Ductile Iron News - Issue #2 - December 2015

Detroit, MI -  Back in October the Ductile Iron Society, under the direction of the Ductile Iron Marketing Group, displayed at the 2015 Gear Show at Cobo Hall in Detroit, MI. The show went from October 20 - 22 and was well attended. The booth traffic was very slow as it looks like forgings receive the bulk of the production of raw materials. There is an niche here for the ductile iron foundries to get involved as a raw casting supplier. The group made a decision at the end of the show that we will not likely display at the 2016 show in Columbus, Ohio.

From L to R, Angella Sells, Jim Wood, Kristen Knaffle, Mark Stein and Kathy Hayrynen

Missing from the picture is John Lewensky (DIMG Chairman). Thanks to John and Farrar Corporation for allowing his time to attend the show. Also thanks to Applied Process for allowing Angella, Kristen Mark and Kathy to volunteer their time to work in the DIS booth.

Note: To return to the newsletter after viewing a presentation, go to the end of the presentation and click "Return to DI News" link
Baraboo, WI - On October 27, 2015 the DIS Marketing Group held their 2nd "Design with Ductile Iron Seminar" at the Ho-Chunk Casino in Baraboo, WI. This seminar was attended by 28 people from different non-DIS and DIS members.

The DIS wishes to thank the following members of the DIS Marketing Group, John Lewensky of Farrar Corporation (Chairman) Vadim Pikhovich of Magma Foundry Technologies, Kathy Hayrynen of Applied Process, Gene Muratore - retired/DIS consultant, Dave Gilson of SinterCast and Jim Wood of the DIS as instructors.
The next "Design with Ductile Iron" will be held on May 31, 2016 at the Hilton Garden Inn in Perrysburg, OH in conjunction with the 2016 DIS Spring Annual Meeting from June 1-3 and tour of General Motors Defiance, OH. We ask all of our members to encourage ductile iron users and purchasing personnel to attend this informative seminar. This is an excellent opportunity for Design Engineers to learn more about the production of Ductile Iron. Also it would be helpful to Foundry Sales Engineers. There will be more information available on the DIS website at [www.ductile.org](http://www.ductile.org) or contact Jim Wood at the DIS office at 440-665-3686.

**Baraboo, WI** - The Ductile Iron Society held its Fall T&O (Technical & Operators) Meeting at the Ho-Chunk Casino in Baraboo, WI or the Wisconsin Dells area. This meeting was attended by 153 members and it was done in conjunction with a tour of Grede Reedsburg in Reedsburg, WI. The first day was made up of all the committee meetings. The first committee meeting was the Research meeting.
It was attended by 61 members and guests. This is the largest group in recent years. In the afternoon was all the committee meetings that make up the Operating Committees of the DIS. Also the Board meeting was held at 3pm. The day concluded with the reception that kicked off the Fall DIS Meeting. On Thursday was the technical meeting that was made up of one panel on Converting Gray Iron to Ductile Iron and a workshop on Image Analysis.

The rest of the day consisted of 7 other speakers. The day concluded with a banquet that evening. The President of the DIS, Mike Galvin started the banquet festivities with the presentation of new member certificates to those companies that joined since our Spring Meeting in June 2015. They were;
Willman Industries

From L to R, Dilip Brahmbhatt, Randy Parker, Mike Galvin (DIS President) and Sean Marek

The Modal Shop
No picture

Joyworks LLC
Justin LeFevre
Hoosier Pattern, Inc.

No picture

Thanks to all these companies for their support in the Ductile Iron Society.

Mike then asked Jim Csonka of Hickman, Williams & Company, the morning technical chairman, to assist him in acknowledging the speakers.

Back to Basics Panel-Converting Gray Iron to Ductile Iron

From L to R, Jim Csonka, Mike Galvin, Ian Esaki of Waupaca-Etowah Foundry, Brandon Reneau of Caterpillar and John McGoldrick of Hodge Foundry

Shrink Detection in Ductile Iron by Thermal Analysis

From L to R, Jim Csonka, Mike Galvin and Dave Sparkman of MeltLab Systems
Inmold Treatment of DI

No Picture
Rob Peaslee

Analysis of Published Cast Iron Experimental Data

Balancing Ductility and Hardness with Laser Enhancing Technology

From L to R, Jim Csonka, Andy Theisen, Casey Placek and Mike Galvin
Mike then asked Kathy Hayrynen of Applied Process, the afternoon technical chair, to assist him in acknowledging the speakers. They were;

**Image Analysis Seminar/Workshop**

From L to R, Mike Galvin, Kathy Hayrynen, Matt Meyer and Serge Grenier

**Dynamics of the Industrial Sand Markets**
No Picture
Bob Stransky of FairmountSantrol

**Alloy and Treatment Process Optimization for Quality Ductile Iron**

From L to R, Mike Galvin, Kathy Hayrynen and Eli David
The Shrinkage and Microstructure Investigation of Ni-Resist Ductile Iron

From L to R, Mike Galvin, Kathy Hayrynne and Si Endo

At the end of the banquet, Dan Antonetti (Plant Manager) made a presentation to the group on the history of Grede Reedsburg and also what the tour group was going to see the next day. We had one of the largest groups to attend a tour. There were 80 people who attended the tour.

