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LEADERSHIP IN MANUFACTURING

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## DST Output of California, LLC: IW Best Plants Profile 2007

Resolution For The Future: DST Output reinvents itself to stay on top of the printing queue.

*Tuesday, January 01, 2008*

*By Nick Zubko*

**DST Output of California, LLC, Eldorado Hills, Calif.**

**Employees:** 1,210, non-union

**Total Square Footage:** 576,475

**Primary Product/market:** print statements and billings

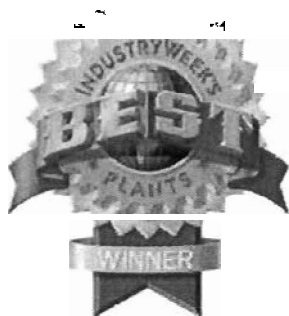
**Start-up:** 1988

**Achievements:** IW 2002 Best Plants winner; received certification and designation as a quality mailing partner in the U.S. Postal Service's Mail Preparation Total Quality Management program in 2005

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With e-mail having long since replaced the personal touch of a handwritten letter, the average person's daily mailbox inspection isn't filled with much excitement these days. They usually walk away with a handful of junk mail (most of which is instinctively discarded) and a few additions to a growing pile of unpaid bills.

### IW's 2007 Best Plants



[See the other winners of](#)

While the arrival of the latter might cast a grim shadow on the rest of the day for some, it's what gets people up in the morning (and also in the evening) at DST Output of California, LLC, a subsidiary of DST Systems Inc., which provides integrated print and electronic statement and billing output solutions to some of the largest companies in the world.

The facility in El Dorado Hills, Calif. (one of three based in the United States), was named one of [IndustryWeek's Best Plants in 2002](#), but instead of basking in the glow for too long, it went straight back to the drawing board. A couple years later it reinvented the entire operation, marked by a shift to lean manufacturing and a dramatic upgrade in printing technology – one that moved it away from the comfort of long-accepted toner-based systems to a promising, yet uncertain,

**IW's 2007 Best Plants** award and find out how they made the top ten.

future in the four-color world of inkjet.

Designed to help increase flexibility and produce a higher-quality end product, the upgrade involved taking an operation that hummed on 100 printers down to only 12. Such a monumental change was sure to be met with trepidation, and according to Scott Shelton, senior vice president of DST Output's West Coast operations, there wasn't necessarily anything wrong with the plant just the way it was. Still, he admits that it might not have survived in today's marketplace if significant changes weren't made.

"We started to look at where we needed to be in a few years based on economic trends," explains Shelton, who worked his way up the company ranks since he started on the plant floor more than 28 years ago. "One thing we saw was that toner printers would not carry us into the future. Back [in 2002] we never dreamed of doing a billion images. Because of these changes, we've been able to surpass it."

Along with the transition to inkjet, the plant also upgraded its inserting technology with eight new machines. Within 45 days of going live, the advanced units (which were expected to exhibit a 15% efficiency gain) were outpacing their predecessors by over 20%. As the tweaking process continues, Shelton estimates that when year-end metrics are evaluated for 2007, the overall efficiency gain will clock in at over 30%.



A technician moves printed statements through an advanced envelope insertion machine.

An important part of the plant's successful reinvention was a move to lean manufacturing, which has included the purchase of several touch-screen monitors used for efficient tracking of orders and inventory calculations. Now a critical component to controlling workflow, the results speak for themselves. In the last three years, the plant has experienced a 28% reduction in cycle time and an 87% reduction in its customer reject rate. On-time delivery hasn't missed a beat either, reaching 99.2%.

"The new printers completely changed the way this place operates," Shelton says. "The sheer workflow changed drastically because of the speed and the reduced number of machines, and if we hadn't done the lean manufacturing in conjunction with all of that, we'd be in big trouble. Because if you can't get materials to the machine in a timely manner, and in a consistent, even flow, then it doesn't matter how fast any new machine is going to run."

## Web Exclusive Best Practices

### Efficiency on Display

*Home-grown technology helps production flow smoothly.*

When the El Dorado Hills facility of DST Output of California, LLC reduced its number of printers by over 90% three years ago (switching from laser to inkjet), it became clear that a lack of toner cartridges wouldn't be the only big change on the plant floor.

