



SFSA CASTEEL REPORTER

Steel Founders' Society of America

a publication serving
SFSA steel casting industry Members

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Casteel Commentary

The Casteel Commentary this month is bleak, business stinks! Business is not only poor, the prospect of improvements seem low. A good guess for the timing of improvement would be a year from now. With that in mind, we need to think through how to run our businesses to survive in the downturn while retaining the capacity to grow and prosper when business improves. The Casteel Commentary shares some thoughts on the critical issues in managing a plant in this current market.

Technical & Operating Conference

Discounted registration is available for a few more days – payment must be received by SFSA by October 29. The 69th SFSA T&O Conference will be held at the Drake Hotel in Chicago, December 10-12, with a member workshop featuring a presentation on welding nickel alloys by John DuPont on the afternoon of Wednesday December 9. The T&O Committee and SFSA staff have assembled a program of 50 papers and presentations – 39 of these are by SFSA members. This year's conference will be of great value and you will find something that you can apply in your plant. Registration and program information is available online at <https://www.sfsa.org/sfsa/toconf>.

SFSA Member News

The Steel Founders' Society of America would like to recognize Southwest Steel Casting Company in Longview, TX for recently achieving an incredible safety milestone: over 2,000,000 man hours without a lost time incident. SFSA members work in a 'high hazard' industry and workforce safety is critical to everyone. Southwest Steel Casting Company continues to demonstrate that with the right culture and commitment, foundries can be both a productive and safe environment to work. The company held a celebration at the plant on October 13 and has established their next goal of 3,000,000 man-hours.



ASTM International Committee A01 on Steel, Stainless Steel and Related Alloys has presented the prestigious Award of Merit to steel expert Ron Bird (retired Stainless Foundry and Engineering). The Award of Merit is ASTM's highest organizational recognition for individual contributions to standards activities. Ron was recognized as a highly productive committee member who has done significant work related to the standardization of castings and corrosion testing of stainless steels and related alloys. Ron has been instrumental in the development of ASTM standards for steel investment castings within Subcommittee A01.18 on Castings. Ron has already received several awards from SFSA in recognition of his support of our industry.

Turkey Foundry Tours

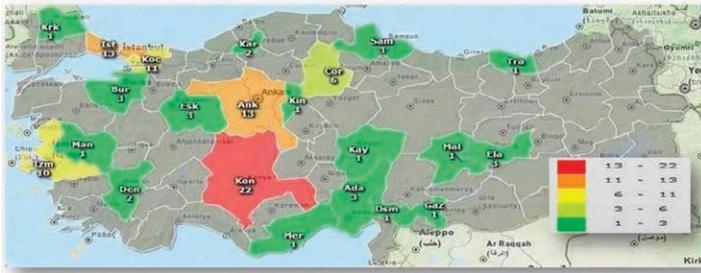
The foundry tours in Turkey this past summer proved to be an eye opening experience. Unfortunately, business conditions and a general concern about visiting Turkey with ISIS activity nearby limited attendance. Eight participants, four foundries, participated in the tours setup by the Turkish Foundry



Association, Tudoksad (<http://www.tudoksad.org.tr/en>). The group had planned to see four steel foundries, but eight were visited before departing the country, and a ninth was almost added. Turkey truly is a giant melting pot of Europe meets Asia meets Africa, and all in the Middle East, and was enjoyed by all of the participants. For the areas we visited, it was easy to communicate in English.

