

Caught in a Steel Trap

The steel shortage has been a global phenomenon with causes so complex, so massive and so inevitable that the timing for solutions is nearly impossible to predict, much less obtain. It has affected all of us that depend on steel shot—whether you make it or use it.

A broad picture of the reasons

Contributors to the steel shortage are improving and expanding economies worldwide, the shaky U.S. steel industry, and higher fuel and shipping costs. Nothing, however, has shaken the steel industry in the past few years like China's voracious appetite for steel—the steel needed to feed its rapidly-expanding economy. Since 2001, China's consumption of steel has increased by 30 million tons annually to reach 250 million tons in 2003. This keeps China No. 1 in steel usage in the world, surpassing the combined sum of those in the United States and Japan. The International Steel and Iron Association predicted that by 2005, China will consume 31 percent of the world's total. The China Daily Global Newspaper predicts that China's steel consumption will not reach its peak until 2010.

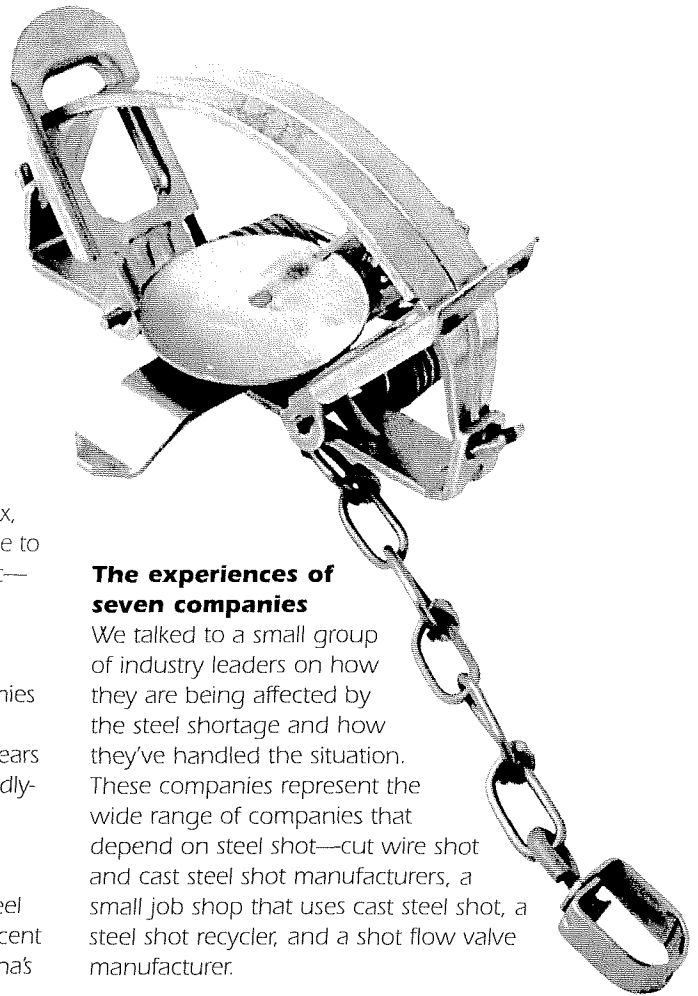
Why cut wire shot went up in price—if you could get it

The high cost of energy and the shortage of scrap and the materials to make pig iron have put wire rod in short supply. The need for scrap has increased in the U.S. because of the recovering steel industry, but again, China is buying large volumes of U.S. iron and steel scrap metal. According to Kevin Hepburn of Premier Shot Company, "Part of the problem for steel shot manufacturers is that so much scrap is going to China." Scrap market insiders support Hepburn's claim. They point out that large volumes of U.S. iron and steel scrap metal are being sold overseas, primarily to Asia, and that China continues to consume as many scrap substitutes as it can get. While pig iron and direct-reduced iron (DRI) pellets were available in South America, it was difficult to get the products in North America. The ore carriers were taking the materials to China and East Asia.