### 2008 Nominations

**IndustryWeek** is now accepting nominations for the 2008 IW Best Plants Program.

Since less equipment means less margin for error, management decided it needed to completely change the way the factory operated - the thought process, the methodology and how the workflow was controlled. They were so convinced, they abandoned an expensive PSR (production status reporting) system in the early stages of the process -- replacing it with an advanced mapping technology developed by none other than the guys on the floor at DST Output.

"The great thing about these [mapping] systems is that they were developed by the people who actually use them," notes Scott Shelton, senior vice president of DST Output's West Coast operations. "We call it 'skunk works' or just an unsanctioned project. Those are really my favorite kind, because they seem to be the most successful."

Using sophisticated touch-screen monitors, the technology allows anyone on the floor to track an order's progress on one of the 40-inch flat-panel displays mounted at strategic locations throughout the plant. It was also adapted to 8-inch displays installed on all the warehouse lifts, able to supply operators with real-time inventory calculations and up-to-the-minute delivery needs at each workstation.

The screens map out the warehouse and tie into production controls for the rest of the factory, dramatically reducing the amount of time wasted by traversing over a half-million square feet on foot.

"The guys in the warehouse used to have to walk over to a PC at a data station to accomplish these things," Shelton explains. "Now they don't need to run back and forth all the time -- which is how they were spending at least 25% of their time."

The innovation has brought a new level of connectivity to the plant's printing, inserting and material grids -- which were previously independent functions. They have been so successful in controlling workflow through the plant that similar systems have already been rolled out in the other two DST Output sites in the United States.

### Inserting New Ideas

*Home-grown technology helps production flow smoothly.*

In addition to overhauling its printer operation, DST Output's El Dorado Hills facility has also made important changes to its envelope inserting fleet. Instead of attempting to convert the existing equipment, the plant built eight brand new units, which involved switching around the orientation, changing symbologies, shifting to 2-D barcodes and updating readers.

Before the new machines were up and running, blank paper was run through them to make sure all of the quality triggering devices and everything else worked. According to Scott Shelton, senior vice president of DST Output's West Coast operations, the inserting upgrade was more successful than he ever imagined. And like most of the plant's ideas lately, that was due in large part to being conceived through a series of kaizen events contributed to by engineers, technicians and floor

### Meet the Winners in Milwaukee

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workers.

At this facility, kaizen events are utilized frequently and are highly encouraged. However, according to Shelton, it took time and effort to create the right environment. He explains that since Sacramento is such a large melting pot of cultures and ethnicities -- with DST Output itself employing several non-English speaking employees -- the plant recruited translators not only for training purposes, but also to give those employees the opportunity to make suggestions for the betterment of the plant's operation.

Shelton adds that some of the plant's employees come from cultures that perceive offering their employer feedback as impolite or even a form of insolence. So management made sure its position on the matter was well understood. "We explained to everyone that it's okay to speak up; we want to hear their input and their feedback," Shelton explains. "If you have a better idea or a better way of doing things, we'll go try it out. That's why I really enjoy the kaizen events -- because it's the team that is redesigning these things. And it's much more prevalent today than it's ever been."

While the new inserting machines have proven successful over the last couple of years, the facility is already eyeing a few potential upgrades. DST's engineers and operations team are investigating new technologies and when they find the right one, Shelton says the same team that got the last one running will bring it in, tear it apart, add any necessary quality devices, and integrate it onto the floor.

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## IW Best Plants 2007 -- Models of Success

IndustryWeek's 2007 Best Plants deliver many routes to operational excellence.

*Tuesday, January 01, 2008*

*By Jill Jusko*

The **IndustryWeek** Best Plants program is an annual celebration of world-class manufacturing and continuous improvement practices within North American companies. All well and good, but when it comes to determining which 10 factories are truly the "best plants," perhaps the most important distinction is their effectiveness.

Just how effective, for instance, are the employees at [Cargill Corn Milling-Team Wahpeton](#)? Effective enough that the larger Cargill business unit has pulled many personnel from the North Dakota manufacturing plant and placed them elsewhere to share their expertise among other Cargill locations. Indeed, since 1997 more than 60 workers from Team Wahpeton have been promoted to locations outside of Wahpeton. And in the past year, more than a third of Team Wahpeton employees have spent significant time at other Cargill operations to help with projects, troubleshoot and provide expertise.

At [General Cable-Indianapolis Compounds](#), multifunctional employees are vital to keeping this plant running effectively and efficiently. Indeed, 100% of the hourly production associates with more than a year's experience are cross-trained in all three of the facility's production job classifications. The plant, which produces polymeric compounds, also benefits from a strong corporate manufacturing excellence program that spreads best practices across the entire General Cable enterprise.



