

The Next Generation of Microbulk: Taylor-Wharton to release Express III microbulk unit before end of year; Chart Industries to roll-out the new Orca PT-1000.

Microbulk Growth Platform — 'Moving Molecules Instead of Metal'

by Brad Kuvin

The concept is well understood: Instead of transporting banks of high-pressure or liquid cylinders to customer sites and exchanging them for empty cylinders (of course, they are never really empty), gas distributors can reduce delivery costs and customers can pay only for what they use thanks to microbulk distribution. Microbulk provides the efficiency and economics of bulk without the site preparation work and other costs that typically go along with bulk tanks. And there is a much smaller space requirement. Since 1996, when microbulk trucks first hit the streets along with their accompanying installed fleet of specially designed storage vessels, gas customers—metal fabricators, laboratories, healthcare facilities and others—have enjoyed reduced costs of storage rental, products and most importantly, the labor for moving and handling individual high pressure and liquid cylinders. The distributor benefits from higher delivery and sourcing volumes, potentially lower product purchase costs, and building the platform for higher volume bulk business.

"Based on our working experience with 150-plus microbulk trucks and 55 gas suppliers," says Bill Haukoos, Microbulk Product Manager at Chart Industries, "we have observed that most end-users embrace the significant residual-gas savings and convenience of a microbulk program compared to transportable cylinders. Residual cylinder volumes can be as high as 15 to 20 percent. Also, to pay for their microbulk trucks and vessels many gas suppliers focus on larger accounts and liquid throughput in the beginning. But the greatest number of microbulk opportunities still exists with smaller end users, from 3000 cubic feet per month."

Gas suppliers that have already delved into microbulk are fueling a "second generation" wave of business, according to Taylor-Wharton.

"Now that the economy has picked up, we are seeing microbulk gaining new-found momentum," says Scott Boyd, Taylor-Wharton Vice President of Sales and Marketing. "Growth is becoming as strong as it was three or four years ago, because there are new customers out there and several of the major gas producers are getting into it as well. We're also seeing that the distributors with one or maybe two trucks are looking now for another truck to build up their fleets. This type of expansion results from suppliers looking to expand into new markets, with the goal being to become more of a gas supplier and less of a hard-goods distributor."

Airgas and Praxair Ride the Wave

Two major suppliers with large microbulk programs in place, Airgas and Praxair, confirm Boyd's view of the market. "We see all market segments for microbulk picking up equally, and all are pretty robust," says Praxair's Janet Coffman, Vice President of Marketing for PDI. Praxair has placed some three dozen microbulk trucks on

the streets since it entered the microbulk market in 1999, and Coffman expects that it will continue to put six to eight new trucks on the street each year.

Airgas's Ray Homan, Market Development Manager for Industrial Gases, says that six of the firm's 13 regional companies already have more than one microbulk truck (Airgas has 25 microbulk trucks around the country, including nine gained from its July 2004 purchase of the U.S. packaged-gas business of The BOC Group). "In

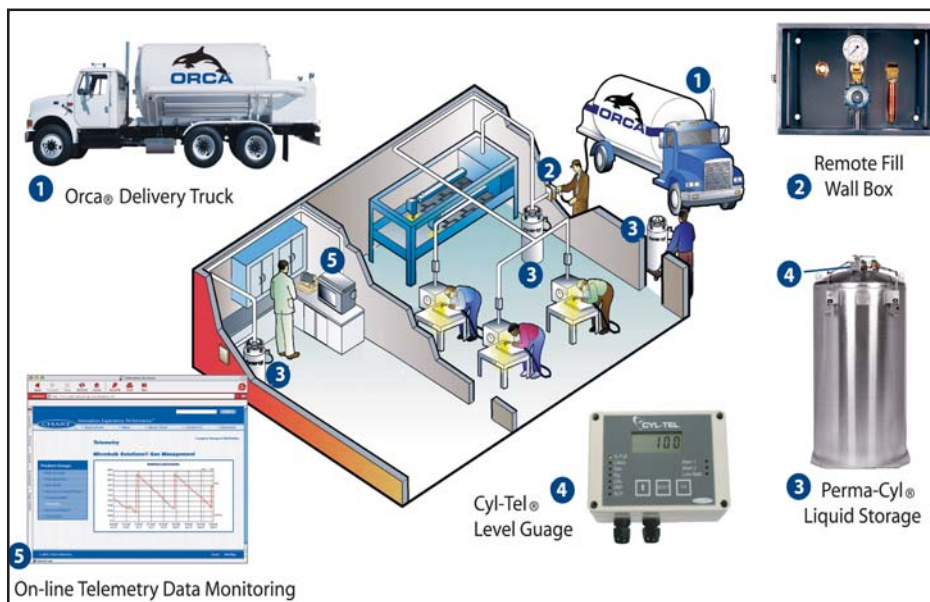


Illustration courtesy of Chart Industries

Chart Industries' Microbulk Delivery System starts with an Orca truck (1) for quick and easy filling through a Wall Box (2) to Perma-Cyl liquid cylinders (3). When the supply of industrial gas gets low, the Cyl-Tel Telemetry System (4,5) will notify the gas supplier, who returns with an Orca truck and quickly refills the cylinders.

the next few months we will launch vehicles into new markets, and over the next year, several regions will get their second vehicle," he says.

