



SFSA CASTEEL REPORTER

Steel Founders' Society of America

a monthly publication
serving SFSA steel casting industry Members

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Casteel Commentary Highlights:

The Casteel Commentary wonders where we will find the capacity to meet the medium term demand. With a political consensus that we need to produce and distribute more energy, where will these castings be made? We are busy trying to meet today's existing demand, where will the castings for oil shale, drilling OCS and ANWR, nuclear power plants and new pipelines come from?

Foundry Photo Book

"Foundry Work" A View of the Industry is a new book published by industrial photographer Mike Schultz. It can now be ordered. This book is a high quality, visual representation of the spectacular nature of the work within foundries. It is 186 pages and contains approximately 150 images. Areas covered will include melting, casting, molding and finishing. This book was conceived with the desire to honor and celebrate the work/workers within foundries. The book is available in a special very limited edition, clamshell cover, hard cover (signed and numbered) with an original print embossed on the cover. Michael Schultz has been photographing industry for the past 20 years. He is also a noted photographer with images in public and private collections, and has a reputation for his outstanding printing ability. His work is in the permanent collection of the St. Petersburg Museum of Art and the North Carolina Museum of Art.

Go to www.michaelschultzphotography.com to order. Shipping to start October 10.

Pattern Maintenance

A steel casting customer is trying to design a maintenance program for his pattern tooling. I am unaware of any published guidance for pattern maintenance.

What percent of your patterns require repair or maintenance each year? Most plants must repair about 20% of their active patterns each year. What are the most common repair or maintenance activities? Minor repairs of fillets or vents are common.

Do you have a suggested or formal maintenance schedule? No one reported a schedule. The common practice appears to be tagging the pattern for repair at the end of the run and it is inspected before being put into production.

Specification Note

Purchasers of steel castings are rightly dismayed when they machine into porosity, inclusions or shrinkage in a steel casting. Historically our industry has handled this circumstance by replacing or fixing the casting.

No inspection techniques exists that can find these problems efficiently. Customers will tighten MT or PT requirements or impose RT. In general, this increases their cost without providing any benefit in reduced incident rates. Some customers seek to require the casting to meet surface quality requirements on the machined surface.

If the foundry has experience and has confidence in their capability it may be acceptable. On the other hand as a

general matter, the foundry cannot know it can meet the requirement. If the purchaser is willing to pay, the foundry can do the machining and then he would guarantee the machined surface quality. If the purchaser is unwilling to allow the foundry to finish machine the part, then the imposition of surface requirements on machined surfaces would be problematic.

The most challenging problem is when the purchaser has not invoked any requirements but want to reject the casting based on the workmanship paragraph. If there is no requirement specified then there is no cause for rejection.

Innovation

Embedded wireless thermocouples can dramatically improve heat treatment cycles. We control the furnace with thermocouples that measure air temperature. This causes the castings to take longer to get to temperature since the furnace reduces the firing rate when the air is at temperature well before the castings are. This also leads to uncertainty of when the casting get to temperature. Embedding thermocouples in the load in test blocks allows the hottest one to limit the firing reducing the time to get the castings to temperature. It also gives greater confidence that the castings are at temperature for the required time. By using wireless systems the implementation becomes more robust.

Foundry Educational Foundation

The FEF, (Foundry Educational Foundation) has entered the first major campaign in its 60-year history. The \$7.5 million "Casting Our Future NOW" endowment campaign was launched in January 2008 with more than \$2.3 Million pledged as of July 31, 2008.



FEF is a 501(c) 3 not-for-profit organization, founded in 1947 by a collaboration of industry leaders, societies and postsecondary schools. FEF's mission is to support partnerships among students, educators and industry in order to assure a steady supply of outstanding graduates in metal casting engineering.

An estimated \$10 Million has been distributed in scholarships and program support since 1947. The programs provided to the Accredited colleges and universities are producing excellent results; even in a recent ten year analysis, the average shows 76% of the scholarship recipients begin working in the metal casting industry right after graduation. With a long record of effectiveness, impact and accountability, FEF continues to carry out its mission of "helping today's students become tomorrow's leaders."

Today FEF and the Cast Metal Industry are faced with remarkable challenges:

1. Attracting Students to the Industry: Scholarship awards have not kept up with the escalating tuition and fees at college campuses. Between 1981 and 2006, average public post secondary schools' tuition and fees grew by 571% while FEF's scholarships increased by 301%. Consequently, by 2007, they covered only 2/3 of the costs they had covered in 1981.
2. Key Professors and Up-to-date Labs: Outfitting educational labs with the best equipment and technology will not only result in capable students, but will hopefully entice some of the those students to remain in academia to become future Key Professors.
3. Increasing Workforce Gap: A survey conducted by the National Association of Manufacturers (NAM) shows that the skilled workforce gap is growing exponentially as workers age 65+ retire and as smaller numbers of 18 to 24 year olds enter the workforce. This increasing gap is alarming since NAM identifies "high performance workers" as the most important driver of future business success.

