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Questions/comments : asennett@aem.org

Manufacturing the future of ag



"If you are a technology buff, ag equipment manufacturing and the development and creation of products used on the farm is the place to be today."

Gone are the days of just bending steel, putting on a shiny coat of paint, and pushing product out the door. Today's world of manufacturing in the agricultural sector means stretching the technology limits and changing the way we feed the world.

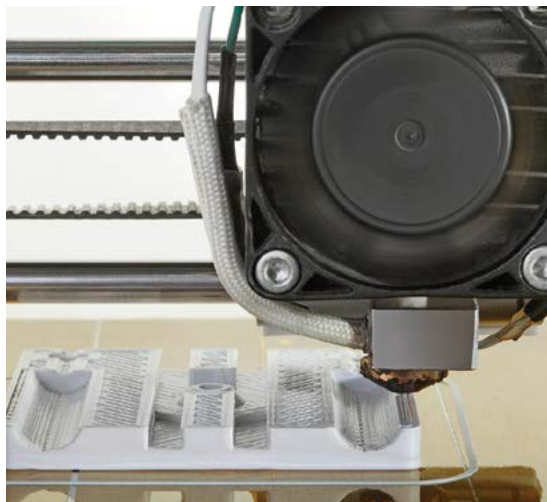
Go into manufacturing plants today and you will see the world in a different way. You will see robots that have been programmed to laser cut, bend, and paint steel down to the smallest of detail maximizing the use of every inch of raw material and minimizing waste. You will see an environment that includes 3D modeling, simulation and visualization and using software in a virtualized environment. You will see 3D printing being employed to create parts and components used to build prototypes and the equipment itself. And you will see

a group of software engineers working together internally and also with outside companies to determine what information should be gleaned from the field through the planting and harvesting processes and integrated with Farm Management systems. Yes that is Big, or better yet, SMART data.

People are working together to determine how to use this data, integrate it with other datasets about soil types, weather, rainfall, and inputs all to make the world a better place that produces an abundance of food for the growing world population. And they are working on who should use the data and how to keep it safe and secure and in the right hands. This data will change the world we live in as it affords us with a look into the future, providing indicators of when

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Manufacturing the future of ag



equipment may break down and fixing things in a preventative mode instead of in a reactive mode. And perhaps we will be using 3D printers at the dealership or on the farm to create a part that will be needed for preventative maintenance.

And let's not forget, we are designing autonomous machines that already drive themselves, in part through the use of gps mapping and sensors. Speaking of sensors, they are used everywhere. Through the use of sensors, plants can tell us what they need and when they need nutrients, water, or are being stressed - triggering irrigation for nutrient application. And then there's the advent of the use of unmanned aerial vehicles (UAVs). These are being manufactured for multiple uses from spraying to mapping to field observation.

I know this is very much oversimplifying how we use these technologies. But from the technology used in the plant to manufacture the equipment to the advanced capabilities of that equipment

in the field - virtual imagery, 3D printing, robots, autonomous vehicles, UAVs - agriculture has evolved into an incredibly sophisticated industry, a dream job for technology enthusiasts. No wonder companies like Google are looking at our sector with great interest and introducing technology like Google Glass. It only makes sense. If you are a technology buff, ag equipment manufacturing and the development and creation of products used on the farm is the place to be today. I appreciate every day that I get to be part of such an exciting industry. ■



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AEF ISOBUS database now as smartphone app

The Agricultural Industry Electronics Foundation (AEF) database of certified ISOBUS compatible agriculture equipment is now available as an app for iOS and Android. These days, smartphones and their continued increasing use to access mobile services is a fact of life. The rapid increase in app usage is an impressive illustration of the important role that mobile applications now have in the everyday activities of the modern Internet user - which of course includes farmers, dealers and ag equipment manufacturers.

The app was debuted for download at this year's November Agritechnica show

in Hanover for both Android and iOS mobile operating systems. As a first step, a compatibility check can now be run from a mobile phone. This lists the ISOBUS functionalities of a particular agriculture implement. The results can be shared with others by e-mail. The AEF ISOBUS Database app is available for download free of charge from the Apple Store (iOS) or the Google Play Store (Android). All currently registered database users can use the new app with their login details. New users can sign up to the database via the app, and will then be able to access both. The AEF is currently working on updates to the app, and on versions for use with tablets.

For questions on the ISOBUS database or the new app, contact AEF Technical Director for North America Mark Benishek at mbenishek@aem.org. ■



Words of wisdom on technology and disruption

A strong list of presenters at AEM's 2015 Annual Conference focused on the industry's future challenges, such as navigating technological change and growing the future workforce. More than 450 registered attendees learned about the next potential wave of disruptive technologies set to hit the industry.



▲ “The cost of developing your initial prototype has dropped by 98 percent over the last decade. And that fundamentally changes the calculus for deciding whether or not to start a company and how innovation can happen within large companies.” **Mark Hatch**, CEO and founder of TechShop shared insights about how the Maker Movement shows great promise for fostering innovation.



▲ **Jeremy Bout**, executive director of Edge Factor, focused on how leaders can engage the next generation of equipment manufacturers. “They have to get involved. They have to be leaders in their communities and engage with local educators. Manufacturers must be part of the solution.”



▲ **Derek Woodgate**, founder of The Futures Lab, reinforced how our industry's future depends on intelligent construction and upskilling the workforce to adapt to technology. “How can the roadway be seen not just as asphalt and concrete, but something that is much more meaningful to our lives and brings new dimensions. That's where these type of new technologies are starting to impact.”



