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Serving the information needs of the international aluminum extrusion community • Volume 9/Issue 2

## Waste

### Part 4

by Roger A.P. Fielding, *BENCHMARKS*

**I**n this, the fourth of our articles on waste, we draw attention to the impact of waste on the competitive position of the extruder in a rapidly changing marketplace.

The benchmark extruder is one who extrudes, finishes, and fabricates aluminum lineals, operating with a lead time—between order entry and delivery—of 3 to 4 days. How does he do this? By eliminating all waste.

The previous three articles in this series listed the sources of “waste” to be found in many extrusion operations, and provided an explanation and cure for a number of them. But why is the list so long? And how, if things are so bad in so many extrusion plants, do they stay in business? Obviously, these extruders still make a profit—in spite of their waste.

The incentive to improve one's extrusion operations is to be found in benchmark comparisons with other extruders. Conversion cost, the total cost of converting aluminum billet into a pound of saleable extrusions, is the only meaningful measure of comparison. And comparing conversion costs with those of competitors will prove that the extruder who

operates with minimum lead times also achieves the lowest conversion costs.

Many years ago, when I was working for an extruder who ran a very successful business (when measured in normal financial terms: cash flow, profit per pound shipped, return on capital employed, etc.), I questioned a competitor's investment in new equipment. By using the tools of competitive analysis, I was quickly able to understand the potential impact of the new equipment on his business and to demonstrate its effect on his conversion costs. For, although the initial investment could be shown to substantially reduce his return on capital employed, its impact on conversion costs was dramatic, making him highly competitive in what was then a falling market for extruded products.

That is not to say that the only way forward is to invest in new equipment. On the contrary, an understanding of the sensitivity to change (including capital investments) in the market in which you operate is essential if you are to survive in this increasingly competitive environment. So also is an understanding of



the sensitivity of your own conversion costs to every aspect of the conversion process from incoming billet and dies to the shipment of mill finish, painted, anodized, or fabricated extrusion product.

The previous articles identified the potential for waste caused by defects in the aluminum billet or log supplied by the prime or secondary billet producer. The first of these articles focused on dimensional problems, surface defects, and evidence of internal defects; later articles emphasized the problems that can occur when compositional and other casting defects are present. The suppliers should provide and adhere to published standards listing the dimensional and metallurgical measures of quality.

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Lawrence R. Difatta  
President of Granco Clark



*What's the driving force behind business? Some might argue that it's money—but, over the long run, I believe it's ideas that have the greatest impact.*

*Consider our industry, for example—a hundred years ago, it didn't exist. Aluminum used to be considered a precious metal, costing more than \$500 a pound in 1850. Then, in 1886, an inventor came up with an inexpensive way to extract pure aluminum from other minerals. By the early 1900s, the price of aluminum had dropped to less than 30 cents a pound. Only then did people begin to realize aluminum's potential for use in a wide range of products.*

*And just in the last decade, we've seen significant changes in the larger business world. Ten years ago, many of us had never even heard of the Internet. Money may no longer be flowing freely to dot-com companies, but that hasn't changed the fact that the Internet and e-mail have become business tools as essential as the telephone.*

#### **Innovation's Key**

*No matter what industry you're in, innovation is essential to continued success. Insist on doing things a certain way just because "that's the way they've always been done," and you're certain to be left behind.*

*In this issue of the newsletter, we discuss the value to be gained from trying something new; how small risks can translate into big gains. We present the fourth in our series of articles on waste, which focuses on why taking steps to reduce your standard lead time is so essential—innovation in this area can really pay off in reducing your conversion costs.*

*We also update you on one of our own innovations. Last year we introduced the Granco Clark Precision Finish Saw. This year, Modern Metals magazine visited J.V. Products—the first customer to purchase the saw—to follow up on the new installation. We were very pleased to find that the saw has become an essential tool in helping the plant's operations run more smoothly and efficiently.*

*Granco Clark also recently welcomed two new employees—Michael Werner as Sales Engineer and Steve Siedlecki as Manufacturing Manager. The ideas and experience they bring to the table will be invaluable to our customers as we strive for continuous innovation.*

# The "Super Saw"



Granco Clark Precision Finish Saw

Last year Granco Clark introduced its Precision Finish Saw to the industry. J.V. Products Co. in Arcanum, Ohio, became the first customer to install the new saw in November of 2001. A supplier to the automotive industry, J.V. Products manufactures nearly 6 million components a year—almost all of which begin with a saw cut.