Steelmakers are using surcharges to offset higher electricity costs and iron-unit costs. Mills have seen costs rise for ore, coke, alloying minerals, metals and natural gas and are passing on cost increases to customers. Hepburn says that surcharges from the wire mills went from \$.09 to \$.21 per pound in 2004 and he fears that the surcharges will become permanent. Hepburn noted that the closing of rod mills have been another factor. In the U.S., the Georgetown Mill closure eliminated approximately 650,000 tons of supply and cutbacks at the Keystone mill have eliminated another 150,000 to 200,000 tons. These reductions have taken 15.5% of the estimated U.S. production capacity.

Cast steel shot prices affected, too

Cast steel shot has also become an expensive commodity. While it is more easily available than cut wire, it comes at a high price with a delayed shipping schedule. The limited availability of scrap and high shipping costs have greatly affected the manufacturing and distribution of this media.



The experiences of seven companies

We talked to a small group of industry leaders on how they are being affected by the steel shortage and how they've handled the situation. These companies represent the wide range of companies that depend on steel shot—cut wire shot and cast steel shot manufacturers, a small job shop that uses cast steel shot, a steel shot recycler, and a shot flow valve manufacturer.

■ Michael Deakin with Pellets LLC

Wire can now be up to 80% of our costs. We're buying product offshore, not from U.S. mills. We buy large quantities so that we can meet demand and then take our time and shop carefully for the next order. Manufacturers have to become smarter purchasers. Fortunately, we are seeing prices come down.

■ Jerry Sheyka with EMI, Inc.

EMI is a small job shop and the shot problem is tough to get a hold of. Prices are at an all-time high and we can't afford to inventory large amounts. I can't afford to run out of shot either. I use S170 and S230—two popular shot sizes. So it's a daily job to track our shot supply; it's hard to do and we never had to do it before.

■ Tom Brickley with Electronics Inc.

We recently had a request from an aerospace manufacturer to adapt their MagnaValves so that they could use stainless steel cut wire. Stainless steel is more expensive than steel cut wire, but easier to get right now. We recommend that you call us if you will be using a different media as so many variables can affect flow rate. Another suggestion is to control your blast pattern in wheel machines. Wasting media is never justifiable and especially not now. Now is the time to control your processes and reduce media waste.

Worldwide costs for shipping spiraled upward. As more steel is put on the water, the availability of vessels has become limited. In many cases, rates have doubled for bulk shipments. This has added from \$25 to \$45 per ton to import prices in 2004.

Steel prices have jumped by an alarming 30 to 50 percent. U.S. steel companies say the No. 1 culprit is dramatically higher energy costs. Those costs are then pushed down the supply chain and in turn make everything made with steel more expensive.

—T. Greg Merrion, President
Independent Petroleum Assoc. of New Mexico

Nissan Motor halted production temporarily in November, 2004 in three of its four Japanese auto factories. "A highly unusual step that the company said was made necessary in part by a surge in demand for steel from China," wrote Todd Zaun with the International Herald Tribune. The announcement coincided with a government report showing that strong demand in China and elsewhere for steel, cars and ships had helped lift Japanese exports to a record high in October, 2004.

French engineering firms were "caught in a vice" between steel producers that justified price rises by similar hikes in coke—the residue obtained after coal is distilled—electricity and freight. And clients refused to pay more for finished products, an industry federation said.

—April, 2004 Business Report

Dennis Dourlain, a 47-year old scrap hunter in Pittsburgh, Pennsylvania, knows his metal. With 15 years experience scrounging through trash, he expects to earn \$60,000 this year. Dennis can thank the Chinese for his income. The country's demand for scrap metal has pushed the price of junk skyward, moving the salvaged metal business out of the Sanford and Son era. Mr. Dourlain still doesn't face much competition because the work is hard and dangerous. He lost sight in one eye last year when struck with a metal shaving. He's also been in several fights over ownership disputes and landed in jail over one disagreement. On the flipside, he's bought a cell phone and cable television service, and is planning a vacation this summer. Recently, he began using permission slips that grant him rights to certain lucrative trash sites. For now, business is booming.

