SFSA CASTEEL REPORTER

Steel Founders' Society of America

a monthly publication
serving SFSA steel casting industry Members

780 McArdle Drive Unit G, Crystal Lake IL 60014
Tel: 815-455-8240 Fax: 815-455-8241
http://www.sfsa.org

March — 2009

Benchmarking

Once a year, SFSA offers members an opportunity to benchmark their manufacturing performance. This is done in partnership with Michigan Manufacturing Technology Center (MMTC). This was presented a couple years ago at the T&O Conference. I would encourage all members to participate. We have normally had 14 entries and are unable to compare within our industry but must use a larger peer group. If we can get 20 entries the information will be steel casting specific. This is a longer and more burdensome task that SFSA surveys, but has some insightful ways of measuring your performance. I would encourage you to participate. The deadline for submitting has been extended to April 30. Survey forms are here:
http://www.sfsa.org/misc/pbs.html

Persons Available

A1228 has a bachelor's degree in Mechanical Engineering and a Master's degree in Industrial Engineering and has specialized in Lean thinking and manufacturing.

A1229 has a BS in Industrial Technology Management and is seeking a summer internship in manufacturing technology management.

A1230 has a BS in Mechanical Engineering and will graduate in May 2009 with a MS in Mechanical Engineering, specializing in simulation, thermal fluids and hot tear prediction.

A1231 Seeks a position as a metallurgical engineer, has a BS in Metallurgical Engineering and an MS in Metallurgical Engineering specializing in steels.

A1232 Seeks a senior level technical position in foundry metallurgy or quality control. BS and MS in Metallurgical Engineering and significant experience in foundry metallurgy, QC, R&D, technical service, melting and SPC.

A1233 Seeks a position as a project manager, methods/quality/production manager. Speaks English, French, Malagasy and Chinese. Foundry experience and quality control experience.

Specification News

Every time a steel casting fails in service, our industry suffers. Many engineers are trained to believe that castings are an inferior product form that is unreliable, brittle, unweldable, and risky. While our overall performance is outstanding, each time there is a failure; it reinforces the image of risk.

Our current specifications are not tight enough to ensure that castings complying with the requirements are suitable for service. Some of this problem is the lack of technical

understanding on the part of our customers. As an industry though, we have argued that specifications set the minimum and that knowledgeable users can find qualified producers. This outdated approach means that aggressive purchasing agents will globally source to producers who are not qualified. When their product fails, then it is not blamed on a systemic failure of the purchasing activity to find a qualified source. The blame is attached to casting quality.

On area that should be developed is a limit on aluminum content related to section size to avoid “rock candy” failures. While the specification allow the informed user to address this condition, ASTM A781 S17 Macroetch Test and ASTM A 703 S23 Macroetch Test; it is not clear and not well understood. This is an area where we as producers should propose a tighter control on aluminum based on section size to protect our customers and our industry.

Innovation

Our research program includes a project at the Missouri University or Science and Technology (MS&T formerly UMR Rolla). Developments in instrumentation for steel quality for steel mills and minimills have developed a new instrument to evaluate inclusions and perhaps microporosity. This tool should allow us to improve our steel properties and demonstrate the competitiveness of cast steel products. Initial work shows that steel castings can have quality comparable to other steel products. SFSA will be gathering samples from members to benchmark the industry quality. You may want to contact Malcolm Blair if interested in participating.

Economic Stimulus

The $789 billion economic stimulus package provides funding for investment in roads, bridges, mass transit, energy efficient buildings, flood control, clean water projects, and other infrastructure projects. With respect to the infrastructure funding, H.R. 1:

- Provides approximately $29 billion for modernizing roads and bridges;
- Provides approximately $8.4 billion for investments in transit and $8 billion for investment in high-speed rail which includes funds for new construction of commuter and light rail, modernizing existing transit systems, and purchasing buses and equipment to needed to increase public transportation and improve intermodal and transit facilities; and
- Provides approximately $18 billion for clean water, flood control, and environmental restoration investments.