J. Neiland Pennington of *Modern Metals* magazine recently visited the company's plant. Here are a few highlights of what Jerrie Smith, president and chief executive officer of J.V. Products, and Clay Smith, plant manager, told *Modern Metals* about how the precision finish saw has impacted their operation:

#### **On Speed**

Jerrie Smith: "We currently run two shifts and were sawing on both, but we could barely keep up with demand. For one part, an air conditioning manifold, we used three saws and were still hard-pressed."

Now, he says, "We are cutting two other jobs in addition to the manifold on the new saw,

and we need to run it only one shift for all three part numbers."

#### **On Benefits**

Clay Smith: "A big advantage of GC's precision saw is that it cuts extremely square. A problem we've had with our single-cut saws is not getting a perpendicular cut.

"We haven't eliminated any machining operations, but the saw has reduced the amount of metal we have to remove. We previously cut our parts with some additional length to compensate for parts being out of square. With the Granco Clark saw, we can reduce the machining allowance and cut parts closer to the finished dimension. We're still machining, but we're taking off less metal."

#### **On Training**

Clay Smith: "We have three people trained on the saw, and they had absolutely no problem adapting to its operation. They picked up most of the functions in one afternoon."

#### **The Verdict**

Jerrie Smith: "It's going to save us money; no question about that. It's going to allow us to transfer people who were running saws to other areas, and it's going to eliminate a lot of scheduling problems. Granco Clark calls it the precision finish saw, but everyone here calls it the super saw." ●

For the complete article, see "Extrusion Fabricator Speeds Finish Sawing" by J. Neiland Pennington, *Modern Metals*, April 2002, p. 53-57

# Uncle Sam Provides Great Incentives for Investing in New Equipment

The IRS recently set forth several new depreciation rules as part of an economic stimulus package. The new regulations offer favorable incentives for business equipment purchases, allowing these assets to be written off much more quickly.

Previously, when purchasing equipment with a 5-year life for depreciation purposes, you could typically deduct only 20 percent of the cost in the first year, when using accelerated depreciation (MACRS). However, the new rules allow you to depreciate 30 percent in the first year for non-real estate assets purchased after September 10, 2001, and before September 11, 2004. The remaining basis (the 70% that's left) can be depreciated under normal MACRS rules.

The benefits are even greater for smaller businesses. Section 179 of the tax code allows companies whose capital purchases are under \$200,000 to depreciate up to \$24,000 right away.

For example, say you make a \$100,000 purchase of a 5-year MACRS asset. Under section 179, you may take: an immediate \$24,000 deduction; plus \$22,800 (\$100,000 less \$24,000, times 30%), plus \$10,640 of regular MACRS depreciation (\$100,000 less \$24,000 less \$22,800, times 20%).

So, in this case, you could depreciate a total of \$57,440 in the first year—nearly 60% of the asset!

Even if you don't qualify for section 179, you could still depreciate a sizeable amount: \$30,000 (\$100,000 times 30%), plus \$14,000 of regular MACRS depreciation (\$100,000 less \$30,000, times 20%), for a total of \$44,000 of depreciation in the first year.

The message: If you've been considering capital improvements, now's a great time to make the investment. ●

## Waste from page 1

The other major input to the extrusion process—the extrusion dies—were referred to in the last article. Die suppliers and extruders should establish agreed-to standards against which the dies can be measured. Once the inputs conform to accepted standards, the extruder has only himself to blame if waste occurs.

We must assume that our previous articles on waste have resulted in the preparation of checklists for maintenance personnel and setting out the standards for the operation of the machines, including billet furnaces, billet saws or shears, the extrusion press (and its ancillary equipment), the run-out conveyor, puller(s), the cooling table, handling system, stretcher, saw table, and saw.

Because the extrusion of aluminum alloys is a metallurgical process, the

temperatures of the billet, dies, and container are the critical process variables. When all three temperatures are correct, the control of the process becomes, for most common alloys, a case of controlling the ram speed.

Management of time is, as stated previously, the other variable that is entirely within the control of the extruder. The average billet cycle, calculated by dividing the total time—in seconds—available in a given year by the number of billets extruded is, for many extruders, a disappointing number. It shows all too clearly just how much time was wasted.

