



SFSA CASTEEL REPORTER

Steel Founders' Society of America

a monthly publication
serving SFSA steel casting industry Members

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December — 2006

Casteel Commentary Highlights:

This month's Casteel Commentary argues that steel casting production is supported by capital equipment demand. The demand for capital equipment is driven in part by the price of commodities. The current high prices for copper and oil signal ongoing investment in equipment and demand for steel castings.

Technical & Operating Conference

This year's Conference was again a success, with 205 attendees – 52 SFSA member companies attended. 39 papers were given, on a wide variety of topics from technical subjects such as simulation of the effects of porosity on mechanical properties, to operational subjects such as charging for pattern storage and a presentation on how one SFSA member has reduced their energy cost by using gas from a local landfill. Twenty of the papers presented were written and presented by SFSA members.



Elaine Thomas of Atlas Castings & Technology and Jeremy Allyn of Harrison Steel Castings Company respond to questions about their papers at the 2006 T&O Conference during the "Beer & Pretzels" question and answer session.

This year's Member Workshop was also well attended with 61 attendees. Robin Griffin of UAB gave a no-nonsense presentation on defect analysis, and Matt Frank and Frank Peters of Iowa State University presented an innovative method for rapid production of patterns.

Safety

Five SFSA member companies received safety award certificates for their safety record (better than the national average for manufacturing industry) in 2005 at this year's Technical & Operating Conference; these were Amite Foundry & Machine, Atchison Steel Casting & Machining, Eagle Alloy, The Falk Corporation, and Pacific Steel Casting Company. Two additional companies, Quaker City Castings and Southwest Steel Casting Company received plaques for their perfect safety records in 2005.

Hexavalent Chromium

OSHA has made available a compliance guide for Hexavalent Chromium on their website at

http://www.osha.gov/Publications/OSHA_small_entity_comp.pdf

R&D Tax Credit

Congress Renews and Strengthens the R&D Tax Credit. On Dec. 8 and 9, in the final hours of the 109th Congress, lawmakers passed H.R. 6111, The Tax Relief and Health Care Act of 2006. Among the provisions is to seamlessly renew and strengthen the R&D tax credit, a proven innovation-spurring incentive used primarily by manufacturers. The NAM was a key

leader in the R&D Credit Coalition. The new strengthened R&D tax credit, called the Alternative Simplified Credit, is effective prospectively.

Equipment Available

On occasion, members have equipment no longer needed and would like to sell it. We have on occasion listed this equipment for the benefit of members who may want to purchase this excess equipment for their own operation. If you have equipment you would like to sell, send me a brief description of the equipment for inclusion in next month's newsletter.

Schumo Foundation Interns

We are soliciting member companies to sponsor our 2007 Schumo Interns. The successful interns receive a \$5,000 scholarship for successfully completing their project and reporting at the T&O. Details of the application are available on the Casteel Reporter web page or attached to the PDF version of this newsletter. Applications are due by December 22. If your company intends to have a college intern this is a great program. In any case, if you wish to recruit a good intern, you should plan to interview potential candidates in January and make the offer early next year.

Innovation

SFSA solicited energy used plant wide to produce a ton of shipped steel castings. We had a good response to the survey and have the results to report. As you can see in the table, induction melting shops used more electricity and gas to produce a ton of castings. In some ways you would expect this since the batch size is smaller and the energy efficiency is related to the modulus, volume to surface area. Electric Arc Melting had lower average energy required. The earlier SFSA study from 1977 underreported the electricity required but had a credible estimate for gas. The DOE 2004 report on typical energy required was a reasonable estimate based on our survey.