▲ Entrepreneur **Scott Klososky** led a workshop about having a vision for the technology of the future. “There's a lot to fear with technology. If you get on the wrong side of the tools and don't make the proper investment, it will be a door closer. On the other side, there is huge opportunity and a lot of upside to embracing new technology.”

Dr. Kevin Price, EVP of AgPixel, shared his insights on how drones and other technologies are disrupting and changing the industry. “Drone technologies can be used for many applications for this industry, such as 3 dimension modeling, looking at crops, looking at wildlife and habitats, among other applications.”

Carisa Miklusak, CEO of tMedia, discussed the positive changes of how digital technologies offer tools to build brand awareness and customer loyalty. “The most important aspects of what you do online with social media in your business, are the results that they make offline.”

Eli Lustgarten, senior vice president of Longbow Research, provided an inside look at the economy and today's new normal facing the industry. “These are tough times, but the profitability of American companies is terrific, and they are managing the downturn from a financial standpoint in better shape than we've seen.”

Lorraine Bardeen, strategy, business, and commercial and media partnerships for Microsoft HoloLens and for one of Xbox's largest game studios gave attendees a preview of wearable technology and how advances in robotics and computing are changing how humans and machines interact. “Holographic computing, augmented reality and artificial intelligence are all now a part of our “mixed reality” which combine to give us new abilities across the product life cycle.”

Inspirational words helped kick off the AEM Annual Conference held November 2-4 at The Ritz Carlton-Key Biscayne in Miami, FL. Poet David Bowden delivered an inspiring original poem about the impact our members have on society.

“You are not just makers of machines, you are makers of life.”

While the 2015 program challenged members to disrupt the norm with a host of new ideas and technologies, there were also plenty of opportunities for members to interact, network and learn from each other in an open, informal setting.

Mark your calendar for next year's Annual Conference being held November 16-18, 2016 in Santa Barbara, CA. ■

DC initiatives: year in review



The first years after the passage of a Farm Bill are typically less intense for the agricultural community in Washington. Nonetheless, issues vital to the long-term vitality of the agricultural sector will rise to the forefront. In today's challenging times for the industry, these issues take on even more importance. Thankfully, we've seen positive movement on a number of them this year.

This year has seen the Environmental Protection Agency (EPA) make major, and ill-advised, decisions that struck close to the heart of the ag economy. Barely a conversation in Washington circles could be held this year without mention of the disastrous direction EPA took in their rewrite of what defines a 'Water of the U.S.' under the Clean Water Act. EPA's gross overreach sparked a furious battle in congress as AEM joined dozens of groups in support of legislation to counteract the agency's

power-grab. While these efforts have become bogged down in political trench warfare, the courts have stepped in to stay the implementation of the new rules for the time being.

It has also been a trying year for the Renewable Fuels Standard as EPA continues to signal their intent to deal this important provision a harmful blow. The agency is expected to ignore the law and give the oil industry the ability to stunt further expansion into second generation biofuels by allowing them to cite a lack of fueling infrastructure, which they control, as a reason for failure to increase the blend of renewables into our nation's fuel supply. AEM is working with the Fuels America Coalition to push back on EPA's misguided actions and has successfully held the line against legislative attempts in congress to pull us below the 10 percent ethanol blend we've fought hard to achieve.

AEM and our Sprayer Leadership Group members have had positive dealings with EPA this year. AEM has worked productively with the agency in regards to their new Drift Reduction Technology (DRT) registry. These activities included a tour of sprayer member company exhibits at Farm Progress Show by key EPA officials from the Office of Pesticide Programs. This proved highly effective in educating them on how advanced and complex drift reduction systems have become. We look forward to working with the agency to improve the DRT program, as well as to continue our productive relationship on promoting pollinator health.

AEM also recently rallied to the flag when a budget cutting proposal called for a \$3 billion reduction in the newly enacted crop insurance programs. The uproar from a unified ag community caused the dangerous proposal to be withdrawn. We are working to ensure this idea doesn't rear its head in 2016 by reminding lawmakers how important crop insurance is to our farmers and ranchers and equipment manufacturers.

The advancement of the pro-trade agenda has been a bright spot this year with the passage of Trade Promotion Authority and reauthorization of the Ex-Im Bank. With 95 percent of the world's population outside American borders, it is vital that AEM continues to push for policy to enhance exports.

Lastly, in the closing weeks of December we expect congress to pass an extension of the critical Section 179 expensing provision that has become an important driver of equipment sales.

AEM is now turning its attention to 2016 and will continue to defend agriculture's interests in Washington. ■



*Nick Tindall, AEM Director,
Government Affairs*

EPA puts future of renewables in doubt

On November 30, the Environmental Protection Agency (EPA) ended nearly two years of political jousting when it released its long delayed final ethanol blend levels for 2014, 2015 and 2016.

While AEM is pleased the agency heeded calls to increase the 2016 blend levels from their earlier proposals, we are disappointed that their 14.5 billion gallons mandate still falls 500 million gallons short of the 15 billion set forth in the 2007 Energy Bill. Furthermore, EPA based their waiver of the statutory levels upon perceived distribution capacity which is not part of the law. In fact, congress considered granting EPA waiver authority based on fueling infrastructure but chose not to because they understood it would be an easy out for the virtually integrated oil industry to protect market share.

