



# SFSA CASTEEL REPORTER

Steel Founders' Society of America

a 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>

## January — 2020

### Casteel Commentary

The Casteel Commentary reviews the predictions from last January and makes some guesses about what will happen in 2020. Enjoy!

### Steel Performance Initiative

SFSA is planning this year to launch a new multi-year R&D program funded by the DoD called the Steel Performance Initiative (SPI). The formation of the SPI will enable the US to develop innovative steel technology and retain global dominance through advanced steels both on and off the battlefield. The goal is to create a sustained program, with all the services participating, which will give steel producers the opportunity to be world leaders in technology and commercially successful so that they form a robust and reliable supply chain for DOD and commercial systems.

If you have a project idea and/or interested in getting involved with the program, please email Raymond Monroe, [monroe@sfsa.org](mailto:monroe@sfsa.org).

### Cast in Steel

Mark your calendar for the Cast in Steel Bowie Knife Competition on April 20, 2020! The performance evaluation and Award Ceremony will be held on April 20 at the Huntington Convention Center in Cleveland, OH. This event is a day before the AFS MetalCasting Congress.

To date, 39 student teams have registered from 28 different universities. There are still a few teams that are looking for a foundry partner. This is an excellent opportunity to connect with young engineers and the next generation workforce. If you are interested in supporting a student team, or have any questions regarding the competition, please contact [Diana David](#). More information is [available here](#).

### Steel Casting Technology Class

Tom Stevens' Steel Casting Technology class will be offered to members in English with Spanish translation in Guadalajara, Mexico. Book One for the class will be done in four sessions: March 10-12, May 12-14, July 14-16, and September 22-24. The cost per person for the four sessions is \$1500 and must be completed by Friday, February 7<sup>th</sup>. Seats are limited and may be rationed by member location. The plan is to also offer Book Two and Book Three next year and the following year with a prerequisite of the student having completed Book One. Contact [David Poweleit](#) for a link to register.

If there is enough interest, we will host an additional Book One class in 2020 with a staggered start in the US. This would also offer an opportunity to develop additional trainers to transition Tom's knowledge through participating in preparing class material and assisting with teaching (trainers will need to commit additional time beyond just the four sessions). If members have interested "students" or "teachers" for a US class, please let [David Poweleit](#) know by Friday, January 24<sup>th</sup>.

## **73<sup>rd</sup> National Technical & Operating Conference**

Thanks to the support of our industry to both provide papers and participate, the 2019 T&O Conference continues to serve as the world's premiere steel casting conference! Thanks to the T&O Committee and all of the authors, the program featured topics such as Next Generation Manufacturing, pouring & gating, and lessons learned in ceramic sand, plus many more papers covering everything from melting to foundry engineering to molding to finishing to management to EHS to quality to technical & featured research. The workshop this year offered hands-on casting analysis, fundamentals for pouring & gating, and manganese steel. Planning is already in the process for this year's conference; tentatively scheduled for December 9-12, 2020 in Chicago. If you would like to recommend a topic and presenter for the 2020 T&O, please contact [David Poweleit](#).

## **SFSA Master Founders Recognized at the 2019 T&O Conference**

SFSA's Artisan Program recognizes members' highly skilled workers as Master Artisans. The highest level is a Master Founder; distinguished by a range of foundry and leadership skills, and who contributes in an extraordinary way to the success of the organization. Other specialized Masters demonstrate highly developed skills in one area of steel foundry, such as melting, molding, and finishing. Artisan nominees are reviewed by the Guild of Master Founders. Recognizing these Masters raises the value and status of these individuals, and creates good publicity for the company in the industry.

SFSA was pleased to recognize the following three outstanding individuals as Master Founders and the newest members of the SFSA Guild:

J.B. Shoaf – Howell Foundry

Doug Lambert – Harrison Steel Castings

Tim Hays – Harrison Steel Castings

If you would like to nominate an individual from your company to be considered for a Masters recognition, please contact Ryan Moore, [rmoore@sfsa.org](mailto:rmoore@sfsa.org).