4. Changing Workforce Needs: The foundries viable today are in large part because they invested in high-performance employees and put innovation first. FEF is the single most effective organization in North America committed to developing high performance employees and moving them into the metal casting industry

5. Contributions insufficient to meet increasing program costs: FEF must grow its capital base while simultaneously meeting increasing scholarship award and discretionary grant expenses. It is paramount that FEF's programs and services be strengthened to help fortify metal casting's continued health and viability. "Casting Our Future NOW"

FEF's vision for the future is (1) to increase the impact of individual scholarship awards, (2) to better meet the employment gap and workforce demand for technically-trained employees and (3) to ensure the financial future of FEF.

To find out the most up-to-date progress, or for more information, go to FEF's website, www.fefinc.org or contact the FEF office at 847-490-9200.

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Market News

Commodity prices have declined in many categories. Oil prices are down as demand falls due primarily to the higher prices. Consumers have felt the pain of sharply higher gas and other prices and are cutting back. We in North America have probably avoided a recession but growth should remain slower and demand for smaller casting remain weaker. The weaker dollar has helped our global competitiveness. The dollar recently has risen as commodity prices have fallen.

SFSA Trend cards show stable conditions for most plants. High alloy shows a large decline. Iron and steel casting demand is up sharply in the Census data. Raw Steel Shipments of long products from the mills show stable and robust demand. Orders and shipments for capital goods are stable but inventories are growing. It is likely that we will see some added decline for some commodities and some pressure from larger customers for passing through the reduced costs. Medium term, it appears that infrastructure and energy investments will stimulate very strong market conditions.

Additional market information is found in the SteelGuru document on the Casteel Reporter web page.

Casteel Commentary

The slowing economic activity globally spurred by higher commodity prices will ring price pressures to bear on the steel casting industry. The shorter-term outlook suggests some weakness in demand in some market segments. In contrast to the shorter term possibility of a slowdown is the near certainty of a medium term boom in steel casting demand.

Where will all the steel castings come from? With a consensus that we need to increase energy production significantly, public policy and economic conditions are going to expand production and distribution investment. There seems also a general agreement that an energy policy needs to both invest in alternative energy sources and technology as well as expanding the traditional sources. Drilling on the Outer Continental Shelf (OCS) or in ANWR, building a new generation of nuclear reactors, developing oil production from oil shale, building new pipelines, and installing new wind energy capacity will all require construction of new capital equipment. This new equipment will depend on casting production.

Our industry, especially in large castings, is limited. Globally there is an inadequate supply base to incrementally expand production today. If the global market requires capital equipment intensive energy investment, our production must increase to meet demand.

This added investment in capacity will only be justified when the shortfall of supply causes additional price realization. Only when there is a compelling investment story will we add capacity.

In the meantime, expanding energy production and distribution will be problematic. The medium term outlook for our industry is for strong market conditions, rising prices and long lead times.