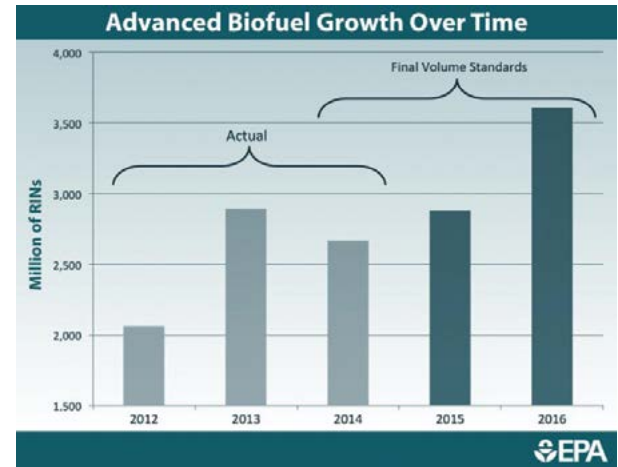
The resulting decrease in the demand for corn couldn't come at a worse time. The average price is below \$4 a bushel while the average cost of production is \$4.70. The U.S. Department of Agriculture was already forecasting farm income to drop 38 percent this year, the largest single year decrease since 1983, and EPA's decision is not likely to help reverse course. The resulting economic impact will send ripples far beyond the farm gate and rural America, affecting a broad swath of sectors, including

agricultural equipment manufacturers.

The near-term effects on the corn markets could prove less significant than this decision's influence on the long-term development of the advanced ethanol industry. This year saw the opening of four commercial scale cellulosic ethanol production facilities and this infant sector seemed poised for a similar rapid growth trend as traditional ethanol experienced starting in 2005. However, EPA's decision to waive the statutory blend levels based on fueling infrastructure places the future of ethanol in the hands of the oil industry. By continuing to drag their feet on installing pumps to provide consumer choice, each year the oil lobby can cite a lack of distribution as a reason to forgo increases in the blend levels.

The capital investment markets read the signals EPA was sending on this matter several months back and advanced ethanol projects saw a flight of resources. Now that the rule has been made final it will be even more difficult to attract risk adverse capital to fund the construction of cellulosic facilities.

As shown on the chart above, EPA did raise the blend levels of advanced biofuels but this isn't expected to instill the level of confidence



1 RIN = 1 gallon of ethanol blended into the fuel supply

needed to attract the amount of investors required to drive meaningful growth.

With the rule set for 2016, the battle will shift to the halls of congress where the oil industry is already calling for a full repeal of the Renewable Fuels Standard. Several ethanol trade associations and the oil industry are also exploring court challenges to the final rule. AEM will remain an active member of the Fuel America Coalition to push forward and pave a path for a renewable fuels future. ■

Successful AEMPAC Gala to fuel ag policy



Over 275 attendees turned out for the fifth annual AEMPAC Gala dinner and fundraising auction, which took place November 3 at the Briza on the Bay on Miami's Biscayne Bay waterfront. The gala was held in conjunction with the 2015 AEM Annual Conference.

This year's event again broke fundraising records and will have netted over \$100,000 for AEMPAC. These funds will play a critical role in AEM's ag policy strategy for 2016, helping us deliver our core messages directly to lawmakers and ensuring our friends return for the next congress. ■

Agritech Business Barometer



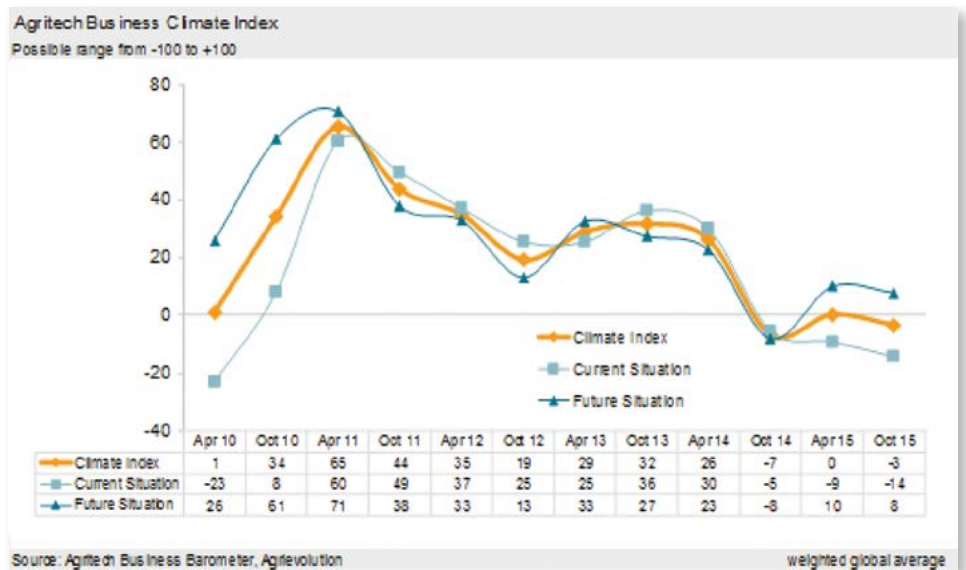
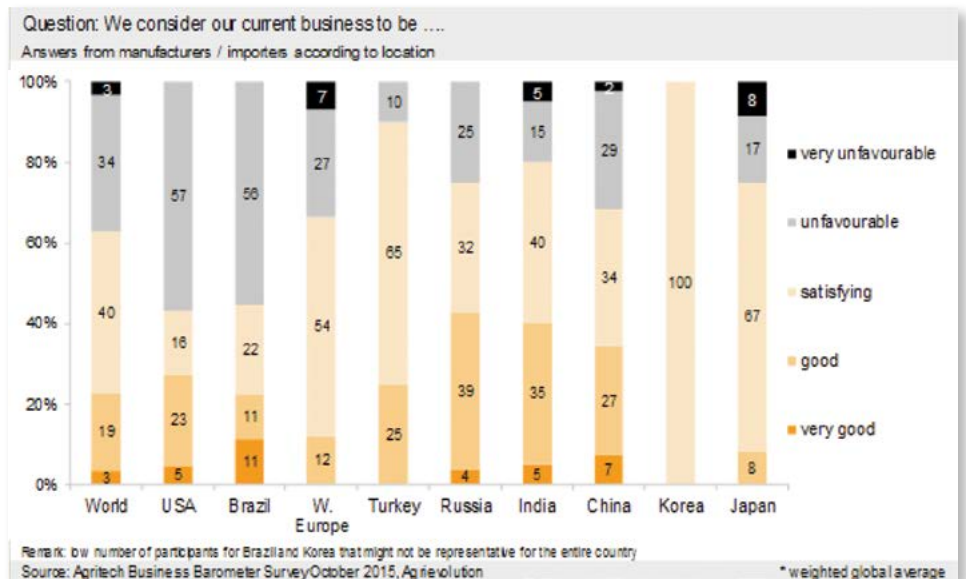
The Agritech Business Barometer surveys ag equipment manufacturing executives from around the world to understand