In addition, H.R. 1 provides $16.8 billion for energy efficiency programs administered by the Energy Department. Those funds include $5.5 billion for federal building construction and repair projects and $6.3 billion for increasing energy efficiency in federally-supported housing programs by investing in energy upgrades in public housing, including new windows and furnaces. The bill provides $11 billion for energy transmission projects, including $4.5 billion for "smart grid" and other electrical grid infrastructure technologies.

Also of note, the bill provides $53.6 billion for a state fiscal stabilization fund. H.R. 1 directs that $39.5 billion of that appropriation be used for local school budgets and for school modernization projects. An additional $8.8 billion directed to high-priority needs may also be used for the modernization of public schools and higher education facilities.

Buy America

H.R. 1 includes the Senate version of the "Buy America" provision. That provision provides that only iron, steel, and manufactured goods produced in the United States are to be used for projects for the construction, alteration, maintenance, or repair of public buildings and public works funded by funds appropriated by the stimulus. The Buy America requirement can be waived under three circumstances: 1). Where it is in the public interest to waive the requirement; 2). If the iron, steel, and manufactured goods are not produced in the United States in sufficient and reasonably available quantities and of satisfactory quality; or 3). If inclusion of the iron, steel, and manufactured goods produced in the United States will increase the cost of the overall project by more than 25 percent.

The provision also includes a statement clarifying that the section will be applied in a manner consistent with United States obligations under international agreements. Currently certain trade agreements such as NAFTA and the WTO Government Procurement Agreement (GPA) require that the goods of each party to the agreements are given treatment comparable to U.S. goods for purposes of direct federal procurement. Those agreements do not, however, apply to grants to states from funds appropriated to the Federal Highway Administration (approximately $28 billion) and the Federal Transit Administration ($7 billion) as they are specifically exempted from the WTO Government Procurement Agreement (GPA) as well as NAFTA. Accordingly, those grants should not be encumbered by any U.S. obligation under those trade agreements and the Buy America requirement should apply unfettered in those instances. Moreover, it is expected that the provision will have far reaching application to projects funded by other federal grants to states through appropriations in the stimulus bill.

Nations that are party to the GPA include the United States, Canada, Japan, South Korea, the European Union, The Netherlands (with respect to Aruba), Hong Kong, Norway, Iceland, Singapore, Israel, and Switzerland. Major trading partners that are not parties to the agreement include China, Brazil, India, and Russia.

In addition, the 25 percent cost differential waiver is a steep increase from the "Buy American Act" which allows the use of a foreign product if the same U.S. product exceeds the foreign price by 6 percent or more. The change raises by 19 percentage points the differential required for foreign iron, steel, and manufactured goods to be used in direct federal procurement related projects.

However, it includes the following clause

SEC 1605, use of American iron, steel and manufactured goods

(a) None of the funds appropriated or otherwise made available by this Act may be used for a project for the construction, alteration, maintenance, or repair of a public building or public work unless all of the iron, steel, and manufactured goods used in the project are produced in the United States.

(b) Subsection (a) shall not apply in any case or category of cases in which the head of the Federal department or agency involved finds that (1) applying subsection (a) would be inconsistent with the public interest (2) iron, steel, and the relevant manufactured goods are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality or(3) inclusion of iron, steel, and manufactured goods produced in the United States will increase the cost of the overall project by more than 25%.

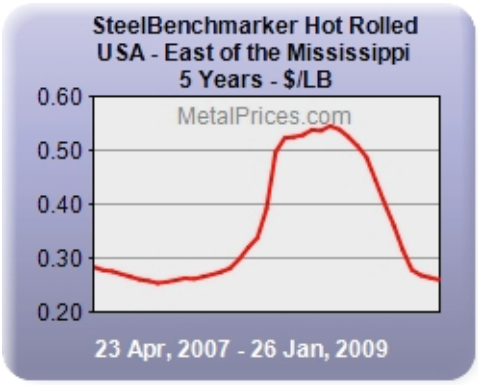
(c) If the head of a Federal department or agency determines that it is necessary to waive the application of subsection (a) based on a finding under subsection (b), the head of the department or agency shall publish in the Federal Register a detailed written justification as to why the provision is being waived.