"Microbulk has been more successful than we had expected it to be when we launched the program," says Praxair's Coffman. "We've refined our approach to the customers and to the markets, to deliver more value. We're receiving more additional business—non-microbulk business—from our microbulk customers than we had estimated, or a greater share of wallet. I'm talking about other cylinder gases and all of the hard goods, for instance."

Echoing Coffman's views, Michael Beckley, CEO of Wesco Gases Inc. (formerly Wesco Redwood), of Redwood, CA, has seen countless end-users grow their businesses thanks to Wesco bringing them the microbulk concept. As a direct result, Wesco has grown right along with them, selling more related products and hard goods as well as more microbulk products. Beckley purchased the very first Taylor-Wharton microbulk truck (an Express I) back in 1997, ordered a second truck just six months later and has a third truck on order.

"This is the future, and you had better get on board," says Beckley. "In the next five years, in my opinion, the number of gas distributors will be cut in half. Distributors must get their businesses ready to handle \$10-15 million in orders per year to have the strength to survive. We're doing this by getting bigger alongside our growing customers. Where we start them off with a 450-liter vessel, then maybe grow them into a 1000 or 1500 liter, the savings—for us and them—continue to multiply."

Myles Dempsey, Jr., President and CEO of Tech Air based in NY and CT, offers another perspective. "From the customer's standpoint, we have found that microbulk is a better performing and more reliable system by far than liquid cans," he says. In the mid-1990s, Dempsey visited England with Dan Byrne of Byrne Specialty Gases to evaluate microbulk. In 2000, Tech Air had an opportunity to service a large cryo-preservation facility in New York City and then made the investment in a Chart Orca system which has helped open doors into new markets. *Editor's Note: To read a feature article on Tech Air, see the Aug/Sept 2004 issue of CryoGas International, "Tech Air - Investing in Technology and the Future."*



Photo courtesy of Harsco GasServ

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fabrication markets. Airgas also now offers vessels ranging from 230 to 2000 liters. This trend has microbulk suppliers crossing over into small bulk deliveries, precisely the strategic move made by Airgas when it entered the microbulk market a couple of years ago.

When Airgas launched its microbulk program early in 2003, it worked with Chart to introduce a custom 3300-gallon delivery truck to meet its specific needs. Taylor-Wharton also has a 3300-gallon truck, and in addition offers its microbulk filling system as a retrofit kit to upgrade standard pumper trucks for 60 percent of the cost of a new one.



Photo courtesy of Harsco GasServ

Taylor-Wharton's Tim Miller, Director of North American Sales, tells readers to look for a new Express III microbulk unit from Taylor-Wharton before the end of the year, also fitted with a new type of delivery system. "It will result in a lower entry-level cost into the microbulk world," says Miller.

customers." High volume and high flow capabilities helped Airgas tap the burgeoning laser market, where a single 2000-W laser can consume as many as 40 liquid cylinders of nitrogen every month. Homan says that Airgas has four vehicles in the U.S., including units in Chicago, Atlanta and Oklahoma, and two new trucks on order, specifically serving the laser-nitrogen market.

The typical microbulk customer is using 20,000-25,000 cubic ft. per month of nitrogen, according to Chris Granger, Praxair Product Business Director, Industrial Gases. "That's at least twice as much volume consumed by microbulk customers of argon. In fact, some use more than 100,000 cubic ft. per month of nitrogen."

Chart estimates that of the 6000-plus laser-cutting machines installed in North America, some 40 percent fit the market profile

"The main advantage in upgrading customers from liquid cans, especially for nitrogen laser customers, is in productivity, performance and reliability," Dempsey adds. "There is really no comparison. Additionally, liquid cans have a very high maintenance cost, whereas the Perma-Cyls used in the Chart system eliminate that since they remain stationary," says Dempsey.

Bigger Systems Feed Nitrogen to Lasers Cutters

Bigger is the trend, as the original microbulk concept has grown into larger trucks and vessels. Chart, with design assistance offered by Praxair, introduced a 2000-liter vessel late in 2003, several of which have been installed into the laser and metal-

for microbulk gas delivery and is available for penetration. Further, the installed base has been forecast to more than double by 2011, to some 15,000 units.