Dan Antonetti of Grede Reedsburg
Thanks to all the employees at Grede Reedsburg who helped to make this run successfully. They were Tou Chang, Bill Connors, Patrick Constant, Mark Erickson Tyler Hill, Mike Rizner and Emily Boldt. We hope we have not forgotten anyone and if we did please accept our apologies.

Please mark your calendar early as our next DIS Meeting will be the 2016 Spring Annual Meeting at the Hilton Garden Inn in Perrysburg, OH with a tour of General Motors Defiance, in Defiance, Ohio. The dates are June 1-3rd.

Chicago, IL - 2015 FEF College Industry Conference

Nearly 300 industry executives, key professors, student delegates, and FEF supporters were in attendance at this year's FEF College Industry Conference (CIC), held recently at the Westin Michigan Avenue in downtown Chicago.

The conference began on Thursday, November 19, with the Career Information Session. The information session is a unique opportunity for student delegates to interact and discuss job opportunities and internships with nearly 40 organizations in the metal casting industry. Once again the DIS had a tabletop display at the career session and we handed out t-shirts to the student delegates and this year's logo was "Don't be a Flake, Ductile Bends, But Does Not Break". Thanks to the following sponsors who contributed money towards the costs of the shirts. They were Buck Company, Dotson Iron Castings, ABP Induction, ASK Chemicals, Foseco, MAGMA, Benton Foundry, Allied Mineral, Cadillac Castings, Globe Metallurgical, Applied Process, Hitachi Metals Automotive Components, Elkem, Dura-Bar, Midvale Industries, Superior Graphite, Hickman, Williams & Company, FerroPem, Waupaca Foundries, ASI International and St. Mary's Foundry.
Students attending the CIC are selected based on their interest in the metal casting industry, the fact that they are looking for a position in this industry, and their academic excellence. The students also have an opportunity to network and learn more about specific companies during dinner with industry representatives at a wide variety of restaurants in downtown Chicago.

During the General Session on Friday, speakers shared their work and personal experiences in the metal casting industry. Jason Gutierrez of Strategic Materials Corporation, Tom Prucha of AFS and Rick James of Metal Technologies each focused on their Contributions to Technology, this year's CIC theme.

The FEF/AFS Distinguished Professor Award was presented to FEF Key Professor, Paul Sanders of Michigan Tech, in recognition of his excellence as a motivator and mentor to his students, as well as his high-level knowledge and interaction with the industry. FEF's highest award, the E.J. Walsh Award, was presented to Bill Sorenson, former FEF Executive Director, in recognition of his many years of service in developing and expanding the impact of the Foundry Educational Foundation.

Next year's conference will be held on November 17 & 18, 2016 at the Westin Michigan Avenue in Chicago.

At the Annual Awards Luncheon, scholarships were presented to 25 students for a total of $59,300.00.

The DIS presented 4 students with the Keith D. Millis Scholarship of $3000 each. Representing the DIS were Pete Guidi, Treasurer and Jim Wood, Executive Director. The four students were;
David Breunig, Wisconsin-Platteville

Devan Denney, Pittsburg State

Adam Foreman, University of Northern Iowa
No Picture Available

Jake Johnson, University of Northern Iowa
More information on this conference or any of the FEF activities can be obtained from the FEF offices at 1695 North Penny Lane, Schaumburg, IL 60173 or telephone at 847/490-9200 or the FEF website at www.fefinc.org.

The Ductile Iron Society wishes everyone a safe and enjoyable holidays! See you all again in 2016.

Jim Wood
DIS Executive Director
12/23/2015
BACK TO BASICS PANEL - CONVERTING GRAY IRON TO DUCTILE TRANSITIONS

Link to Ian Esaki Presentation

Ian Esaki
Ian graduated from Purdue University with a BS in Materials Science & Engineering in 2011. He started his career in the metal lab at Pure Power Technologies, a Gray & CG iron foundry in Indianapolis, IN. In 2013, Ian joined Waupaca Foundry, Plant #6 as a plant metallurgist.

Link to Brandon Reneau Presentation

Brandon Reneau
Brandon graduated from the University of Missouri-Rolla with a BS in Metallurgical Engineering. He worked for Intermet Foundry in Decatur, IL for 4 years, and the Intermet Foundry in Havana, IL for 4 years and currently he is the plant metallurgist and melting group manager at Caterpillar Mapleton Foundry for the last 10 years. Brandon is a member of the 5R & 5P Committees at the AFS and the DIS Research Committee Chairman. He has been a proactive supporter of the AFS and DIS Research by casting samples at CAT. Brandon is also a member of the Board of Directors of the DIS.

