the rod-in-tie layout, rods are protected in a hollow sleeper tie, removing the rods from the crib area where they are more likely to be damaged or obstructed, Hill says. An unobstructed crib area allows for complete machine tamping of the switch layout, increasing layout stability significantly, according to US&S. The design ultimately helps reduce scheduled and unscheduled maintenance and train delays, Hill adds.

At GETS-Global Signaling, the CTS2 switching machine is an in-tie solution that simplifies installation effort and greatly improves total life-cycle cost, according to McKeel. The unit is watertight, needs no scheduled maintenance, allows leveling and tamping of ballast with automatic machines, and is equipped with an electric command and control of position.

A similar in-tie sleeper switch machine, the TM100, has been developed by ALSTOM, which also has developed a new wayside switch machine, the WM 4K.

## Keeping things running

Providing products and engineering support to the rail industry since 1903, ERICO is a longtime provider of lightning and surge protection equipment, offering a variety of rail grounding and welding products and applications.

ERICO initially supported the rail industry with power bonds, signal bonds and related welding equipment for street

railway systems, railroads and mines, and has continued to enhance the rail product line with the addition of clips, mechanical connectors, grinders and associated tools, including CADWELD® exothermic connections, CRITEC® surge protection devices and ERITECH® lightning protection systems. ERICO's "Total Facility Protection Plan" reflects an engineered approach to reliability designed to help rail customers save thousands of dollars in damage, operational downtime and lost business opportunities.

Precision Quincy Corp. provides a line of signal equipment shelters that are used in transit settings, says Steve Switzer, vice president of sales. The *RB Series* of shelters come in galvanealed aluminum or

steel, with options including protective air conditioning cages, fire suppression systems and security/alarm systems. The company recently developed a new line of shelters designed specifically for freight railroads, according to Switzer.

Safetran has developed advanced-design, solid-state crossing controllers designed to provide more precise crossing control, improved levels of reliability, and reduced installation, maintenance and ownership costs. Safetran also offers its *SEAR II* systems, which monitor, analyze, record and report on — often remotely — equipment operation. This technology offers the potential for even greater levels of remote performance monitoring in the future, the company says.

S&C Distribution also provides a range of testing and detection products, including track circuit short finders, ground testers, high-water detectors and rough slide detectors. Railroads are showing interest in the *Model 340* tester, which simulates motion at grade crossings. "It allows the person doing this test to be at the crossing and it allows him to observe the equipment found at the crossing," says Schaefer.

## Going wireless

Wireless technology applications also continue to increase. Lat-Lon recently introduced a three-axis version of its *RailRider™* wireless impact detection unit. Along with reporting truck hunting activity, *RailRiders* are now able to provide information on a wide spectrum of car activity, including track anomalies, the condition of the running gear and car handling, according to Felty.

"We are finding this broad range of car data is of interest to numerous departments, including marketing, damage prevention, mechanical, operations and transportation," he says.

Also gaining interest is Lat-Lon's wireless locomotive monitoring system. Four short lines currently use the system, which provides essential data needed to monitor and manage locomotives, according to Felty. The company also has started deploying an AAR-approved on-board system for hot bearing detection on a select group of tank cars.

The wireless remote authority application is being touted by US&S as a system that can play a prominent role in freight railroad efficiency. The system enables track authorities to be entered and removed by work crews with minimal dispatcher

**CLASS I CUSTOMERS** reap  
dividends from technology  
designed with **SHORT-LINE**  
**POCKETBOOKS** in mind

intervention. Authorities are managed by a remote device such as a personal digital assistant (PDA), according to Hill. The PDA is linked via wireless connection to a server and the US&S CAD system, or a stand-alone authority system.

### More foreign flavors

While North America remains the primary market for many C&S suppliers, there has been increasing demand emanating from Europe, Asia, Australia and South America, offering opportunities as well as challenges for suppliers.

Safetran sees greater international interest in some of its products as the cost-effectiveness of North American equipment design is recognized by overseas product and equipment purchasers. Railroads in the UK, for example, are testing U.S.-style grade crossing predictors.

But different standards and safety requirements, as well as differing traffic demands, can make production and implementation of North American-based products a challenge. "Products in North America tend to be more robust due to the nature of the freight it carries, higher weights and the continental market served," says ALSTOM's Schultz. "In Europe, for example, product functionality is driven by a higher emphasis on passenger transport."

The Copenhagen Metro rail line, featuring US&S's automatic train control (ATC) technology, needed CENELEC certification before the first phase of the line became operational last year. CENELEC is a non-profit organization dedicated to

establishing common technical standards for implementation across national boundaries throughout Western Europe.

Still, says Schultz, many European countries have their own standards, necessitating customized products. "The need for standardization is becoming paramount across suppliers and countries," he adds.

### Focus on safety

As C&S technology continues to adapt and grow to meet the cost and productivity demands of freight and passenger railroads, one underlying factor also will continue to be the ultimate market driver: safety.

"What makes the C&S product area unique is the need to be obsessive about safety and reliability," says McKeel of GETS-Global Signaling. "Not only do you have to have high-tech products, but they need to have a long life and operate reliably over the long haul."

Jon Schaefer is confident that C&S suppliers will continue to meet the safety demands of the railroads and its regulators. He has only seen it get better over the past few decades.

"Our railroads represent the most quintessentially safe industry," he says.

*Robert J. Derocher is an Oak Hill, Va.-based free-lance writer. This article appeared in the October 2003 issue of Progressive Railroading magazine.*