	Electricity kwh/ton	Natural Gas scf/ton	Natural Gas mmbtu/ton
EAF Average	2070	11000	11
EAF Standard Deviation	500	5000	5
IF Average	5150	21100	21
IF Standard Deviation	1900	14000	14
SFSA 1977	1500	12000	12
DOE 2004	2350	11100	11

Specification Note

Most ASTM cast steel grades are covered either by the general requirements of A703 or A781. Included in many materials specifications and in both technical delivery specifications is the requirement that procedures and welder be qualified to ASTM A488. This ensures that welding done for the production of the castings meets the quality requirements of the casting. While the standard and industry calls this repair welding, it is more properly called production welding. The part did not break or fail needing repair, rather the casting need additional processing by production welding to meet the original casting requirements. Sharing the welder and weld procedure documentation with customers can show technical qualification. Framing or posting certificates for welders in their work area can recognize their qualification and highlight the foundry's quality commitment. In any case, it is important to maintain records demonstrating compliance with the requirements for weld procedure and welder qualification.

Market News

Trend cards from SFSA show slowing growth for steel casting production. Bookings are growing slower than shipments. The same is seen in the shipments and new orders for iron and steel castings reported by the Census Bureau. Steel shipments have also moderated. Capital goods are stable at a high level suggesting that while growth may slow and

market conditions become more volatile, production levels should remain strong.

For those interested in trade and other issues concerning the US and China, you should review the Executive Summary of

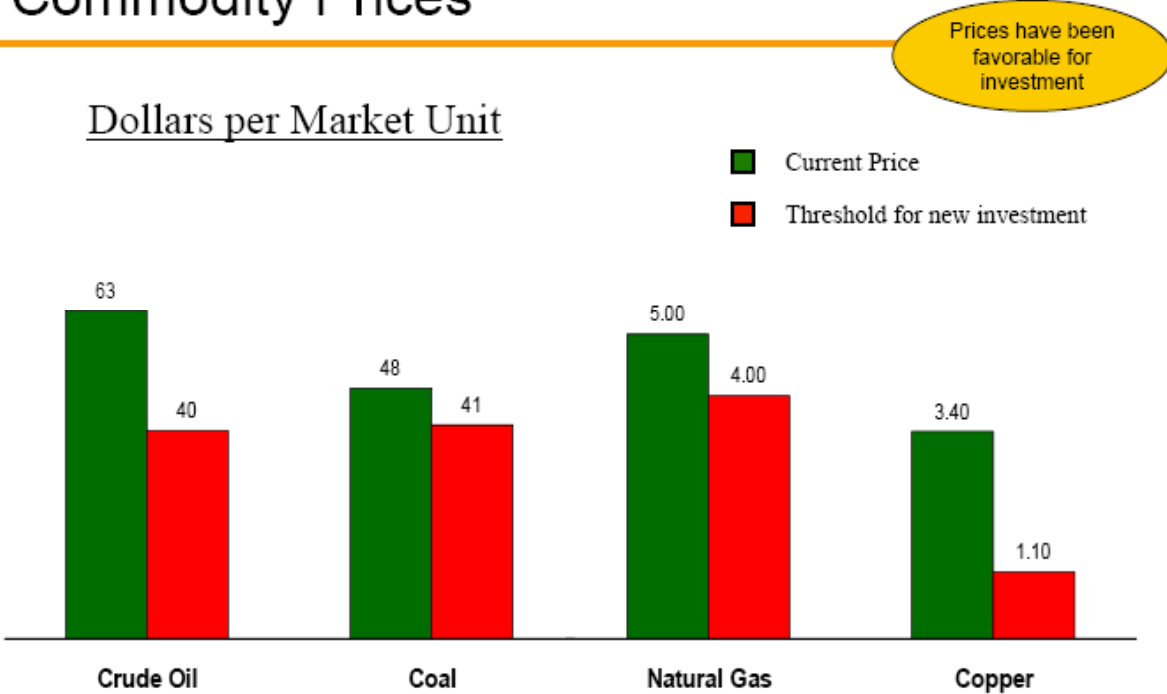
the US-China Commission located here: <http://www.uscc.gov>. Other bits of economic news that you may find of interest are in the SteelGuru document available on the Casteel Reporter web page.

Casteel Commentary

In many ways, the steel casting business is dependent on commodities and their production. While we can continue to debate the extent to which steel castings themselves are commodities or valuable engineered components, it seems clear that commodity production drives the demand for steel castings.