Presentation Not Available

John McGoldrick
John graduated from Ohio State University in metallurgical engineering. His first job was at USS Pipe Mill in Lorain, OH. Then John entered the foundry industry in the lab at Sterling Foundry in Wellington, OH in 1984. There he served as Lab Technician, molding supervisor, melting supervisor and then quality control manager making iron castings to 30,000 pounds. In 1991, John moved to Hodge Foundry as a process control manager, then entered into the quality assurance manager position, later adding the technical director responsibilities. John is active in the NWPA Chapter of the AFS, different operating committees of the DIS, ICRI and is the past chairman of the DIS Research Committee.
Dave Sparkman

Dave graduated with his BS in metallurgical engineering from the University of Oklahoma. He completed time in Computer Science from Michigan State University and completed time for his MBA from Bowling Green University. Dave's foundry experience started at Dana Foundry in New Castle, IN. There he served as the Quality Control Manager, Quality Assurance Manager and Plant Metallurgist. Then in 2005 he moved to MeltLab Systems LLC in Winchester, VA and continued till 2009 where he became the President and Owner. Dave has published multiple papers in industry trade journals, and multiple magazine articles. Presented papers in the USA, and Australia at foundry conventions, lectured in the USA, Australia, India, Germany, and Canada.

The DIS welcomes Dave who is here to talk about "Thermal Analysis of Ductile Iron Microstructure"

Rob Peaslee

Rob graduated from the University of Wisconsin Platteville in 1972 with a BS in Industrial Technology. His 43 years in the industry has been at Manitowoc Grey Iron where he serves as President and CEO. He is a two term past President of the Wisconsin Cast Metal Association, is a current Board Member and serves on its energy committee. He also serves on the AFS Division 14A Marketing Committee where he received an Outstanding Service Award in 2008. Rob has put on papers and spoken at AFS chapter meetings, the Milwaukee Regional and several Casting Congresses.

The DIS welcomes Rob who is here to talk about "Inmold Production of Ductile Iron"
Presentation Not Available

Charles Monroe

Charles received his BS in Mechanical Engineering from Pennsylvania State University in 2003 and his MS and PhD in Mechanical Engineering from the University of Iowa in 2005 and 2008 respectively. Charles is currently an Assistant Professor at the University of Alabama at Birmingham, UAB. After his education, Dr. Monroe worked for Caterpillar analyzing manufacturability of steel, iron and aluminum castings. Here he developed many interests in research including hot tearing, thin wall filing, microstructure property relationships, cost analysis of casting manufacture, and more. At UAB, Dr. Monroe is the Key Professor in the Foundry Education Foundation and teaches classes to undergraduates and graduate students focusing on metal casting processing.

The DIS welcomes Charles who is here to talk about "Analysis of Published Cast Iron Experimental Data"

Presentation Not Available

Andy Theisen

Andy graduated from the Milwaukee School of Engineering with his BS in Mechanical Engineering and he is currently pursuing his Master's degree in Engineering Management. Andy is currently the Manager of Product Development with Kondex, where he joined the Company in 2012 and has used his engineering and management skills to quickly advance his role and impact to Kondex. Andy is also certified in project management, and has been a key member in advancing the Kondex laser enhancing technology program.

The DIS welcomes Andy who is here to talk about "Balancing Ductility and Hardness with Laser Enhancing Technology"
 Matt Meyer

Matt graduated in 1998 from Michigan Technology University with a BS in Metallurgical and Materials Engineering and also simultaneously obtained two Masters degrees from the University of Wisconsin - Madison in Environmental Chemistry and Technology and Civil and Environmental Engineering in 2005. Matt is with the Kohler Company of Kohler, WI and manages the central chemical and metallurgical Laboratory for the Corporation, which provides all Kohler business units with material, analytical and environmental support for advanced and new product development, product and process quality control, as well as for environmental compliance. Kohler operates two iron foundries, one in Kohler, WI and Shanghai, China.

Matt is currently active in the research activities of the DIS, and has presented on numerous occasions at DIS technical sessions. At the AFS he is a member of the Executive Committee for Cast Iron-Div 5 on the Papers and Program Committee and past chairman of the Cast Iron Research Committee. For the AFS Wisconsin chapter, Matt serves as director.

Serge Grenier

Serge Grenier obtained his bachelor degree in metallurgical engineering from McGill University, in Montreal, Canada, in 1989. He then completed a Master degree in Material Science, also from McGill University, on the production of silicon nitride powders by the carbothermal reduction process. In 1996, Serge obtained his PhD from Ecole Polytechnique, in Montreal, Canada, on the deposition of titanium nitride films using a reactive thermal plasma process.

Since then, Serge has worked 23 years in a wide variety of materials science fields related to metallurgy, nano-materials, thermal plasma coatings, hydrogen storage systems and ultra-pure materials. He holds 8 patents and is the author of several technical papers on various metallurgical topics.
Serge joined Rio Tinto 5 years ago where he presently holds a research engineer's position in the Ferrous Products Group.