## **Safety Awards**

During the 2019 T&O Conference in Chicago last month, SFSA recognized ten member companies for demonstrating an exemplary safety record for 2018. The awards are to recognize members that set the standard in safety practices and contribute to the improvement of the overall safety record for our industry. The following member achieved a "Perfect Safety Record" with a DART rate of 0:

- ME Global - Tempe – this is their seventh safety award and 6<sup>th</sup> consecutive year.

The following nine members achieved an "Outstanding Safety Record" with a DART rate less than 2.0, which is the 2018 industry average for all manufacturing:

- Aurora Metals, this is their second award
- Eagle Alloy – this is Eagle's seventh time receiving this award and third consecutive year
- Fimex – this is their fourth award and second consecutive year
- Magotteaux – Monterrey, this is their first award
- Magotteaux – Pulaski, this is their fourth award and second consecutive year
- ME Global – Duluth, MN, this is the third time earning this award and third consecutive year
- MetalTek International – Carondelet Division, Carondelet has earned this award five times and the third consecutive year
- MetalTek International – Wisconsin Centrifugal Division – Wisconsin Centrifugal has earned this award every year for the last 12 years.

## **SFSA Scholarships Awarded**

Recruiting students to join our industry and grow into leadership positions remains a critical need in the steel casting industry and a strategic initiative of the Society. The Schumo Scholarship, established in memory of Robert M. Schumo, a former president of SFSA and Pennsylvania Electric Steel in recognition of his generous gift to the Society, aims to attract the next generation workforce by providing scholarships to student interns. To sponsor the scholarships this year, we received personal contributions from Jim Cooke, John DuPont, Eagle Alloy, Fimex, Goodwin, Harrison, McConway & Torley, and ME Global. All scholarship recipients also received an additional \$500 from an anonymous donor.

To compete for the scholarships, interns are required to work at a member foundry and carry out a specific task or investigation and selected works are presented at the annual T&O conference. SFSA awarded six \$1,000 Schumo Scholarships to:

- John Bach – McConway & Torley
- Maria Hilbert – McConway & Torley
- Jacob Melvin – Harrison Steel
- Alec Opheim – Stainless Foundry & Engineering
- Nik Schumacher - Metaltek-Wisconsin Centrifugal
- Spencer Speltz – Midwest Metal Products

The Kent Peaslee Scholarship was established by the SFSA Board in honor of the late Dr. Kent Peaslee, the Chair of Steelmaking Technology and Curators' Teaching Professor of metallurgical engineering at Missouri University of Science and Technology. The scholarship is given to a student who prepares a paper in the area of steel melting or refining and presents it at the T&O Conference. SFSA awarded two \$1,000 Peaslee Scholarships to:

- Brandon Riehle – Spuncast
- David Torri – Andritz

If you currently have or plan to have an intern work at your foundry in 2020, be sure to have them complete a scholarship registration form which the Society will distribute via email and on the SFSA website later this month.

## **AFS Visual Inspection Class with Ted Schorn**

The [AFS Institute](#) and quality expert Ted Schorn have teamed up on Improving the Effectiveness of Visual Inspection, an interactive class that includes:

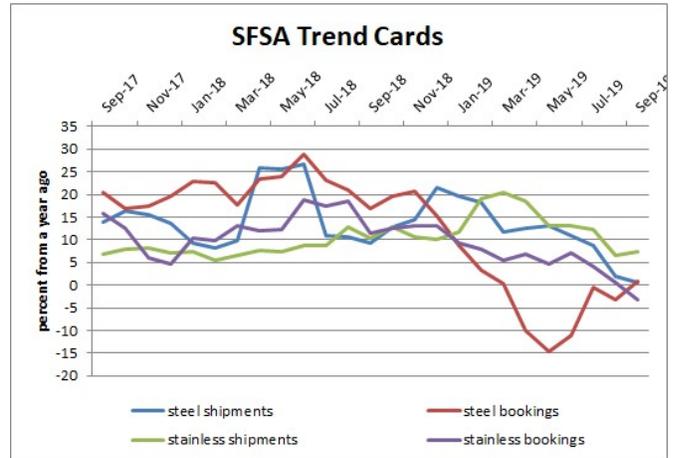
- A breakdown of the inspection process elements
- Key metrics for visual effectiveness you can apply to your business
- Recognition of human factors associated with inspector capability
- Engaging discussions on visual inspection influences

Classes will be held in [Birmingham, AL \(1/15-1/16\)](#), [Charlotte, NC \(2/12-2/13\)](#), and [Detroit, MI \(3/4-3/5\)](#).