[DST Output of California LLC](#), in El Dorado Hills, Calif., writes in its 2007 **IW** Best Plants application: "Each step of the production process receives constant scrutiny to combine the latest technology and employee bright ideas to improve speed and quality." This facility, which produces first-class mail products such as statements and invoices for clients, is a two-time **IW** Best Plants winner. Its [earlier honor occurred in 2002](#).

And at [Lockheed Martin Missiles and Fire Control in Orlando](#) -- one of two Lockheed Martin plants whose stories are told in the following pages -- and [Autoliv North America-Tremonton Initiator Facility](#), and others, kaizen events help drive improvements throughout the facilities.

These six plants, as well as the other four that comprise **IndustryWeek's** 10 Best Plants in 2007, are engaging their

**Facility**

Tremonton, Utah

**Batesville Casket Co. --****Vicksburg Operations**

Vicksburg, Miss.

**Blue Bird North Georgia**

Lafayette, Ga.

**Cargill Corn Milling --****Team Wahpeton**

Wahpeton, N.D.

**DST Output of California, LLC**

Eldorado Hills, Calif.

**General Cable -****Indianapolis Compounds**

Indianapolis, Ind.

**Lockheed Martin Missiles and Fire Control at Ocala**

Ocala, Fla.

**Lockheed Martin Missiles and Fire Control at Orlando**

Orlando, Fla.

**Medrad Inc., Heilman****Center Plant**

Indianola, Pa.

**Rieter Automotive****Canadian Carpet**

London, Ont., Canada

employees, deploying new technologies and collaborating with their supply chain partners as they pursue efforts to be the best. They're deploying a wide variety of technologies, while manufacturing a very diverse group of products. And by no stretch of the imagination are their improvement methodologies all patterned on identical models.

So other than their effectiveness, are there other common traits that describe all the **IW** Best Plants? Yes – all of them are aligned in an unending pursuit of excellence and an understanding that such a state has not been reached. They're aligned in recognizing that they can't be leaders in their industries without their employees' support. And they're aligned in a mission of successfully tackling the challenges of being a 21st century North American manufacturer.

The metrics tell the tale: Customers of Lockheed Martin's Orlando facility benefit from the plant's on-time delivery rate of 100%. First-pass yield at Cargill's Team Wahpeton is 98.2%. Among the 10 **IW** Best Plants winners, scrap and rework costs are a median .5% of sales and standard order to shipment leadtime is down a median 41% in the past five years.

Also worth repeating is the mantra of many an **IW** Best Plants winner, both former and current: Be on the lookout for good ideas everywhere. In these following pages, you can be certain to find many good ideas in your own continuous improvement efforts.

As a final note, the 2007 **IW** Best Plants stories aren't confined to these magazine pages alone. The online versions contain additional Web-exclusive best practices – and even a short video. See the Best Plants section for more.

### How They Made The Top 10

**IndustryWeek** began accepting nominations for the 2007 **IW** Best Plants awards in October 2006. Approximately 165 plants were nominated as leaders in their industries. A panel of **IW** editors reviewed the completed applications, which reported management practices and plant performance in such areas as quality,

customer and supplier relations, employee involvement, application of new technologies, productivity, cost reductions, manufacturing flexibility and responsiveness, inventory management, environmental and safety performance, new product development, and overall market results.

Selection of the final winners from the list of 21 finalists was aided by a team of outside experts: Sherrie Ford, principal, Change Partners LLC; Robert Hall of the Association for Manufacturing Excellence; and Kenneth McGuire of the Management Excellence Action Coalition. Their evaluations, along with additional information provided by the finalists, were considered in the final

stage of judging. The selections did not become final until site visits by **IW** editors to validate the performance data and management practices reported in the applications.

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### **Continuous Improvement E-newsletter**

To read more about this year's 10 winning factories, subscribe to the **IW** Continuous Improvement newsletter, which features best practices and the lessons learned from the management teams of the 2007 Best Plants winners. [Sign up today.](#)

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### **Nominations For 2008**

IndustryWeek is now accepting nominations for the 2008 **IndustryWeek** Best Plants competition. Manufacturing facilities in the United States, Canada and Mexico are eligible. To nominate a facility, use the nomination form.

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