The DIS welcomes back Matt and Serge who are here to present a workshop on "Image Analysis"

**Link to Robert Stransky Presentation**

**Robert Stransky**

Robert graduated from Cleveland State University majoring in Chemistry and Computer Science. He started his career with Ashland Chemical Company from 1978 to 2000 in various QC, Manufacturing, Technical and Sales functions during his 22 year tenure. In 2000, Robert moved to Delta-HA, HA International and finally Globe Metallurgical to 2008 in various technical and sales positions. Then in 2008, he moved to his current position with FairmountSanrl as Regional Sales Manager. Robert is a past member of the AFS Indianapolis Chapter and Chapter Chairman in 2000. He is past member of the INCMA, current member of the AFS 4H Committee, current member of the AFS Northeast Wisconsin Chapter and current member of the DIS.

The DIS welcomes Robert who is here to talk about "Dynamics of the Industrial Sand Markets"

**Link to Eli David Presentation**

**Eli David**

Eli graduated from the Israel Institute of Technology with his bachelor's degree in Materials Engineering and Kent State University with his Masters of Business in Finance. Eli started his foundry career at the Quality Castings Company in Orville, OH as Chief Metallurgist and Technical Director, where he was employed for slightly over 10 years between 1979 and 1989. This position provided extensive exposure to manufacturing, metallurgical and quality aspects of production of Gray, Ductile and Magnesium Castings.
Eli is currently and for the last 12 years has been employed by Globe Metallurgical Inc. as general manager for Foundry Products. Prior to this position Eli was Technical Manager for Globe between 1989 and 2003. He has made numerous presentations at AFS and DIS meetings on various metallurgical and other cast iron foundry related topics. Eli holds a patent as co-inventor of the Flexipor Process (An Inmold Treatment Method for the Production of Ductile Iron).

The DIS welcomes back Eli who is here to talk about "Alloy and Treatment Process Optimization for Quality Ductile Iron"

Link to Si Endo Presentation

Si Endo

Si received his Master's degree in Metallurgical Engineering from Nagoya University in 1996. Following his graduation in 1996 he joined Hitachi Metals in Japan. From 1996 to 2003, he worked as Engineer in Casting Technology Research Laboratory which is one of Hitachi's development centers for auto components. From 2007 to 2011, Si worked as Chief Engineer in the iron casting department which is one of Hitachi's casting products manufacturing plants. From 2012 until now, he has worked as the Plant Metallurgist of HMAC. With this assignment, he is responsible for improvement of engineering, melting and heat treatment and cost reductions.

The DIS welcomes Si who is here to talk about "The Shrinkage and Microstructure Investigation for Ni-Resist Ductile Iron"
FOR IMMEDIATE RELEASE
December 21, 2015
Email: jturner@metal-technologies.com

METAL TECHNOLOGIES AND QUIMMCO AGREE TO FORM JOINT VENTURE

Metal Technologies (MTI), an Auburn, Indiana-based metal caster, and Quimmco, a Mexican industrial conglomerate, have entered into a Memorandum of Understanding to jointly own and operate Quimmco’s Blackhawk de México, S.A. de C.V. (Blackhawk), an iron foundry located in Santa Catarina, Nuevo Leon, Mexico, serving the NAFTA market.

In making the announcement, MTI Chairman and CEO Rick James said that the joint venture “will take advantage of MTI and Quimmco’s strengths, through combining Blackhawk and MTI’s iron foundry technology, expertise and best industrial practices, as well as customer portfolio and supplier base.”

“We are pleased to be able to partner with Quimmco which is a highly respected Mexican business with a widespread range of automotive, agriculture, heavy duty truck and industrial customers throughout the NAFTA region,” James continued. “Many of MTI’s current customers have recognized the growing importance of the Mexican automotive industry in North America and have urged MTI to establish manufacturing capabilities in Mexico,” James said.

Quimmco’s Director General Jesus Barrera echoed these benefits to the new partnership. “The goal of Blackhawk foundry is to grow with our customers to serve the quickly expanding Mexican automotive industry and general economy,” Barrera said.

Barrera continued that “[t]he synergies of Quimmco’s experience and Metal Technologies wide reach into major automotive customers will help assure Blackhawk’s continued growth. We are very pleased having MTI as our partner in Blackhawk.”
MTI has agreed to acquire 49% of the ownership of Blackhawk. MTI and Quimmco have agreed to make additional investments to expand Blackhawk’s manufacturing capabilities and diversify its customers and markets. The transaction is expected to close at the end of the first quarter of 2016.

Metal Technologies is headquartered in Auburn, Indiana and has seven manufacturing facilities in Indiana, Michigan, Minnesota and Tennessee. It produces gray and ductile iron castings, aluminum castings, tooling and machined parts for the automotive, truck, small gasoline engine, appliance, air conditioning, medical device industry and other markets. It employs approximately 1,300 people and has annual sales in excess of $450 million. The company was founded in 1997 by Rick James and remains privately held.