## Market News

SFSA trend cards for market activity shows continued slowdown in October with reports still showing growth but at much more modest rates. Bookings for both steel and stainless steel castings have been at or below levels of a year ago for the last three months reported. Shipment continue to outpace bookings but also show a slowing trend. This suggests a slowing economy. Backlog has seen a slight bounce up. This slower market was confirmed in our market forecast update given at the T&O conference and available [here](#).

Capital goods new orders show stable levels with no growth. Steel mill shipments have declined through October, but the weekly numbers show an increase in production for the balance of 2019. Oil and copper prices also have seen an increase since October. Demand seems stable in the first half of 2020 but could see a slowdown in the second half of the year.



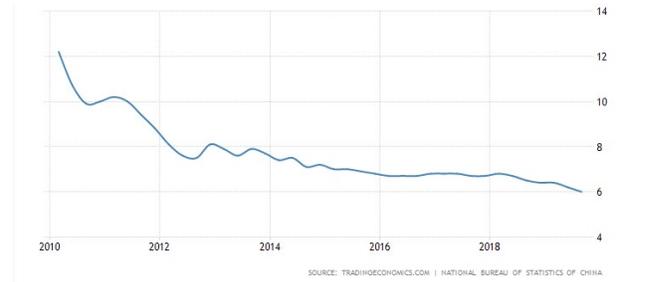
## Casteel Commentary

Below is an analysis of last year's guesses and new guesses for 2020, enjoy!

### My Ideas for 2019 for the North American Steel Foundry Industry:

- China will slow down this year and prove to be a drag on manufacturing. While they compete, they also consume copper and oil supporting the commodity prices.**

China growth rate did slow and combined with tariffs had a modest effect in slowing a relatively stable market. The graph shows the falling growth rate in China since 2010.



Calendar	GMT		Actual	Previous	Consensus	TEForecast
2019-01-21	02:00 AM	GDP Growth Rate YoY Q4	6.4%	6.5%	6.4%	6.5%
2019-04-17	02:00 AM	GDP Growth Rate YoY Q1	6.4%	6.4%	6.3%	6.4%
2019-07-15	02:00 AM	GDP Growth Rate YoY Q2	6.2%	6.4%	6.2%	6.3%
2019-10-18	02:00 AM	GDP Growth Rate YoY Q3	6%	6.2%	6.1%	5.9%
2020-01-17	02:00 AM	GDP Growth Rate YoY Q4		6%		5.9%
2020-04-17	02:00 AM	GDP Growth Rate YoY Q1				5.7%
2020-07-16	02:00 AM	GDP Growth Rate YoY Q2				5.7%

- Tariffs, especially the 301 tariffs directed at China will improve demand for us at least for the first part of 2019. This support should slide down as our customers are hit by their overseas competitors that are not bearing the cost of tariffs.**

Nationalism is the inevitable result of the dramatic growth of government relative to the manufacturing and other areas of life. In economic terms in the U.S., government is 38% of the economy compared to manufacturing at 12%. The cost of regulations adds to this burden for a 2012 GDP of \$18 trillion, regulations cost \$2 trillion shown in Figure 1. Increased nationalism and populism is a rational response to a global environment where my circumstances are more determined by public policy than any other factor.

Type of Regulation	Cost Estimate	Sources
All Federal Regulations	\$ 2,028	Summation of costs by type
Economic	\$ 1,448	Authors' empirical analysis using index of regulatory burden; ITC (2014)
Environmental	\$ 330	Hahn and Hird (1991); OMB (2004–2013)
Tax Compliance	\$ 159	IRS and Bureau of Labor Statistics
OSHHS*	\$ 92	Johnson (2005); OMB (2009–2014); authors' estimate of cost of screening wait times

Figure 1 Cost of Federal Regulations in 2012 in \$billions

Tariffs proposed and implements by the administration have had an apparent small positive effect on steel castings. The improved business conditions for steel and steel castings coincidental with the election of Trump is clear in the changes in production shown in the graph in Figure 2.