Raymond

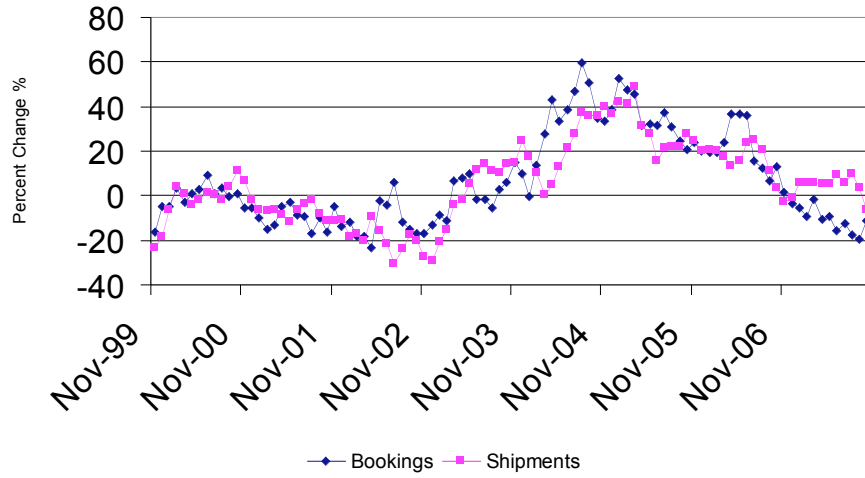
STEEL FOUNDERS' SOCIETY OF AMERICA

MEETINGS CALENDAR

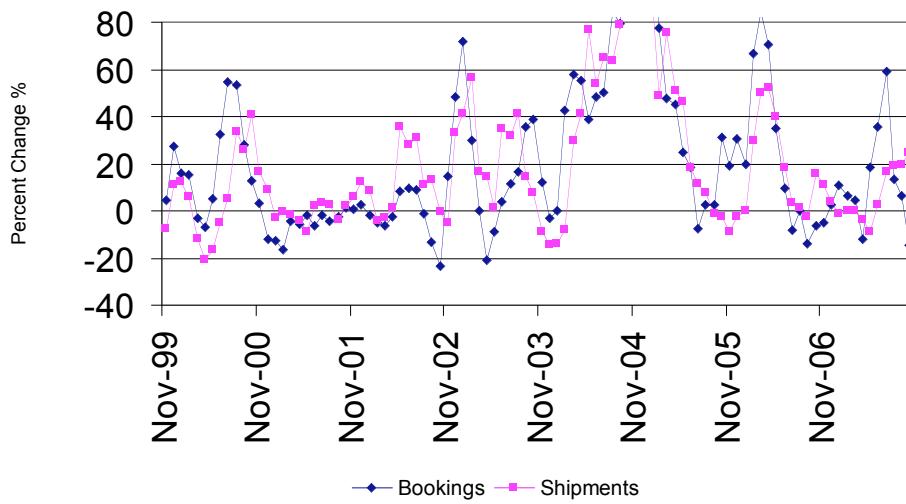
2008

30/1	Future Leaders Meeting	MI
October		
9-10	Heavy Section Product Group and National Management Meeting	Milwaukee, WI
28-29	High Alloy Product Group Meeting	Marshalltown, IA
December		
10-13	National T&O Conference	Chicago, IL

Carbon & Low Alloy Casting Market Trends

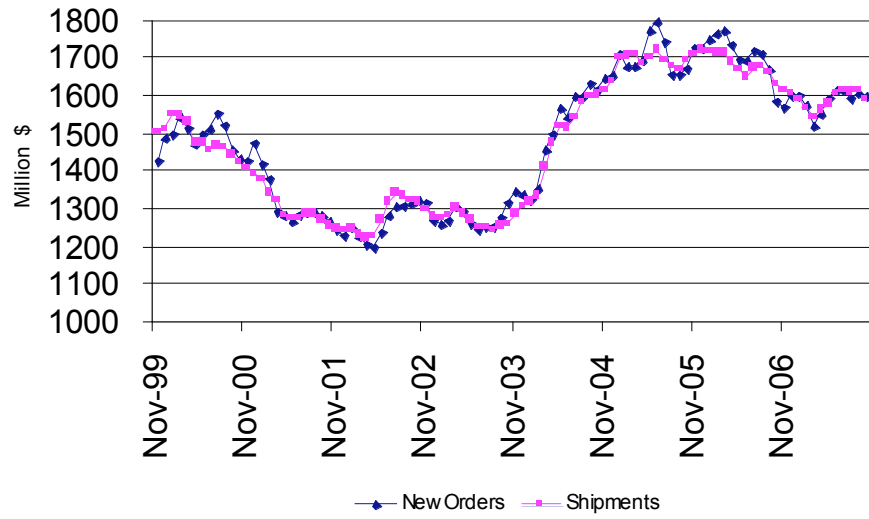


High Alloy Casting Market Trends



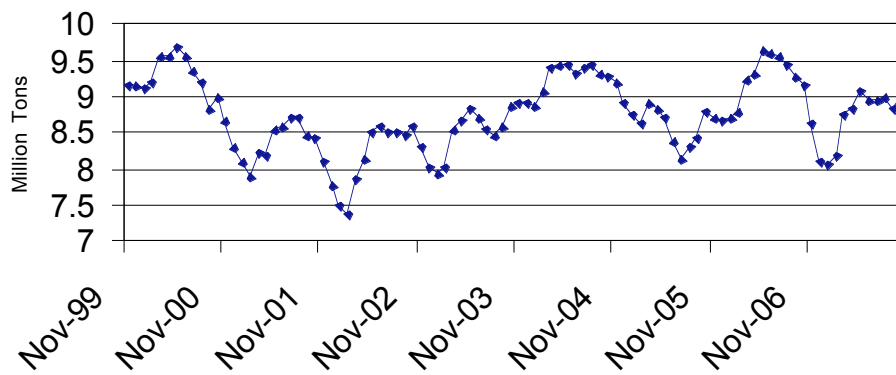
Iron and Steel Castings

3 month average



Raw Steel Shipments

3 month average



Market Segment	Estimated 2006 (tons)	Projected 2007 (tons)	2007 Change (%)	Forecast 2008 (tons)	2008 Change (%)
Railroad	684,870	650,627	-5	650,627	0
Mining	143,000	155,870	9	162,105	4
Construction	118,800	116,424	-2	114,096	-2
Trucks	25,920	20,736	-20	20,736	0
Valves	42,000	44,100	5	44,100	0
Pumps	12,075	12,679	5	12,932	2
Oil Field	22,000	25,960	18	27,258	5
Military	10,800	11,556	7	12,712	10
Other Markets	75,400	79,924	6	83,121	4
Total	1,134,865	1,117,875	-1	1,127,686	1