Blackhawk de Mexico, S.A. de C.V. is a wholly owned subsidiary of Quimmco devoted to producing gray and ductile iron castings for clients in Mexico and the United States.

Quimmco is headquartered in Monterrey, Mexico. It is the holding entity of a conglomerate of companies located in Mexico, devoted to industrial and commercial activities, including the design, manufacture, and sale of automotive components, agriculture tractors, construction equipment and chemicals for the domestic and export markets. It employs approximately 5,400 people and has annual sales in excess of $1.2 billion. The company was founded in 1989 by Rodolfo Barrera and is privately held.
Teksid orders third SinterCast installation

- SinterCast System 3000 Plus to be installed at Teksid do Brasil
- Development of passenger vehicle, commercial vehicle and industrial power components
- Teksid CGI production capability in Europe, South America and North America

[Torino, Belo Horizonte and Stockholm, 6 November 2015] - The Teksid group has ordered a third SinterCast process control system, establishing itself as the first foundry group with Compacted Graphite Iron production capability on three continents. Under the terms of the agreement, a SinterCast System 3000 Plus process control system will be installed at the Teksid do Brasil foundry located in Belo Horizonte, Brasil. The installation is planned to be commissioned during the first quarter of 2016 and will initially be used to support product development of passenger vehicle, commercial vehicle and industrial power components. In order to support future plans for high volume series production, Teksid do Brasil opted for the System 3000 Plus technology, providing automatic base treatment by cored wire, the patented SinterCast thermal analysis, and automatic feed forward optimisation of magnesium and inoculant prior to casting.

"The installation of the SinterCast technology at our Belo Horizonte foundry reinforces the global standing of Teksid as a leading provider of technology, components and solutions to the passenger vehicle, commercial vehicle and industrial power industries" said Dr Riccardo Tarantini, President & Chief Executive Officer of Teksid S.p.A. "With SinterCast-CGI capability in our foundries in Brasil, Mexico and Portugal, Teksid is uniquely positioned with the ability to offer regional support for the CGI series production needs of our worldwide customer base."
"The Teksid do Brasil installation marks the sixth commitment for our System 3000 Plus technology. Introduced in 2012, the System 3000 Plus provides the highest level of automation, productivity and process security for high volume series production" said Dr Steve Dawson, President & CEO of SinterCast. "The Teksid commitment also marks our sixth installation commitment of 2015, tying the record for new installations set in 2011 and 2013. The recent increase in installation activity is a clear indication of the increased demand for Compacted Graphite Iron and we appreciate Teksid's initiative to grow the global footprint for the supply of high quality CGI components."

Dr Riccardo Tarantini  
President & Chief Executive Officer  
Teksid S.p.A

Dr Steve Dawson  
President & CEO  
SinterCast AB (publ)

**Teksid S.p.A.** a member of the FCA Group and one of the largest foundry companies in the world, operates iron foundries in Brasil, China, Mexico, Poland and Portugal and two aluminium foundries in Brasil and Italy. The production of iron components such as cylinder blocks and heads, exhaust manifolds, crankshafts, camshafts and suspension components is primarily destined for Chrysler, Cummins, Deutz, Fiat, Ivec, Opel and Renault. Teksid has annual sales of approximately USD 900 million and employs approximately 7,000 people. For more information: [www.teksid.com](http://www.teksid.com)

**SinterCast** is the world's leading supplier of process control technology for the reliable high volume production of Compacted Graphite Iron (CGI). With at least 75% higher tensile strength, 45% higher stiffness and approximately double the fatigue strength of conventional grey cast iron and aluminium, CGI allows engine designers to improve performance, fuel economy and durability while reducing engine size, weight, noise and emissions. With 44 installations in 13 countries, the SinterCast technology is primarily used for the production of petrol and diesel engine cylinder blocks and exhaust components for passenger vehicles; medium-duty and heavy-duty cylinder blocks and heads for commercial vehicles; and, industrial power engine components for marine, rail, off-road and stationary engine applications. SinterCast's series production components range from 2 kg to 9 tonnes, all using the same proven process control technology. The SinterCast share is quoted on the Small Cap segment of the Stockholm NASDAQ OMX stock exchange (Stockholmsbörsen: SINT). For more information: [www.sintercast.com](http://www.sintercast.com)

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Engineered Propulsion Systems leverages CGI for diesel aviation engine

- Advanced diesel engine specifically designed for aviation applications
- Engine testing and aviation authority approval process underway
- 'Flat V8' engine based on a Compacted Graphite Iron cylinder block

[New Richmond, Bridgnorth and Stockholm, 17 December 2015] - Engineered Propulsion Systems (EPS) has uniquely leveraged the strength and stiffness of Compacted Graphite Iron (CGI), together with a 'flat V' engine design, to establish a new benchmark for general aviation applications. Based on a CGI cylinder block, the 4.3 litre, eight-cylinder design results in a compact, low profile engine package that provides ease of installation, durability and low aerodynamic drag. The use of CGI enabled EPS to engineer a clean sheet Aviation Diesel engine that is setting new standards in weight, size, reliability, and most importantly, fuel consumption. Initial testing of the pre-production engine has demonstrated specific power of 105 horsepower per litre (77 kW/l), resulting in an output of 450 horsepower (332 kW). The installed wet weight of the 450 horsepower diesel engine package is within 45 pounds (20 kg) of alternative 350 horsepower (257 kW) air-cooled turbocharged engines currently used in aero applications.