current and future developments in the global agricultural machinery industry. In September 2015, 294 participants from China, Western Europe, India, Japan, South Korea, Brazil, Russia, Turkey and the United States contributed to the survey. The project is managed through the Agrievolution Alliance, the global umbrella network for agricultural machinery associations representing more than 6000 ag equipment manufacturing companies.

The business climate index declined slightly by 3 points. The decline illustrates that the global downturn of the sector has not bottomed out. The index is comprised of a current and future component. The current component has been declining since April 2013 and is currently at its lowest point in this cycle and the lowest point since the April 2010 start of the survey. On global average, 19% of agricultural machinery companies regard their current business to be "good" while 34% describe it as unfavourable. The future component has dropped to 8 from 10. It will be interesting to see if the optimism holds steady or will again drop as it did after the beginning of this year.

While there are no strong global trends, there are some variations between regions. North and South America, namely the US and Brazil, continue to experience a strong downturn as new orders fall short. Current demand also remains very weak. Additionally, Brazil is struggling with strong credit restraints.

Eastern markets such as Russia, China and India seem to be in a better state. Government support is ranked as one of the most important influences on the market. Russian and Chinese survey participants



indicated that they were the most satisfied with their governments' support, while the Americans, Brazilians and Turks leaned more towards the negative.

The general mood of farmers is worse than in previous surveys due to the lower commodity prices and thus lower profitability. This may not change in the short-term and could slow demand for new machines.

The survey provides alliance members and their participating companies with timely and accurate global market trends data

for business planning. The alliance also releases a public summary report, available on the Agrievolution Alliance website (www.agrievolution.com). For more information or to sign up for this survey, please email Benjamin Duyck, AEM's MI director at bduyck@aem.org



*Benjamin Duyck, Director,
Market Intelligence*

U.S. export trends and analysis

World Area	Exports			Imports		
	2015 3rd Qtr	% Change Q/Q	% Change Y/Y	2015 3rd qtr	% Change Q/Q	% Change Y/Y
Africa	\$ 65,603,826	0.8%	-33.1%	\$ 852,899	30.2%	-32.6%
Asia	\$ 235,627,600	-27.4%	25.4%	\$ 710,725,507	-4.3%	5.7%
Australia and Oceania	\$ 184,174,570	-21.4%	-6.6%	\$ 18,346,379	2.2%	-10.7%
Central America	\$ 290,208,170	3.3%	1.6%	\$ 184,712,522	13.2%	9.5%
Europe	\$ 334,187,569	-20.7%	-19.1%	\$ 790,017,451	-13.4%	-12.8%
North America	\$ 512,431,176	-25.4%	-22.4%	\$ 192,480,458	-13.2%	-29.1%
South America	\$ 152,731,960	-15.3%	-41.9%	\$ 15,628,601	33.6%	-0.1%
World TOTAL	\$ 1,774,964,871	-19.1%	-15.7%	\$ 1,912,763,817	-7.6%	-6.9%

The table above shows that exports of U.S.-made agricultural equipment declined 15.7 percent for the first three quarters of 2015 compared to January-September 2014, for a total \$1.7 billion shipped worldwide. Asia recorded double-digit gains, while South America and Africa had the steepest declines. Imports of U.S.-

made agricultural equipment also declined by 6.9 percent in Q3 2015 compared to the previous year. We did see some growth in imports from Asia and Central America.

As indicated by the Agritech Business Barometer on the previous page the global downturn has not bottomed out.