(d) This section shall be applied in a manner consistent with United States obligations under international agreements.

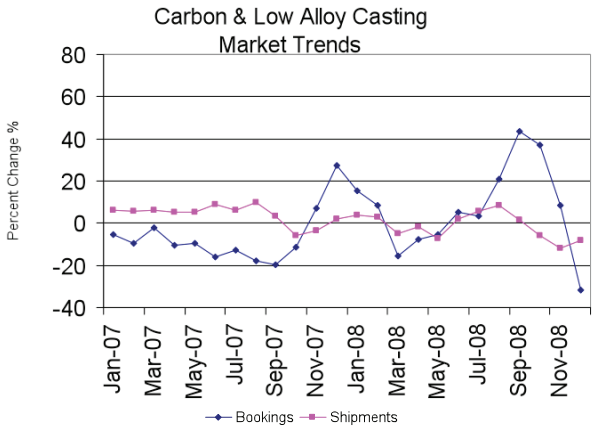
Many economists have voiced their concern regarding this clause, labeling it as protectionism.

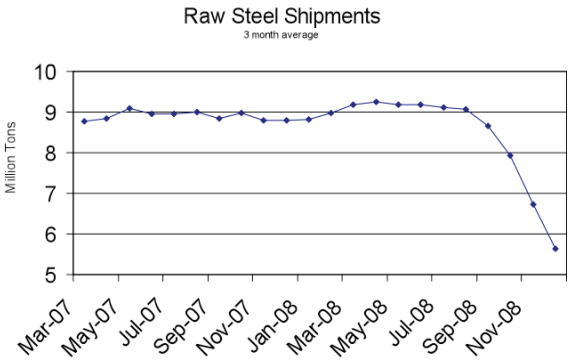
Market News

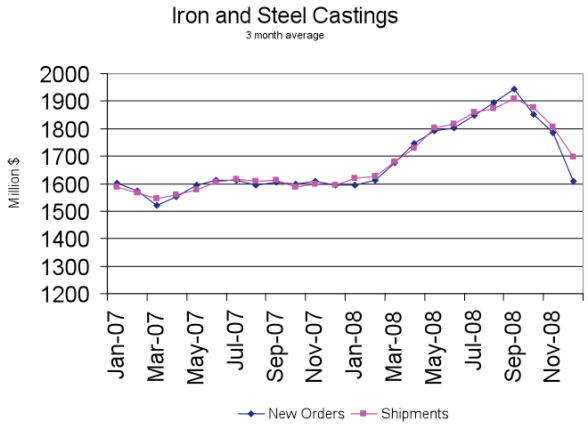
Booking and shipments for carbon and low alloy steel castings show the beginning of the current contraction in the numbers from December. For the full year, bookings were flat while shipments fell more than two percent. As is prevalent in other steel products, bookings for steel casting fell more than 30% for the three month average, more than 45% for December alone. The three month average for steel shipments from mills for December had also fallen by more than 35%. Since then steel mill shipments are down almost 60%.

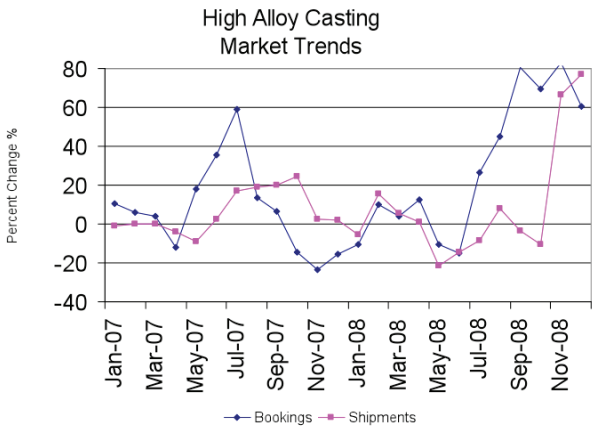


The collapse of demand for steel products has inevitably had an effect on the pricing. Steel making at the mills is so efficient, the price for hot rolled coils is almost entirely the actual cost of manufacturing steel from raw materials and energy costs. Steel foundries are not as cost efficient, mainly due to batch size and yield effects. It is probably reasonable to estimate that the cost of steel production at a foundry is three times the cost at the mill before the addition of molding and finishing.