Argon Blankets the Lab Market

A market experiencing even faster growth, and ripe for microbulk delivery—of argon—is inductively coupled plasma (ICP) machines, used in research laboratories to determine the

chemical composition of substrates. These machines run on a continuous blanket of argon, and lab personnel don't want to be encumbered by having to change cylinders, according to Chart Industries' Tim Neeser, Director, New Product Development and Marketing. Chart estimates that there are nearly 6000 ICP machines currently in the market and that another 1000 will enter the market annually. To satisfy this market, Chart is marketing an all-stainless-steel tank. Eight of its vehicles—Orca and custom Airgas units—are out there already serving this market.



Photo courtesy of Chart Industries

"Chart Industries is rolling out a lower cost 1000-gallon truck, dubbed the PT-1000, aimed at helping distributors convert some oxygen business to microbulk," according to Tim Neeser, Chart Industries' Director of New Product Development and Marketing. "The PT-1000, which uses new pulse-delivery technology," says Neeser, "will also be perfect for the distributor as a starter unit and the distributor that services smaller markets."

perfect for the distributor that just doesn't have enough accounts to justify the cost of a traditional Orca. Because not every company can afford three different trucks for the three gases, many will operate two trucks, one for nitrogen and one for argon. This can hamper their sales efforts because they may not be able to satisfy the market needs for oxygen."

Neeser estimates that the pump-less PT-1000, with its pulse technology for filling Perma-Cyls, will cost one-third less than the bigger Orca truck. As a result, it should significantly reduce the number

While lately Chart has banked on high-volume nitrogen and argon accounts for feeding its microbulk product line, Neeser tells *CryoGas International* that it will soon roll out a smaller 1000-gallon truck, dubbed the Orca PT-1000, aimed at helping smaller distributors convert some oxygen business over to microbulk.

"The smaller truck, which uses new pulse-delivery technology," says Neeser, "will also be



Photo courtesy of Airgas

Microbulk-truck driver Kenneth Alexander of Airgas refills a nitrogen vessel at metal fabricator Cutting Edge Laser, Covington, GA. Before installing its microbulk system, the company kept up to 10 liquid cylinders onsite.

governmental institutions to build new labs, creating new opportunities for microbulk delivery.

“The selling feature to those firms,” Miller continues, “comes from the fact that most are currently being serviced by a supplier

and size of accounts needed to return the distributor’s investment.

Cryo-Bio

Yet another promising market distributors can look to, according to Taylor-Wharton’s Tim Miller, Director of North American Sales, is cryo-bio—pharmaceutical, blood and tissue banking, biotech, etc. “All of these areas have critical demand for gas flow, to avoid wasting millions of dollars and years of research. New research programs are causing universities and gov-

ernmental institutions to build new labs, creating new opportunities for microbulk delivery. that is rotating cylinders in and out of their lab. The cylinders may be coming from a scrap yard or metal fabricator, and these labs need to know that their gas vessels will be free of contamination. That’s an ideal atmosphere for a supplier to come in with a permanently installed and refillable microbulk vessel.”

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Knowing and Meeting Customer Needs — The Key to the Future

To help their gas supplier customers leverage their existing microbulk programs into new markets, and perhaps to make them knowledgeable enough in the market opportunities for microbulk delivery to add a second or maybe a third truck to their fleets, Taylor-



Photo courtesy of Chart Industries

The Perma-Cyl can hold its liquefied gas contents for long periods without venting, thus limiting product losses during periods with little or no gas use.

Wharton, Chart, Airgas and Praxair have invested significantly in marketing and sales support. Sales specialists and technicians work with distributors to train them to help end-user customers understand how to install the tanks and piping, and calculate flows and pressures. They use sales survey forms and economic analysis tools that help distributors sell based on the unique needs of each market and the customers within those markets. Consider this compilation of quotes from two satisfied end users of microbulk delivery (both being serviced by Praxair trucks):

“The transition from cylinder gas to microbulk was seamless...the system has performed exactly as expected.”—Westmont Metal Manufacturing, Broadview, IL

“Installation of a microbulk tank eliminated the hassles associated with numerous tanks throughout our plant. And, we really like getting only one invoice each month for gas.”—Bay-Con, Fremont, CA

New market opportunities, and soon-to-be-released new offerings from Taylor-Wharton and Chart have suppliers and distributors licking their chops. “We see significant market potential yet for microbulk programs,” concludes Praxair’s Coffman. “We think that microbulk could potentially capture 15 percent of the gas volume delivered today. It’s nowhere near that right now.”

If projected market trends from Chart are any indication—it figures that microbulk currently owns two percent of the gas volume delivered today and projects that market share to grow to seven percent in five years—then we’re in for many more generations of microbulk gas delivery. ■