Most steel castings are used in the production of capital equipment. Other casting alloys are tied to consumer markets. Ductile iron pipe demand is driven by home construction and other ductile iron casting demand is dominated by automotive production. Aluminum castings are also supported by automotive production requirements. Steel castings are used in transportation infrastructure like railroad equipment or trucks and in commodity production like oil field or mining. This tie to commodities has been a reason for poor growth in demand during the past two decades and should provide opportunities in the next decade.

Commodity Prices



Source: Haver Analytics, Caterpillar estimates for threshold prices



At the International Foundry Forum, Ron Conklin presented this graphic showing the situation in commodity capital equipment investment. As you can see, in each of these commodity markets the current price for the material exceeds the new investment threshold. This signals that even if the consumer economy softens considerably demand for capital

equipment could remain robust. The key will be the global supply and demand balance of these commodities and the resulting global market price. If the softening consumer economy or some other disruption leads to significantly lower commodity prices, then demand for capital equipment and steel castings will fall.

On the other hand, if global economic growth and underlying demand remains higher than global production, capital equipment demand will hold up better than the rest of the economy and steel casting demand will remain robust. Since the excess supply of the past two decades has resulted in limited capital investment in commodity production, it is unlikely that adequate new investment will be made quickly. While the commodity prices signal the need for more production the past volatility and poor returns will retard the market response. The severe price pressures of the recent past will also slow the increase in pricing which will delay the added investment required because the profitability of production will not make the expanded capacity financially attractive.

For this reason the industry should experience several years of profitable business. Not enough capacity to meet the requirements will sustain demand and pricing but uncertainty and inadequate profitability because of slow pricing response will delay the needed added capacity.

It will be useful to watch interest rates, inflation, and key commodity prices to anticipate market conditions in the steel casting industry.

Raymond

STEEL FOUNDERS' SOCIETY OF AMERICA

MEETINGS CALENDAR

2007

December

12/15

National Technical & Operating Conference, The Drake Hotel, Chicago, IL

Exhibit Services

Yellow Exhibit Services is dedicated to meeting transportation needs of the worldwide trade show industry. Our experience and commitment to customer satisfaction is second to none.



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Memo Re: SFSA Foundation Intern Program

To: Steel Foundries

From: SFSA Foundation.

The SFSA Foundation was established in 2000 to work for the future of our industry. Based on the support of Bob Schumo, SFSA past president, and the leadership of Scott Holman, SFSA past president, this Foundation was created with a broad charter to provide education and technical development for the future of our industry. We are actively soliciting support and will be asking for your contribution in the future. This memo is not a request for your financial support but to give you the opportunity to sponsor the SFSA Foundation Intern.

Our future depends on our ability to attract talent into the industry. One measure of SFSA success has been when member companies have been able to recruit students who have worked in steel foundries as part of our ongoing research program. The SFSA Foundation Intern program is an attempt to encourage companies to sponsor a student intern in the summer. When the student successfully completes the internship, the SFSA Foundation will recognize this achievement with a \$5,000 scholarship. This scholarship will help the sponsoring company secure the best intern. The company will commit themselves to supporting the student for a 10-week internship working on an engineering project for the company.

Attached is a short application. If you are interested in sponsoring a SFSA Foundation Intern, please fill it out and return it by December 21, 2006. If you want to submit a joint application and share the student with another plant, that is fine. The successful sponsor will be involved in the selection of the student.

Please call if you have any questions or need additional information.

I would encourage you to strongly consider this opportunity.

Thanks,

A handwritten signature in black ink, appearing to read 'Raymond Monroe', written in a cursive style.

Raymond Monroe

RWM

Application for Sponsorship of the SFSA Foundation Intern

Company Name: _____

Person: _____ Email: _____

Phone: _____ Fax: _____

Short Description of the proposed engineering project for the Student: (50 words or less)

We are willing to support the student with a salary of \$_____ Per hour for at least a 10 week internship.

Are you willing to provide lodging for the student? _____

Which engineering discipline would be required? _____

If you are not selected would you still be interested in working with the Foundation to secure an intern?

Please return this form to SFSA by December 21, 2006

Fax: 815 455-8241