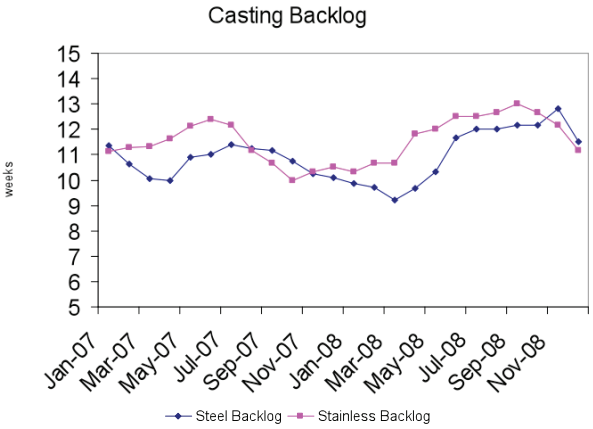




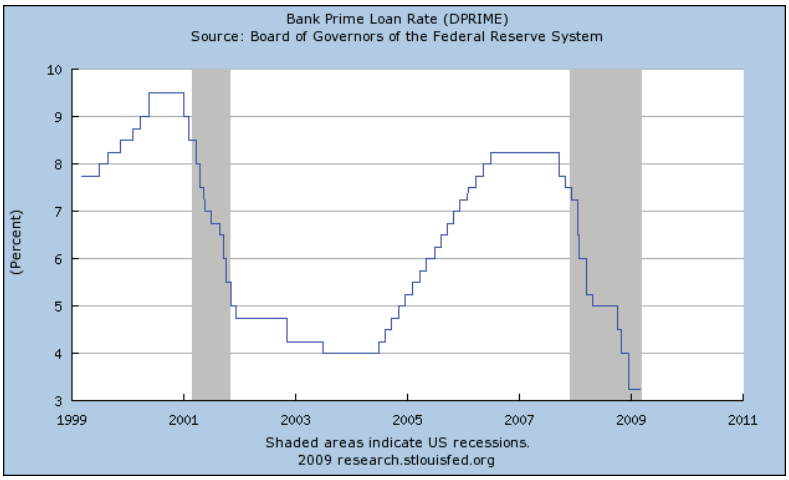




The trend in steel mill shipments and steel casting trend cards is also reflected in the Census numbers for iron and steel castings. The downturn is so far more modest but still dramatic. Iron casting production should suffer more than steel casting production since the driver is residential construction for pipe and automotive production for parts. Poor business conditions for years couple with the weak condition of the automotive manufacturers will make auto parts suppliers vulnerable. Liquidating the oversupply in housing is likely to dampen any upturn in the demand for iron pipe products. The stimulus package does offer the possibility of some demand in pipe.

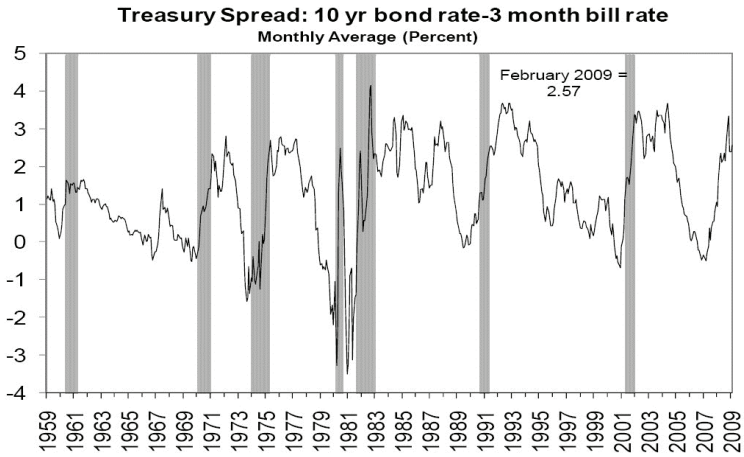


Stainless and other high alloy castings have so far been less effected by the economic conditions. Part of this is undoubtely due to the historic lag for this market segment. High alloy castings tend to lag 18 to 24 months behind the rest of the steel casting market. Strong conditions through 2007 would lead to the expectation of strong markets through the beginning of 2009. Booking and shipments remained strong through December, but reports are that market demand has softened since then.