Tours were held at Akmetal, Korfesboru (two foundries), Anadolu, Akdas, Sumer, Pinar, and Senkaya. All were steel foundries pouring a range of alloys with some pouring other metals such as iron and one having a forge shop. We saw both sand and a little centrifugal, but no investment (though there are a few in the country). Much like North America, the foundries ranged in capability to meet the requirements for the type of product being produced. The above graphics, from Tudoksad and Akdas, show the size of the steel foundry industry in Turkey and the locations of the steel foundries. Most of the foundries are half a century old or less, and are family-owned. Most echoed similar comments about a downturn in the market – many are off by 50%, and noted the crisis of 2008. Many had a

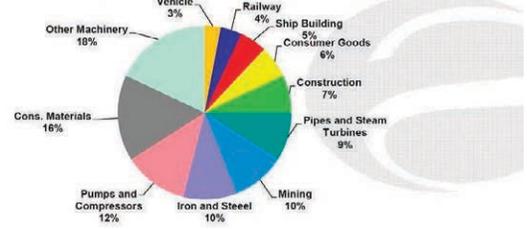
DISTRIBUTION OF STEEL FOUNDRIES IN TURKEY



STEEL FOUNDRIES IN TURKEY

*Capacity: 300.000 ton *# of Foundries : 102 *# of *Workers: 7.000

STEEL CASTING SHIPMENT



young workforce that was well educated. The typical work week is 45 hours. All melted with induction furnaces, made locally in Turkey – Eges. Even for producing very large castings – two 35 ton furnaces. Local support and parts was part of the reason, and induction melting versus EAF for reduced spikes on the power grid. All of the foundries used Novacast, but a few also had MAGMA. Omega was the molding line of chose, and the use of Novacast became prevalent because of helpful support from the local Omega reps. Capability to heat treat, with oil quench, and rough machine was fairly common. Percent of product exported was very high – mostly to Europe. Markets tended to be oil & gas, mining (equipment), energy (power gen), cement.

Specifications

The Specification Committee met in May at the ASTM A01 meeting. The next meeting will be on November 17th; please contact David Poweleit (poweleit@sfsa.org) for more details. The committee is pursuing adding hardness conversion of duplex stainless steels as part of A370. Current A262 corrosion testing Inter Lab Survey does not include cast material - this will need to be done as a standalone effort with foundries and labs. Discussed potential new specifications for performance radiography (and ultrasonic testing), digital visual inspection (Frank Peters R&D effort), and riser sleeves (material/performance insurance). Discussed challenge with increasing requirements (more stringent specs and certs) – API (20A), NORSAC, ABS, and ASME. Also the challenge with customers not understanding their own specs and requirements. Briefly discussed revision to ISO 9001.

ISO TC17/SC11, steel castings, meeting was held in June. Delegations from US, Germany, France and China were present. 14 standards were reviewed – 11 were Final Draft International Standards (FDIS) and 3 were second FDIS. Over the past couple of months, David Poweleit was elected to TC17/SC11 secretary and chairman to take over both roles from Malcolm Blair.

Cast carbon steel grades are currently precluded from AWS D1.1. This imposes undue burden for foundries making parts for industries such as building construction who use AWS and require prequalified welding procedures. In addition to a solid technical argument for including cast grades, it is also demonstrated that this is already done in AWS D1.6, AWS B2.1 and ASME BPVC Section IX. It is anticipated that the inclusion of cast grades in the next revision of AWS D1.1 will better enable foundries to be on an equal playing field.

Market News

SFSA Trends show three month averages for shipments in August for steel and stainless steel castings off around 20%. Bookings for steel castings are off 35%. Bookings for stainless castings are off 27%. Backlogs for both are around 8 weeks.

Steel production remains down around 10% compared to a year ago and steel foundries are more volatile so this would suggest a decline of up to 40%. Steel casting sales are closely tied to copper prices which are off 20% and oil prices which are off 50%. These major market prices for commodities that are drivers for steel casting demand make continued poor market demand for steel castings likely.

Sales of steel castings are as expected, closely tied also with the sale of steel mill products and of iron and steel castings tracked by Census. As seen in the graph, steel mill and iron and steel casting sales have dropped dramatically since fall of 2015. Both of these measures of shipments sales have fallen 20% since then.

Like oil and copper prices, non-defense capital goods orders fell since the final quarter of 2015 and are now stable but at a lower level. All of these indicators show that steel casting sales are poor and market improvements are not likely for the balance of the year.