As the dollar continues to remain strong in international markets, U.S. companies will continue to be at a competitive disadvantage. Aside from a strong U.S. dollar, the lower commodity prices are taking a toll on world-wide farm income, profitability and thus exports. ■

Trade Data Source: U.S. Department of Commerce

THE BELOW CHARTS ILLUSTRATE A ROLLING 4 QUARTERS VS. PREVIOUS 4 QUARTERS FOR COUNTRIES WITH > \$25 MIL./YR IN EXPORTS

Top 10 Growth Countries - US Ag Equipment Exports			
Country	Last 4 Qtrs	Prev 4 Qtrs	% Change
CHINA	\$ 452,614,213	\$ 352,436,095	28.4%
CHILE	\$ 156,776,025	\$ 134,432,235	16.6%
MEXICO	\$ 976,349,642	\$ 918,725,845	6.3%
SAUDI ARABIA	\$ 58,360,475	\$ 55,352,191	5.4%
BELGIUM	\$ 168,715,750	\$ 165,221,471	2.1%
PERU	\$ 46,377,908	\$ 46,033,309	0.7%
GUATEMALA	\$ 35,020,694	\$ 34,930,975	0.3%
UNITED KINGDOM	\$ 167,473,217	\$ 173,093,770	-3.2%
UNITED ARAB EMIRATES	\$ 30,956,827	\$ 33,688,659	-8.1%
AUSTRALIA	\$ 627,867,506	\$ 687,371,473	-8.7%
Global Total	\$ 7,427,388,793	\$ 9,578,636,951	-22.5%

Bottom 10 Growth Countries - US Ag Equipment Exports			
Country	Last 4 Qtrs	Prev 4 Qtrs	% Change
UKRAINE	\$ 46,611,127	\$ 235,911,080	-80.2%
RUSSIA	\$ 79,557,194	\$ 258,191,812	-69.2%
HONDURAS	\$ 10,718,370	\$ 31,027,872	-65.5%
LITHUANIA	\$ 14,481,399	\$ 37,292,464	-61.2%
URUGUAY	\$ 32,433,883	\$ 81,296,601	-60.1%
DENMARK	\$ 28,003,448	\$ 60,067,352	-53.4%
PARAGUAY	\$ 14,897,560	\$ 31,647,111	-52.9%
SURINAME	\$ 13,384,978	\$ 27,767,865	-51.8%
BRAZIL	\$ 239,337,209	\$ 456,174,115	-47.5%
TURKEY	\$ 41,494,738	\$ 69,536,000	-40.3%
Global Total	\$ 7,427,388,793	\$ 9,578,636,951	-22.5%

Top 10 Countries - US Ag Equipment Imports			
Country	Last 4 Qtrs	Prev 4 Qtrs	% Change
GERMANY	\$ 1,486,748,580	\$ 1,426,459,777	4.2%
CANADA	\$ 1,225,156,043	\$ 1,392,428,189	-12.0%
JAPAN	\$ 1,014,482,567	\$ 1,246,193,052	-18.6%
ITALY	\$ 788,438,399	\$ 668,426,097	18.0%
MEXICO	\$ 762,747,473	\$ 1,269,014,892	-39.9%
CHINA	\$ 696,268,405	\$ 1,250,665,972	-44.3%
UNITED KINGDOM	\$ 381,213,329	\$ 432,122,743	-11.8%
INDIA	\$ 357,845,519	\$ 354,040,053	1.1%
FRANCE	\$ 265,957,047	\$ 294,102,529	-9.6%
TURKEY	\$ 199,536,615	\$ 91,062,683	119.1%
Global Total	\$ 7,975,480,981	\$ 9,032,888,459	-11.7%

Top 10 Countries - US Ag Equipment Exports			
Country	Last 4 Qtrs	Prev 4 Qtrs	% Change
CANADA	\$ 2,207,462,597	\$ 3,109,889,066	-29.0%
MEXICO	\$ 976,349,642	\$ 918,725,845	6.3%
AUSTRALIA	\$ 627,867,506	\$ 687,371,473	-8.7%
CHINA	\$ 452,614,213	\$ 352,436,095	28.4%
GERMANY	\$ 243,539,219	\$ 345,614,579	-29.5%
BRAZIL	\$ 239,337,209	\$ 456,174,115	-47.5%
SOUTH AFRICA	\$ 185,248,458	\$ 255,974,646	-27.6%
FRANCE	\$ 183,189,886	\$ 255,209,119	-28.2%
BELGIUM	\$ 168,715,750	\$ 165,221,471	2.1%
UNITED KINGDOM	\$ 167,473,217	\$ 173,093,770	-3.2%
Global Total	\$ 7,427,388,793	\$ 9,578,636,951	-22.5%

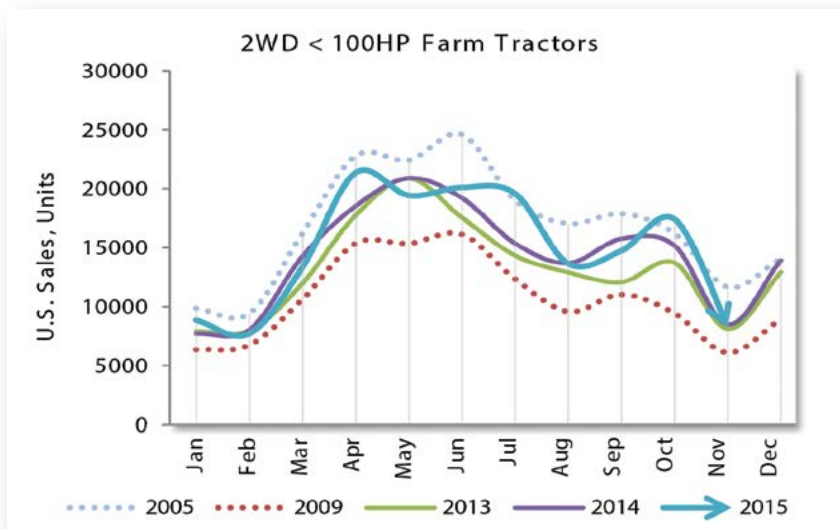
AEM Ag flash equipment sales data

	U.S. Unit Retail Sales						Beginning Inventory
	November			YTD — November			
	2015	2014	%/Chg	2015	2014	%Chg	
2WD Farm Tractors							
<40 HP	5,104	5,019	1.7%	110,433	102,583	7.7%	65,940
40< 100 HP	3,115	3,470	-10.2%	53,712	54,300	-1.1%	33,643
100+ HP	914	1,540	-40.6%	21,741	28,799	-24.5%	9,795
Total 2WD Farm Tractors	9,133	10,029	-8.9%	185,886	185,682	0.1%	109,378
4WD Farm Tractors	142	253	-43.9%	2,702	4,679	-42.3%	935
Total Farm Tractors	9,275	10,282	-9.8%	188,588	190,361	-0.9%	110,313
Self-Prop Combines	204	284	-28.5%	4,692	7,222	-35.0%	1,078