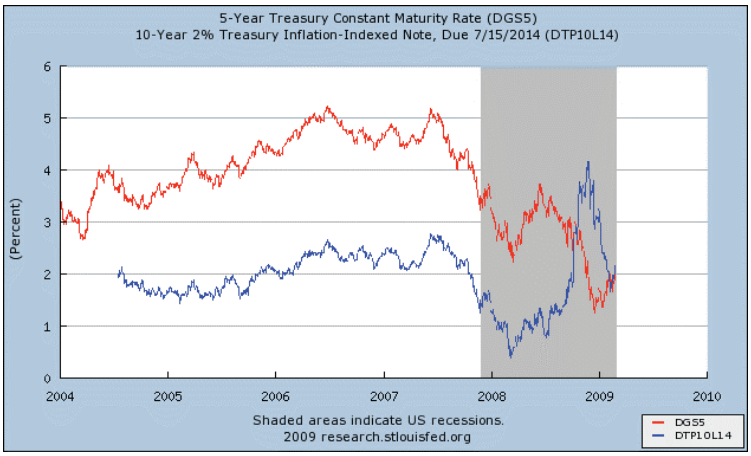
As a result of slowing markets, backlogs for steel castings and stainless castings are falling. Many large castings or other project work booked in anticipation of strong markets and already financed and paid for will be completed. Those orders are likely to be pulled forward as general conditions remain weak. Market conditions are expected to further deteriorate for the first half of 2009 with the consensus for recovery beginning in late 2009 or early 2010.

Several key parameters will indicate the state of the market going forward. Interest rates are a key indicator of market activity for steel foundries. The prime rate is set based on the consensus of economic conditions by the Federal Reserve. Interest rates topped out in late 1999 just as manufacturing began to slow due to excess inventory accummulations. Slowing activiy led to a drop in interest rates compounded by the financial concerns following 9-11. As the economy stabilized and global growth demanded historically high

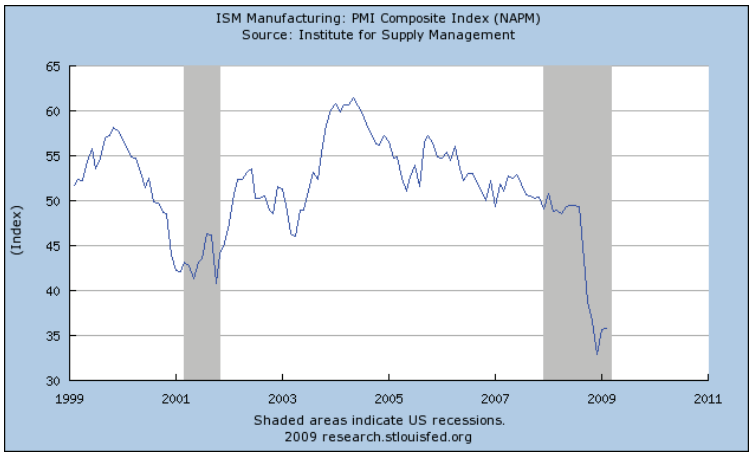


production of commodities, prices rose sharply. Interest rates began to increase to try to mitigate the increase in prices and slow the expansion.