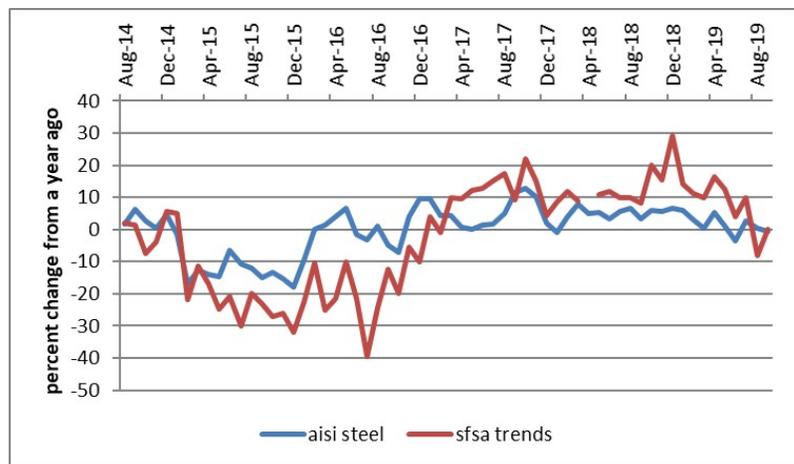
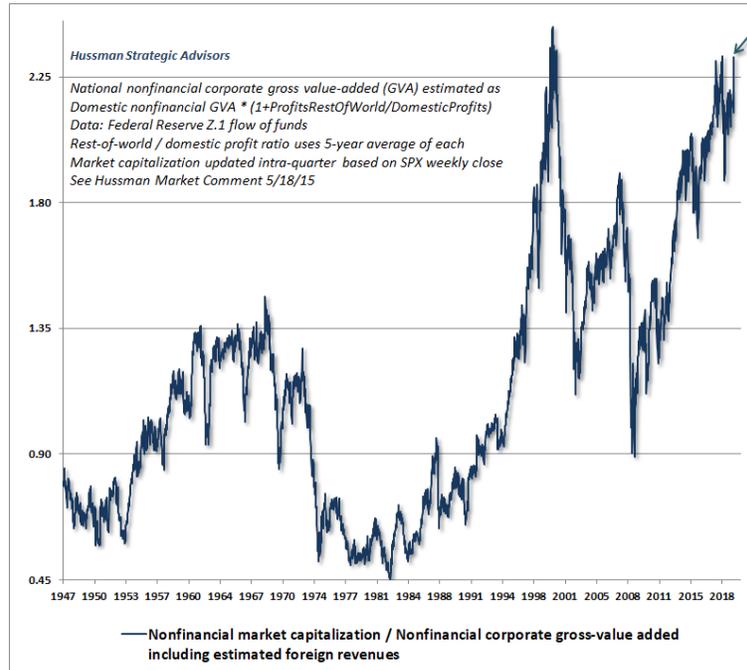


Figure 2 Steel production and steel casting trends

**3. Equity markets will drop further but may have a small impact on our demand. It is possible the drop in commodity prices and squeezes on profits for our customers cause a more severe fall in demand in the second half 2019.**

Wrong! Equity markets responding low interest rates rising markets continued to elevate valuations to levels that are historically higher ever. This will not end well.



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**4. Staffing will become even more challenging due to the low unemployment rate, reduced immigration, retirements and rising wages. Automation will be a critical response.**

Worse than expected but slowing business give some relief from this ongoing crisis. Fertility rate is below replacement of 2.1 at 1.72 in 2018. Unemployment is at 3.5%. Automation will continue to be a requirement to stay viable.