Heralded as the potential for a new era in aviation engines, the Graflight aero diesel promises to be more fuel efficient than any general aviation engine currently on the market. The diesel combustion process, together with the design freedom provided by
high strength CGI coupled with steel pistons, enable EPS to realise 30-50% lower fuel consumption and emissions compared to conventional aero engines. Flying range and payload are also increased. With the prospect that avgas (leaded aviation gasoline) will be prohibited, the ability of the EPS engine to use widely available and low cost jet and diesel fuels provides a significant global growth opportunity. Engine and flight tests are currently underway and EPS expects Federal Aviation Authority approvals during 2017. With series production awarded to the Grainger & Worrall foundry in the UK, using the SinterCast process control technology, the engine is intended for use in single and twin engined aircraft, small helicopters, unmanned military aircraft, and potentially marine applications.

"Building on our design experience with automotive diesel engines, we knew that Compacted Graphite Iron was the optimal material for the crankcase of our Graflight V8" said Mr Michael Fuchs, President of EPS. "The aero-engine industry has been relying on outdated engine technology and fuels for more than 20 years. Our use of modern technologies such as CGI, steel pistons, common rail fuel injection and electronic engine control form the basis of our competitive advantage, our contribution to the aviation industry, and our market opportunity. Our partnerships for the supply of critical components and technologies, with proven world class suppliers like Grainger & Worrall and SinterCast, are a key element of our ability to meet the necessarily stringent requirements set by the aviation authorities."

Together, Mr Edward Grainger, Business Development Director at Grainger & Worrall and Dr Steve Dawson, President & CEO of SinterCast said: "we are pleased to contribute our experience from more than 10 years of joint CGI product development and the launch of more than 50 state-of-the-art CGI engine programmes to this exciting project, both for the development phase and for the future series production. The EPS engine provides a high profile application for CGI and further reinforces the benefits of CGI in demanding modern engine applications."

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Founded in 2006, **Engineered Propulsion Systems** (EPS) is intent on setting a new standard for propeller-driven airplane engines. With more than 40 years of combined engine engineering experience between the two innovators, EPS offers a new solution for single and twin engine aircraft that provides revolutionary improvements in fuel consumption, payload, range, flight speed, durability and CO2 emissions. Based in New Richmond, Wisconsin, EPS has established a pilot manufacturing facility with expansion capability for the future series production of the Graflight V8 aero diesel engine. For more information: [http://eps.aero/](http://eps.aero/)

**Grainger & Worrall** is at the global forefront of rapid prototyping and casting innovation, with services including engineering support for component design, pattern making, casting and machining. A privately owned, third generation family company, Grainger & Worrall provides prototyping and small series production solutions for complex high integrity structural castings. The Grainger & Worrall facilities cast and machine components in grey iron, SinterCast-CGI, ductile iron and aluminum for the world's leading automotive and aeronautical companies and for demanding motorsport applications. For more information: [http://www.gwcast.com/en/](http://www.gwcast.com/en/)

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NEWS BRIEFS

DMG MORI

DMG MORI USA Launches Customer-Centric Sales and Service Model

New direct-to-customer platform will enable the company to better serve customers and drive industry-leading product development

HOFFMAN ESTATES, Ill., September 25, 2015 – DMG MORI, a global leader in manufacturing technology, today launched a direct-to-customer sales and service model in the United States. The company will double its existing local service and sales centers to 27 locations across the country in close proximity to customers. This expansion will enable DMG MORI USA’s sales and service teams to more efficiently and effectively serve more than 13,000 customers and nearly 100,000 machine tool users across industries including aerospace, automotive and medical industries.

The new model will connect DMG MORI USA employees closely to customers and will speed up critical processes, such as managing local service support and sharing new product improvements based on the feedback of U.S. customers. It also maximizes the company’s already strong ability to quickly reach and service machines, and take immediate action on customer feedback. This direct sales and service model is part of a longstanding effort by DMG MORI to closely partner with customers.

“DMG MORI USA will partner on a very localized basis with our customers to improve value and outcomes, and ensure they’re fully connected to the innovative power we can offer through our global size and scale,” said Dr. Thorsten Schmidt, who will lead DMG MORI USA as Chief Executive Officer. “This transition also opens great opportunities for DMG MORI employees who will now have the freedom to work directly with customers, co-create advancements and deliver insight-driven solutions.”