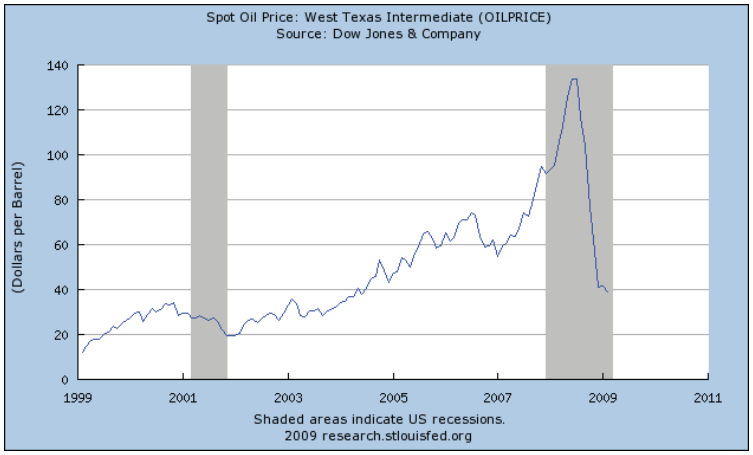
With the financial system collapse, interest rates again reflect the drop in demand. The current historical low rates reflect a fundamental concern about the need for economic recovery. It also suggests a severe economic drop in demand. Steel casting and other capital equipment suppliers may not feel the full burden as in 2001 through 2003, but the consumer economy could be difficult for years.



Recessions are normally reflected in the spread between rates on 10 year bonds and 3 month bills. When the short term bill interest rate is below the longer term bond rate, investors expect poor returns in a falling market. Interest rates did show an inverted yield in 2008 but have returned to a more normal condition suggesting economic recovery later this year. Similarly the spread between inflation-indexed bonds and unindexed bonds showed a strong deflationary trend in late 2008 early 2009 but now shows a sligh inflationary bias.



Another key indicator of future market activity is the purchasing managers index. When this index exceeds 50% the demand for manufactured goods is increasing. When the index is less than 50% the demand is falling. The steep drop in the PMI with the financial crisis foreshadows difficult times as anticipated future demand looks weak.



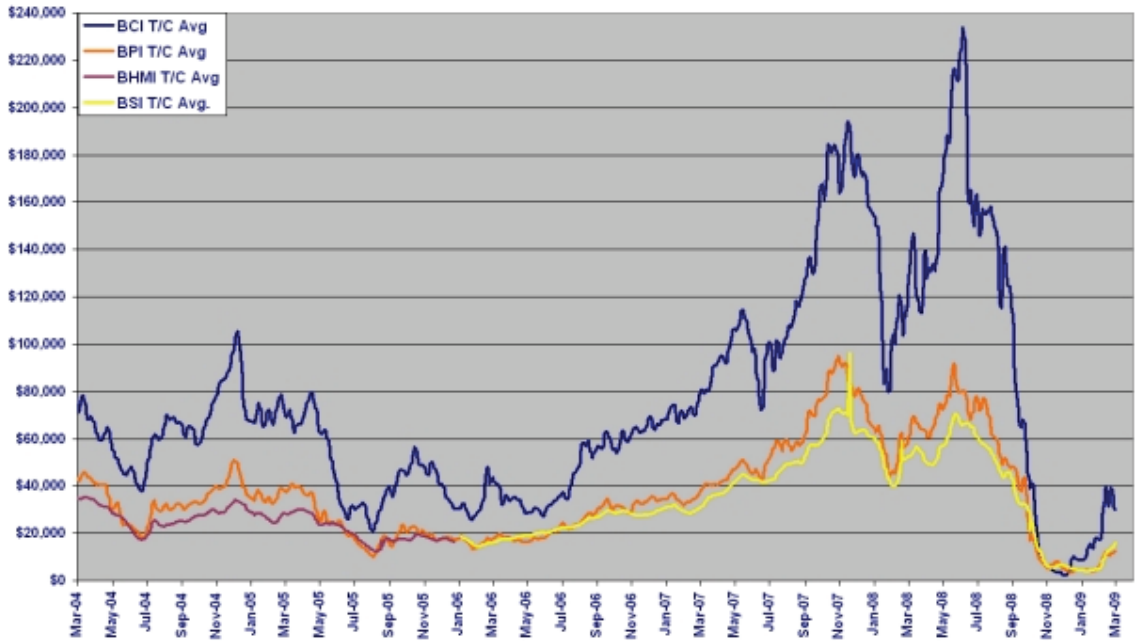
Beyond interest rates and the PMI, oil prices are a factor in future steel casting activity. Much of the industry is devoted to energy related projects. The price of oil not only effects oil production but is the bellwheather indicator of all energy production. Current supplies can continue to operate at $45 a barrel, but increasing supply will take something like $60 a barrel. As long as oil prices remain below $55 a barrel, we are unlikely to see increases in energy investments in capital equipment.