The second article focused on the management of time and of materials, specifically aluminum. It emphasized that the press should cycle as the manufacturer intended. That there should be minimum time wasted

between pushes and at die changes. That the time taken for die trials, press system maintenance, and other stoppages should be minimized and the extrusion cycle—when the press is earning money—should be as short as possible.

Most extruders produce significant quantities of AA6063 type alloys. But many don't come near the benchmark scrap level—which is less than 10 percent of the billet loaded into the container—resulting in the use of too many billets and the generation of excessive amounts of scrap. An audit of waste will show where it's being generated.

Cost benefit analysis will measure the financial returns to be made by doing it right, and will show that lead time is the integrated measure of manufacturing performance. ●



# New Equipment Installations

## North America

### Alumiform, Inc.

*Chicoutimi, Quebec, Canada*

Fast-paced growth has prompted Alumiform, a leading manufacturer of corrugated tubing, to upgrade its facilities. The improvements included the installation of Granco Clark Model 69-30-3 Hot-Jet Billet Furnace and Billet Taper Quench.

The furnace is capable of heating 7,300 pounds of 9" diameter billet per hour, which will improve throughput capacity and increase productivity. In addition, by processing billets through the taper quench, Alumiform will be able to maintain optimum billet temperature throughout the extrusion process by selectively creating in the billet the temperature gradient necessary for isothermal extrusion.

### Indalex

*Mississauga, Ontario, Canada*

Indalex, a leading North America extruder, recently completed an upgrade of their Granco Clark billet/log furnace and double puller. The furnace upgrades included the addition of performance-enhancing features. The double puller was upgraded to the modern hex guide rail design. This upgrade included cam follower guides, which reduces travel friction, enhancing the puller's performance for better tensioning control and higher-speed operation. A new AC V/F drive was also added to the puller. Based on the success of this initial upgrade, future upgrades have been planned.

### Aerolite Extrusions Company

*Youngstown, Ohio*

Aerolite Extrusions Company recently upgraded their 2500-ton Loewy press line with a Granco Clark 500# Double Puller, Rollover Style Water Wall Quench, and Integral Cooling Duct System. The new double puller system has allowed Aerolite to convert their existing slat-chain-style runout conveyor to Kevlar-covered idle rolls, providing a significant reduction in scrap and improved finish quality.



*Granco Clark Integral Cooling Duct System*

### J.V. Products

*Arcanum, Ohio*

J.V. Products, an extrusion parts supplier to major automotive companies, has installed a Granco Clark Model PCS-824-14 Precision Finish Saw. The saw's cutting window is 24" wide x 8" high with a cut-length capacity ranging from .375" to 192". A ventilation system, with an added rotary valve, was included to substantially improve the removal of saw chips. The sawing system has dramatically increased J.V. Products' ability to produce cut parts superior in accuracy, squareness, and quality of RMS finish, with a reduction of burr on the finished parts.

## Granco Clark Welcomes New Personnel

Michael Werner has joined Granco Clark as Sales Engineer. Previously, Werner worked in the sales department of one of Granco Clark's German competitors.



Werner brings to his new position twelve years of experience in the industry, along with skills in supervising equipment installations. He holds a degree in Electrical Engineering from Fachhochschule Konstanz in Germany.

"Michael has an excellent understanding of the U.S. customer base, and we are honored that he has chosen to work with us," says Granco Clark Vice President John Bugai.

Steve Siedlecki also recently joined the company as Manufacturing Manager. In this role, he will manage Granco Clark's production facility.



Siedlecki has ten years of experience in the material handling industry, and was previously employed by Rapistan-Dematic. He also spent more than six years as plant manager for Phillips & Johnston, a steel tubular product company.

"My goal in this position is to continuously improve our product quality, efficiency, and level of customer satisfaction," says Siedlecki. ●



*Performance. Productivity. Peace of Mind.*

- Lawrence R. Difatta . . . . . President
- John C. Bugai . . . . . Vice President
- Roger Postema . . . . . Systems Manager
- Gerald (Jerry) McPherson . . . . . Systems Manager
- David Jenista . . . . . Systems Engineer
- Douglas (Doug) White . . . . . Sales Engineer
- Michael Werner . . . . . Sales Engineer
- Andrew (Andy) Bucko . . . . . Saw Systems Manager

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