The move to more localized service accompanies several internal DMG MORI USA leadership changes. DMG MORI’s Global Executive Board selected Dr. Schmidt to lead
DMG MORI USA, calling upon Dr. Schmidt’s more than 13 years of leadership experience within the company to run the U.S. market.

Dr. Schmidt will be supported by a management team of leaders currently working at DMG MORI USA. Current President and CEO Mark Mohr will support the new sales and service organization as President of the DMG MORI Manufacturing plant in Davis, CA, utilizing his extensive knowledge of customer needs in future product developments.

Finally, with the expansion, DMG MORI USA will be focused on a large-scale recruitment effort in local markets. This effort will ensure the best regional talent is brought on board to local sales and service centers, and exemplifies DMG MORI USA’s continuing commitment to supporting and expanding local economies with recruitment, training and educational investment efforts.

About DMG MORI

DMG MORI (TYO: 6141) is a global leader in innovative, high-tech lathes, milling machines, electronics and systems products. DMG MORI develops optimized manufacturing procedures, comprehensive turnkey technology solutions and supports customers through the entire production process. The company’s U.S. headquarters are located in Hoffman Estates, Illinois.

Technical & Business Press Information

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NEWS BRIEFS

Support Foundry Educational Foundation

Nurture Our Industry’s Future

Donate today and help grow the next generation of metal casting leaders!

Annual donations support students at our 20 certified schools with:
- scholarships
- state-of-the-art metal casting laboratory facilities
- dynamic key professors
- direct connection between students and industry

To make a gift, please visit our website at www.fefinc.org, call 847-690-9200, or scan the QR code to the left. Your donation is essential to continuing to educate the next generation of industry leaders.

As a 501c3 nonprofit, all donations to FEF are tax deductible.

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IMOA COMMUNICATION

Subject: Molybdenum production up, use down

Global production of molybdenum increased to 142.1 million pounds in the second quarter of 2015, up 10% from 128.8 million pounds in the previous quarter, but still 2% lower compared with the second quarter in 2014, figures released today by the International Molybdenum Association (IMOA) show.
Global use of molybdenum fell slightly to 126.3 million pounds, down 1% from 127.3 million pounds in the previous quarter and 12% lower compared with the second quarter in 2014.

China remained the biggest producer, with production increasing from 46.3 million pounds in the first quarter of 2015 to 52.3 million pounds in the second quarter, an increase of 13% and some 5% higher compared with the same quarter in 2014.

Production in North America rose from 37.8 million pounds in the first quarter of 2015 to 38.1 million pounds in the second quarter, an increase of 1%, but some 25% less compared with the same period in 2014. Production in South America increased from 34.2 million pounds in the first quarter of 2015 to 41.3 million pounds in the second quarter. Production in other countries was static at 10.5 million pounds.

China remained the biggest user, with 43.4 million pounds in the second quarter of 2015, up from 42.4 million pounds in the first quarter but down 15% compared with the second quarter last year. Europe was the second largest user with 34.1 million pounds, down slightly from 34.4 million pounds in the previous quarter, and down 10% compared with the second quarter last year.

Usage in the USA decreased from 14.1 to 13.4 million pounds, down 5% compared with the previous quarter and down 8% compared with the second quarter in 2014. Usage in Japan was 12.5 million pounds, down 6% from 13.3 million pounds in the first quarter and down 19% compared with the second quarter last year. Usage in the CIS countries decreased slightly by 3% to 5.5 million pounds, while usage in other countries remained static at 17.4 million pounds.

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MolyReview – a magazine from IMOA

MolyReview is published twice yearly by the International Molybdenum Association (IMOA) to showcase some of the interesting and unexpected everyday uses of molybdenum. Each edition features several short articles relating to molybdenum and its various applications.

As a publication which covers applications involving molybdenum, we hope that you find it of interest. Articles and images are subject to copyright but may be reproduced with permission. Please contact IMOA at the address below if you are interested in featuring an article, or for any further information about IMOA or uses of molybdenum.

Download the magazine at:


IMOA is the non-profit trade association representing the interests of most of the world’s molybdenum producers, converters, consumers and traders. The International Molybdenum Association 454-458 Chiswick High Road, London W4 5TT United Kingdom www.imoa.info

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Manufacturing Day™ 2015 Helps Change Perception of Industry

Eighty one percent of students surveyed are more convinced manufacturing provides careers that are both interesting and rewarding.

WASHINGTON, December 2, 2015: Manufacturing Day 2015, including all events scheduled throughout the year, has far exceeded expectations of scale and impact, reaching more than 400,000 participants and improving the public’s perception of manufacturing.

Teachers, students, parents/influencers, and employers shared their perspective on Manufacturing Day (MFG DAY®) using the new Deloitte perception survey developed in collaboration with The Manufacturing Institute. The survey was distributed to more than 2,500 manufacturing hosts across the United States to gather national data from teachers, students and parents on how MFG DAY events truly make a difference in local communities. The survey found after attending Manufacturing Day events, eighty one percent of student respondents are more convinced manufacturing provides careers that are both interesting and rewarding and seventy-one percent are more likely to tell friends, family, parents or colleagues about manufacturing.