Ironically, the current glut of conventional energy due to slow global economic conditions plus the direction of the stimulus toward alternatives, will increase demand for steel castings in the intermediate term while delaying the large and critical conventional investments in coal and

nuclear electrical generation that will be required to provide energy to a growing global economy.

Copper prices are the normal benchmark for mining activity. Prices above a dollar were seen as sufficient to trigger new investment. This trigger has undoubtedly risen and at current prices around $1.50, there is some market for consumables but less for new equipment.

A global economy needs a transportation infrastructure to operate. Concerns about future economic activity have led to dramatic decreases in transportation investment. Steel foundries in the US see this in the drop in the build rate for new railroad freight cars. A more global measure is the Baltic Dry Index. This is a measure of the daily rate for ships to carry dry commodities. In the too familiar pattern seen in each graph, in 2007 through 2009 prices exploded. After a dramatic fall prices have somewhat stabilized at the low end of the range in 2005 and 2006.



So two things seem clear from our economic environment. One, we will have a painful period of poor demand and financial pressures that could last for two years. Second, after this period, we will likely see dramatic upsurge in demand and prices. Inflation is likely to rise rapidly as our materials and energy go into short supply. When the global economy stabilizes, the inability of our current energy and material infrastructure will be exposed and prices will chase available supply.

STEEL FOUNDERS' SOCIETY OF AMERICA

MEETINGS CALENDAR

2009

March		
11	C&LA Research Committee	Rolla, MO
17-18	Future Leaders Meeting	Berkeley, CA
April		
15	High Alloy Research Committee	State College, PA
May		
13-14	Southern Division / Heavy Section Product Group	Birmingham, AL
19	Specifications Committee	Vancouver, BC, Canada
August		
13-14	Western Division T&O Meeting	Salt Lake City, UT
September		
19-22	SFSA Annual Meeting	Sunriver, OR
November		
10	Specifications Committee	Atlanta, GA
December		
9-12	National T&O Conference	Chicago, IL

Duke of York visits Sheffield Forgemasters plant

- 23 Feb 2009

It is reported that Prince Andrew the Duke of York made a special visit to Sheffield Forgemasters to recognize the company's success in international trade and its future investment program. He was accompanied by the Lord Lieutenant of South Yorkshire David Moody and met with directors to discuss Forgemasters' dynamic global business presence and multi million pound expansion plans.

His Royal Highness then toured the 64-acre site on Brightside Lane to see the state-of-the-art production processes that keep Forgemasters at the forefront of global engineering for the power generation and offshore industries.

Graham Honeyman, chief executive, said: "The Duke of York has a particular interest in how Sheffield Forgemasters continues to trade strongly in the current economic climate and openly recognised our drive to continue embracing new markets, such as the civil nuclear market, which is under-supplied on an international level.

"Prince Andrew's tour of the site comes just three months after a visit by Prince Charles and we are delighted that the Royal family takes such a personal interest in the fortunes of this company."

In his role as the UK's Special Representative for International Trade and Investment, Prince Andrew spoke to apprentices and management throughout the tour to gain an in-depth understanding of the company's business strategy and turnaround following a management buyout in 2005.

Graham added: "Forgemasters is an incredibly important company not just for the local economy, but for the country as a whole. It is the only British-owned steel company of this scale left, which is very saddening, but also demonstrates the continuing strength of our industrial heritage.

"The company plays a key supply role for specialist products for the British defence programme, including the manufacture of specialist forgings and castings for the British and US navies.

"His Highness realises the strategic importance of this marketplace for the nation and also sees the potential for Forgemasters' future growth into global civil nuclear and power generation markets, which demand the very largest forgings in the world and the guarantees that a company with Forgemasters' manufacturing history can provide."

The company is currently looking at funding streams for a 15,000 tonne open-die forging press which would enable it to produce 100 per cent of the forgings required for the UK's own nuclear power programme and also tap into global demand for these large components.