Data courtesy: Association of Equipment Manufacturers Statistics

AEM Ag flash sales trends and analysis

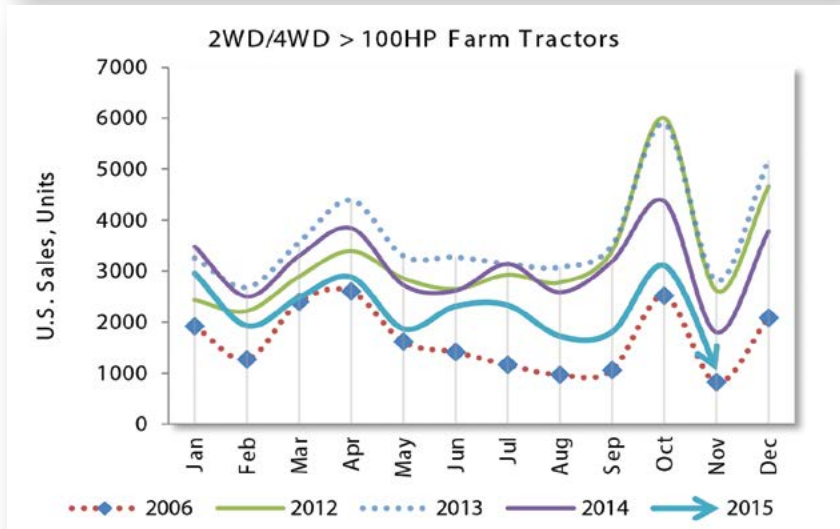
For more analysis on the Ag Tractor and Combine report, please tune in to AEM's monthly video at aem.org/agreports



Small and mid-size trends continue

There is still positive growth in the small tractor sales in the <40HP segment. They are up again this month 1.7 percent and we have passed 100,000 tractors sold in this segment for the year. We would have to go back to 2007 to see this level of tractors sold in this category.

We did see a drop in the 40 < 100HP category for the month at -10.2 percent, so we are just slightly negative for the year, selling 53,712 units.



Large Farm Tractors sales continue to suffer

For the large production tractors and combines we have seen a perfect storm for sales decreases this year. This storm was fueled by a low farm income and uncertainty surrounding the Renewable Fuels Standard and Section 179.

Again this month the most dramatic drop is found in sales in the 2WD 100HP+ category dropping 40.6 percent for the month when compared to last year. We would need to go back to 2009 to see this level of tractors sold in this category. 4WD tractors are down 43.9 percent for the month. ■

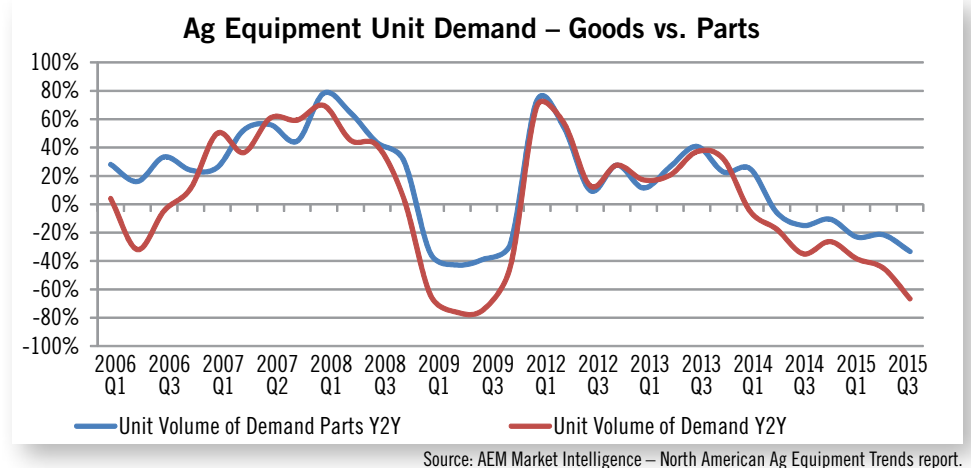
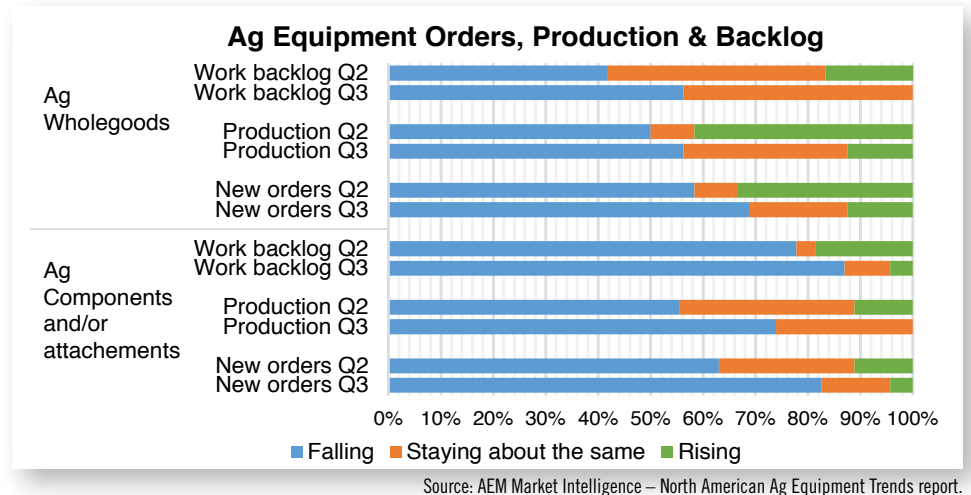
Inventories, demand and planning