“The co-producers of Manufacturing Day could not be more pleased with the results of the 2015 celebration,” said Ed Youdel, president and CEO of the Fabricators & Manufacturers Association (FMA), one of the co-producing organizations. “Our goal, when we created Manufacturing Day just three years ago, was to bring manufacturing into the mainstream. We wanted to showcase this important sector of the American economy and introduce young people to the career options and exciting work environments manufacturing offers.”

Educators’ responses to the survey also illustrated the positive impact Manufacturing Day has on public perception. Ninety percent indicated they are more likely to encourage students to pursue a career in manufacturing and ninety one percent found the activities/tours to be interesting and engaging.

“By capturing the impact of a national Manufacturing Day, we can see how it has made a difference in changing the image of the industry,” Institute Executive Director Jennifer McNelly said. “Every day we aspire to make this industry better than it was..."
yesterday, and the results of the Manufacturing Day survey illustrate how we are improving the image of the industry through Manufacturing Day, and positioning the industry as a rewarding career path for future generations.”

“This survey further demonstrates the changing perception of manufacturing across the country, particularly among young people, and we have events like Manufacturing Day to thank in large part for this positive trend,” said National Association of Manufacturers President and CEO Jay Timmons. “We appreciate the continued efforts of thousands of manufacturers from across the country to educate students, parents and their communities about the many career opportunities through our industry.”

Manufacturers responding to the survey also expressed positive feedback regarding their participation in Manufacturing Day. Ninety four percent found there was value in participating in the event and eighty eight percent are more likely to continue engaging with high schools or colleges in their area. An infographic summarizing the results of the 2015 survey can be found here. To see the interactive dashboard that provides the ability to analyze results in more detail, follow this link.

“It is powerful to see that our collective efforts are making a difference in educating the public about manufacturing and its rewarding careers and how we are helping manufacturers throughout the U.S. connect with the next generation workforce” said Carroll Thomas, director of the Manufacturing Extension Partnership.

For MFG Day 2015, a total of 2,620 events were held across North America including all 50 states, Canada and Puerto Rico. Based on data collected from host company evaluations, more than 225,000 students and 55,000 parents, teachers and other attendees participated in these live events. Twelve virtual events helped even more people participate, with the Discovery Education and Alcoa online program reporting the largest participation of any single event, with more than 120,000 students. This brings the total number of participants in MFG Day 2015 activities to more than 400,000.

MFG DAY addresses common misperceptions about manufacturing by giving manufacturers an opportunity to open their doors and show, in a coordinated effort, what manufacturing is — and what it isn’t. By working together during and after MFG Day, manufacturers begin to address the skilled labor shortage they face, connect with future generations, take charge of the public image of manufacturing, and ensure the ongoing prosperity of the whole industry.
"As manufacturers opened their doors to the public on Manufacturing Day, they shared firsthand the opportunities available in today’s advanced manufacturing environment.

By gathering research through the Manufacturing Day survey, the Manufacturing Day producers can measure the impact Manufacturing Day is having on perception, provide insight into building upon that momentum, and further efforts to improve public perception of manufacturing," said Craig Giffi, vice chairman, Deloitte LLP and automotive industry leader.

MFG Day is designed to amplify the voice of individual manufacturers and help them coordinate to address their common concerns and challenges. The rallying point for a growing mass movement, MFG Day empowers manufacturers to come together to address their collective challenges so they can help their communities and future generations thrive.

Manufacturing Day 2015 was supported by more than 20 sponsoring companies and organizations. The sponsor list was headed by Platinum sponsor Shell Lubricants and Gold sponsors Alliance for American Manufacturing and SME. In addition, more than 170 organizations endorsed Manufacturing Day and served as the conduit through which information about the event was disseminated.

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**About Manufacturing Day** SM A panel of co-producers comprised of the Fabricators & Manufacturers Association, International (FMA), the National Association of Manufacturers (NAM), The Manufacturing Institute (MI), the National Institute of Standards and Technology’s (NIST) Hollings Manufacturing Extension Partnership (MEP), and guest producer Industrial Strength Marketing (ISM) provide the centralized support necessary to coordinate this nationwide array of simultaneous events. The national media partners for the event are the Science Channel and Edge Factor, and the national movie partner is American Made Movie. [www.mfgday.com](http://www.mfgday.com).

**About The Manufacturing Institute** The Manufacturing Institute (the Institute) is the 501(c)(3) affiliate of the National Association of Manufacturers. As a non-partisan organization, the Institute is committed to delivering leading-edge information and services to the nation’s manufacturers. The Institute is the authority on the attraction, qualification and development of world-class manufacturing talent. For more information, please visit [www.themanufacturinginstitute.org](http://www.themanufacturinginstitute.org).
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