Casteel Commentary

Business stinks for most steel foundries. Some have even remarked that business conditions are worse than they saw in 1982 when the market fell by around 50%. Our SFSA Trend cards show a 25% decline in top of about a 5% decline last year. We would estimate that plants are operating at about 60% of their peak or lower. Business stinks!

Our forecast looking forward does not seem optimistic. With low and stable commodity prices and slowing orders for capital goods, an upturn in business for the balance of 2015 seems unlikely. This slow period may last through 2017. My view is that until we see a re-adjustment in equity values to be in line with expected future cash flows and interest rates trending up, capital investments will be delayed. Low interest rates inflate existing capital asset values by accepting low future returns on capital investment. This is actually pulling the expected future cash flows into the present value discounted by the low rate.

So, until markets adjust, business stinks. What to do?

First as you already have done, reducing the workforce and costs is critical. As business levels drop, it is key to capture the value of work in process, declining inventories and labor costs. Cash is consumed when expanded and freed in declines but only if aggressive cost cutting allows capture of the freed cash.

Cuts must be strategic. It is useful to develop a number of scenarios for different business profiles and order levels to pre-think the level of labor and activity that can be sustained as orders fluctuate.

Pricing must reflect reality. In strategic scenarios, different business levels will require different pricing levels to sustain the plant. It is a mistake not to find the best price possible in a reduced business climate to remain competitive. It is a mistake to meet the market prices that cause financial losses and result in loss of capability and failure.

Capabilities must be preserved. While the business must be sized for the current level of business, cuts and decisions must consider the need to retain the skills and capabilities needed for future prosperity. Maintaining key employees and plant capabilities is important. Developing new capabilities and products are critical to future growth.

New customers must be sought. Entering a new field is risky and difficult. When business is strong and the plant is profitable and near capacity, new customers are difficult to develop. When business is slow and capacity free, the opportunity exists to utilize the critical staff that is needed to be retained and invest in new market development. One legitimate critique of North American business is our unwillingness to invest in down markets to prepare for the future growth opportunities in a recovering market.

I hope that we will soon see a robust recovery and strong markets but....

We need to run our businesses so that we can survive and be positioned to prosper in an uncertain future.

-Raymond

**STEEL FOUNDERS' SOCIETY OF AMERICA
BUSINESS REPORT**

SFSA Trend Cards (%-12 mos. Ago)	12 Mo Avg	3 Mo Avg	August	July	June
Carbon & Low Alloy					
Shipments	-12.1	-23.7	-20.0	-30.0	-21.0
Bookings	-24.2	-34.9	-30.0	-33.2	-41.6
Backlog (wks)	8.2	8.0	8.0	8.0	8.0
High Alloy					
Shipments	-5.4	-18.3	0.0	-35.0	-20.0
Bookings	-11.6	-26.7	-30.0	-30.0	-20.0
Backlog (wks)	7.2	7.3	8.0	7.9	6.0
Department of Commerce Census Data					
Iron & Steel Foundries (million \$)					
Shipments	1,691.1	1,614.7	1,633	1,608	1,603
New Orders	1,692.3	1,626.0	1,582	1,599	1,697
Inventories	2,106.5	2,009.7	1,999	2,011	2,019
Nondefense Capital Goods (billion \$)					
Shipments	79.5	79.7	80.5	79.2	79.2
New Orders	79.3	81.1	79.9	82.0	81.5
Inventories	180.7	176.8	176.3	176.8	177.1
Nondefense Capital Goods less Aircraft (billion \$)					
Shipments	69.6	69.7	69.5	69.8	69.6
New Orders	69.5	69.2	69.3	69.9	68.5
Inventories	121.9	120.9	120.5	120.9	121.4
Inventory/Orders	1.8	1.7	1.74	1.73	1.77
Inventory/Shipments	1.8	1.7	1.73	1.73	1.74
Orders/Shipments	1.0	1.0	1.00	1.00	0.98
American Iron and Steel Institute					
Raw Steel Shipments (million net tons)	7.6	7.6	7.5	7.6	7.8