April, 2004 The Wall Street Journal

In the wake of the recent steel shortage, researchers at University of Missouri-Rolla (UMR) are exploring ways to make steel production in the United States quicker, cheaper and more efficient. "We have about \$1.8 million in research projects at UMR aimed toward producing steel more efficiently and rapidly, which could help alleviate some of the steel shortages that have been experienced in the last few years," says Dr. Kent Peaslee, associate professor of metallurgical engineering at UMR. The U.S. steel industry is running at 90 percent capacity, which is as high as it has been in years, says Peaslee. UMR hopes to increase its productivity and efficiency through new processes and technologies.

■ **Maurie McCally with Wheelabrator Abrasives**

Exports of steel scrap to the Far East, primarily China, plus opportunistic pricing by domestic suppliers, have forced steel scrap prices to their highest levels ever. In 1979, when the Scrap Cost Variance (scrap surcharge) was instituted and there were wage and price controls imposed by the government, the base grade scrap price was \$90/ton with zero surcharge. This is a far cry from the Scrap Cost Variance (SCV) of \$385/ton in December, 2004. Somewhat surprisingly, those industries that were paying through the nose for suitable scrap found rather mild resistance to the SCV from their customers who apparently understood the inevitability of what was happening. "A lot like the weather—a lot of complaining—but nothing you can do about it," seemed to be the response.

■ **Carl Stevens with GMA Industries**

The steel shortage has been good and bad for GMA. (GMA Industries recovers spent steel shot, grit and aluminum oxide and recycles it into good-as-new media.) The bad news is that we are now competing with scrap dealers for spent material and companies are using their media much more carefully. The good news is that people are calling us for alternatives to virgin material—our recycled shot is a great value. We are also seeing more demand for grit from surface prep contractors.

■ **Bob Gillespie with Premier Shot Company**

China, energy costs and the growing U.S. economy have affected our business. It takes heat to make wire rod, and thanks to rising energy costs, steel-makers are paying a lot more to run their furnaces. We're passing these costs on to our customers as surcharges with the hope that the surcharges will not become permanent price increases. I'm glad to have this opportunity to make the shot peening industry aware of what's been behind the price increases in our business. My advice is to not wait until you are low on shot to order—plan ahead and order ahead.

■ **Dr. Yoshihiro Watanabe with Toyo Seiko**

Generally speaking, recent steel shortages have come from increased Chinese demand. In Japan, active automotive and vessel manufacturing have contributed to the shortage. The price increases have two main reasons: The first is the above-mentioned changing balance of supply and demand, and the second is the increased demand for raw materials (coal, iron, ore, etc.). Our prices have increased but we can secure the required amount of product. We negotiate with our customers to share the increased prime costs.

Is relief in sight?

We've been caught in a trap with all three prongs of steel prices—metallics, energy and transportation—closing in on us. We can expect an ease in pricing and material shortages in 2005: eternal and internal forces will moderate China's growth and the depressed U.S. steel industry is reviving. An example is the Georgetown facility. It was purchased in August, 2004 by International Steel Group and was in production before the end of the summer.

Still troubling is the volatility of fuel prices and growing demand for raw materials. It's ironic that the global economy continues to grow despite worries about high oil prices and the unrest in the Middle East and it's that industrialization that will consume resources at an exponential rate.

Our advice is to stay on top of global trends as best you can, it's harder to be trapped without the element of surprise. We learned from our panel of industry experts that we need to be smart purchasers, we need to develop strong business relationships—open communication can make purchasing easier in difficult times—and improve our processes for the best use of media (our overall quality will improve, too).

And finally, be cheered that a small guy can profit from a crisis situation. (Think of the scrap hunter in Pennsylvania). Be heartened that adversity pushes innovators to create better products. (Think University of Missouri-Rolla.) The future looks optimistic to those that can make more out of less, reduce waste, use recycled materials, and utilize an abundant resource.