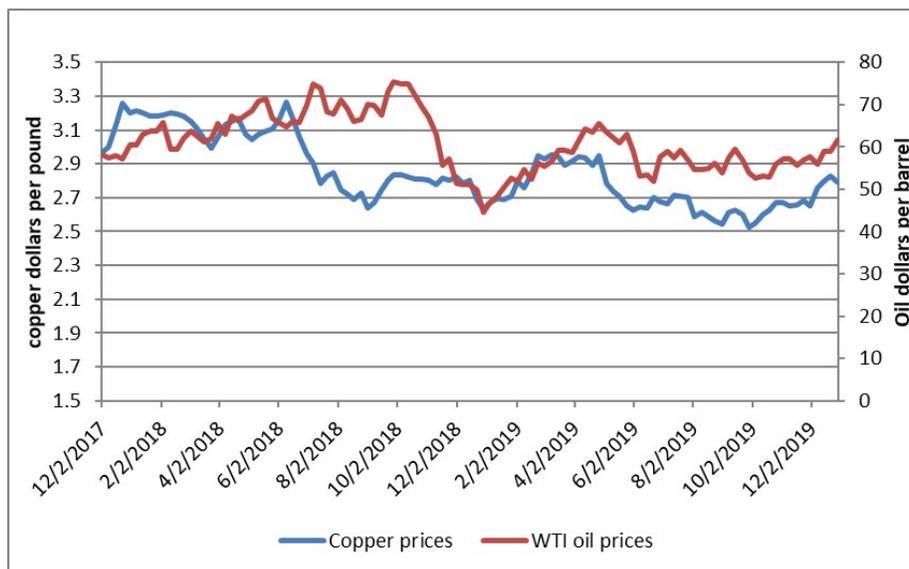


**5. Interest rates will stay around the 2% mark.**

Fed Funds rate peaked early at 2.4% and has fallen to 1.55%.

6. **Oil prices and copper prices will bounce around but stay in a limited trading range.**

Correct. No big moves in these commodity prices.



7. **Trump will still be president at the end of 2019.**

Surprisingly correct.

**My Ideas for 2020 for the North American Steel Foundry Industry:**

1. **The presidential election will not be close. Odds today are for betting \$105 on Trump you get \$100, betting on the most likely Democratic nominee, Biden, \$100 and he wills you get \$500!**
2. **Oil and copper prices decline slightly due to slowdown in the industrial economies worldwide.**
3. **Interest rates remain stable or decline.**
4. **Equity markets remain stable or drop radically, they will not end higher than end of 2019.**
5. **Nationalism will dominate foreign policy with Global forums like the UN, WTO, NATO, etc. losing clout and bi-lateral arrangements becoming key. With Brexit, the EU will be increasingly challenged. The most important agreement in North America will be the USMCA.**
6. **China will become increasingly isolated and suffer economically as economic cooperation yields to per conflict concerns.**

*Raymond*

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

<b>SFSA Trend Cards</b> (%-12 mos. Ago)	12 Mo Avg	3 Mo Avg	November	October	September
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**Carbon & Low Alloy**

Shipments	14.8	14.5	15.5	20.0	8.1
Bookings	22.1	20.8	16.5	30.3	15.5
Backlog (wks)	9.0	9.2	10.0	9.5	8.0

**High Alloy**

Shipments	9.1	10.7	10.0	15.0	7.0
Bookings	13.4	13.2	13.5	15.0	11.0
Backlog (wks)	9.3	10.0	10.0	10.0	9.9

**Department of Commerce  
Census Data**

**Iron & Steel Foundries (million \$)**

Shipments	1,367.8	1,360.7	1,373	1,373	1,336
New Orders	1,383.3	1,389.7	1,378	1,378	1,413
Inventories	2,014.8	2,080.0	2,087	2,087	2,066

**Nondefense Capital Goods (billion \$)**

Shipments	76.4	77.9	77.2	77.2	79.2
New Orders	77.5	76.3	75.3	75.3	78.5
Inventories	178.3	180.3	180.4	180.4	180.1

**Nondefense Capital Goods  
less Aircraft (billion \$)**

Shipments	67.8	68.6	68.7	68.7	68.5
New Orders	68.3	69.3	69.3	69.3	69.3
Inventories	124.2	125.7	125.7	125.7	125.8

Inventory/Orders	1.8	1.8	1.81	1.81	1.81
Inventory/Shipments	0.0	1.8	1.83	1.83	1.84
Orders/Shipments	0.0	1.0	1.01	1.01	1.01

**American Iron and Steel Institute**

Raw Steel Shipments (million net tons)	7.9	7.9	7.8	8.2	7.8
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