Demand and planning

As expected, the initial results of our Demand and Planning survey indicated that the net rising index for demand for both goods and parts year over year continued to trend downward to -66 and -33 respectively. This is the 7th consecutive quarter that the index for goods has been below zero, indicating more respondents believe that demand is declining vs increasing. As we progressed throughout 2015, that consensus became steadily stronger. A similar trend occurred for the net rising index of parts.

When asked about the market, some of our respondents commented: “Large ag is down, but small ag is up and expected to continue in 2016”; “Very soft, declining worldwide!”; and “Dealer used inventories are high”. Some of these comments confirm the data and commentary from AEM’s monthly Ag Tractor and Combine reports. (See below for more information on dealer inventories.)

To further dissect the trends within wholegoods and components/attachments, the quarterly survey included questions regarding work backlog, production and new orders. Overall, these numbers look fairly negative, with most respondents indicating falling orders, production and backlog year over year. When compared with the results



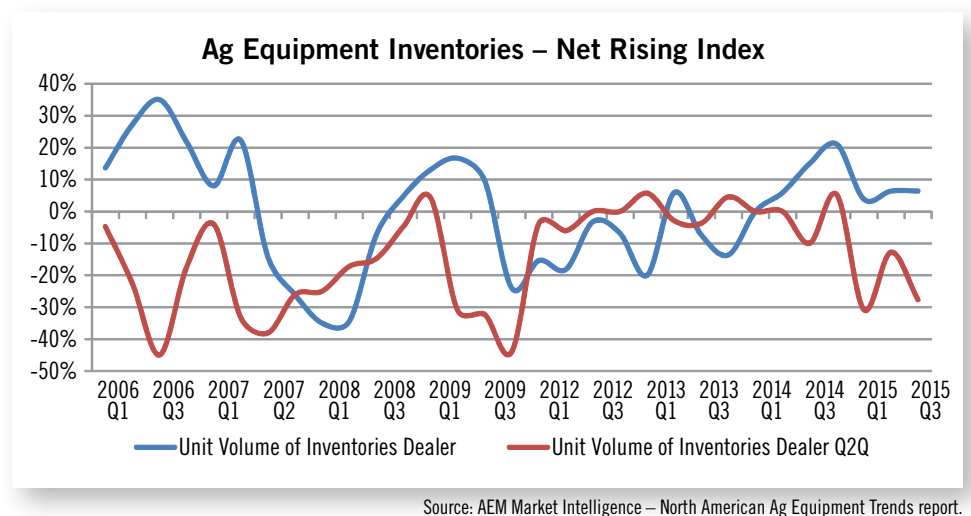
from last quarter, the situation does not seem to have improved. These results

are also in line with the H2 2015 Agritech Business Barometer global results.

Inventory levels

As AEM continues to monitor the current ag market, an important indicator of how the market is progressing is the inventories at the dealer level. Compared to the previous quarter, more survey respondents are indicating that inventory levels at the dealerships are decreasing. However, 59.6 percent of respondents did indicate the dealer inventories were remaining stable.

Even though we have seen decreases for the past couple of quarters, 23.4 percent of respondents still felt that dealer inventories were too high, while 59.6 percent felt they were just right. ■



Global commodities data

Commodity	Unit	Current Price	YTD (% Chg)	1 Year (% Chg)	2014 (avg)	YTD (% Chg)	2016f (avg)	2017f (avg)
Cocoa (London)	GBP/tonne	2,252	13.7	15.5	1,923	2,084	2,000	1,950
Coffee	USc/lb	117	-29.8	-35.9	178	133	130	135
Corn	USc/bushel	366	-7.9	-0.5	415	377	425	435
Cotton	USc/lb	62	3.2	3.4	76.3	63.3	72	73
Feeder Cattle	USc/lb	165	-25	-30.2	205	206.4	na	na
Lean Hogs	USc/lb	60	-26.4	0	106	88.8	na	na
Live Cattle	USc/lb	131	-20.7	-22.1	152	149.2	na	na
Class III Milk (Third-Month)	USD/cwt	15	-4.9	-11.6	20	15.9	16.2	17.5
Palm Oil (Third-Month)	MYR/tonne	2,332	2.9	8.9	2,936	2220	2280	2350
Rough Rice	USD/cwt	12	1.9	-3.9	13.9	11.1	12.5	13
Soybean	USc/bushel	891	-12.6	-10.5	1,242	951	975	1050
Sugar #11	USc/lb	15	6.3	1.2	16.3	12.96	14.5	15.5
Wheat	USc/bushel	459	-22.2	-24.2	587	510	530	540

Business Monitor International Commentary:

We maintain our view for commodities prices to bottom in 2015 2016 and for agricultural commodities to outperform the complex over a multi-quarter horizon. After remaining weak over H115, agricultural prices have started to turn and have been the best performing segment among the commodities complex, in line with our key views outlined at the end of 2014.

Grains: Grain prices will continue to trade within a range (320-360 for the S&P GSCI grains index) in the absence of major events. Looking further ahead, we expect grain prices to rally modestly in the coming months due to generally fewer plantings and below-trend yield growth, especially in the U.S. Market sentiment remains overly bearish, as speculative positions show (see

chart). Extreme bearish positioning could accelerate a move higher once sentiment turns on news that the market is tightening.

The strong 2000-2015 growth in corn consumption and the subsequent slowdown we forecast are attributable to developments in two countries, the U.S. and China, which together will account for about 53% of global corn consumption in 2015. Growing Chinese corn consumption due to booming livestock production will be offset by a slowdown in livestock and ethanol production in the U.S. This underpins our forecast for stalling in global corn consumption growth.

Softs: Like grains, we forecast softs prices to generally average higher in 2016, with

the exception of cocoa and coffee. In the case of sugar and palm oil, El Niño has dented production prospects in Asia and Brazil, and prices will remain supported in 2016.

From AEM's Global Monitor

The data on this page was compiled from data provided by Business Monitor International. AEM has consumption, production and price data (historical and forecasted) for various commodities and countries worldwide. This information and additional analysis is for sale to members on a report by report basis. For more information, please email Benjamin Duyck at bduyck@aem.org. ■

Meet the 2016 Ag sector board

The 2016 Ag Sector Board was announced at the November 2016 Annual Business meeting held during the AEM Annual Conference in Key Biscayne, Florida. Some key 2016 ag sector priorities include:

- Protection of the Renewable Fuels Standard
- Growth of the REACH and Conflict Minerals management programs
- Tier/Stage V engine harmonization
- Launch of the Latin American statistics program
- Successful development and implementation of AG CONNECT brand strategy
- Continued use and development of product leadership groups to address priority industry issues



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Kinzenbaw, MacDonald honored

Jon Kinzenbaw Kinze Manufacturing

Jon Kinzenbaw is a farmer who built one of the largest privately-held agricultural equipment manufacturing companies in North America from the ground up. Starting as a small welding shop in rural Iowa, Kinze Manufacturing now spans more than 1 million square feet and manufactures some of the most popular planters and grain carts currently in use.

Kinzenbaw says innovation isn't "rocket science" – you simply have to listen to your customers. The first product Kinzenbaw manufactured and sold was a 13-knife, 30-foot anhydrous ammonia application toolbar. His first patent was for a high-clearance, variable-width moldboard plow. At the urging of local farmers, Kinzenbaw pioneered the invention of a planter that

could be folded up for transport instead of being loaded onto a trailer. The resulting rear-fold planter sent the company on a growth trajectory that continues to this day.

Kinzenbaw has provided more than 200 college scholarships for future leaders in agriculture and manufacturing. Additionally, Kinzenbaw formed an educational co-op and internship program at Kinze that has already given more than 150 college students an opportunity to get hands-on experience with state-of-the-art technology and manufacturing processes.

Joe MacDonald MacDon Industries Ltd.

A quiet, yet forceful leader with a brilliant mind for sales and marketing, Joe MacDonald created a company that could not only compete with the largest OEMs,



Gary MacDonald, accepting on behalf of his father, Joe MacDonald and Brian McKown, accepting on behalf of Jon Kinzenbaw.

but simultaneously be a supplier to them. MacDonald started his lifelong career in farm equipment at the Cockshutt Plow Company. When White Farm Equipment Canada, purchased Cockshutt, MacDonald was made vice president of marketing and later,

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Inspire ownership, engagement, creativity and accountability



Greg Petras,
President,
Kuhn NA

AEM staff recently returned from the Agritechnica show in Hanover, Germany where the Kuhn Group was awarded a silver medal for its SW 4014 square bale wrapper. Established in 1828, the French company is one of the oldest in the industry and is the largest worldwide implement manufacturer, distributing more than 65,000 implements each year. We spoke with **Kuhn NA President Greg Petras** to learn more about the company's North American operations and its leadership here in the U.S.

Greg started out as a welder in a construction equipment factory in Colorado. He attended night school to earn a degree in business administration and was promoted up through management over 18 years, with the last three spent in California. Wanting to get back to Colorado, Greg took a job with Knight Manufacturing in Greeley, Colorado in 2002. In addition to making manure spreaders and livestock feed mixers, the division served as a retail store and distribution center. Having ongoing face time with farmers proved to be excellent training for Petras, providing him direct customer insights into the needs of the farmer and the agriculture industry. Knight was acquired by Kuhn seven months later. Five years after that, Greg accepted an offer as director of operations at the Broadhead, Wisconsin headquarters. From there he moved on to become president of

Kuhn Krause, and in 2014, president of Kuhn NA.

What is the best piece of career advice you have been given?

A friend of mine whom I was working with once said that at times you should seize opportunities to have people lead and execute their own ideas instead of forcing them to execute the ideas of others. That way they do a better job of it and it will inspire ownership, future engagement, creativity and accountability. Over the years I've made a concerted effort to let others go with their idea when appropriate, even if it's not exactly how I would do something. That has supported excellent results both in the short and long term.

Having worked in manufacturing for 30 years, you've certainly experienced cycles like the one we're currently going through in agriculture. Any thoughts/insights?

The long-term outlook for ag equipment is very positive. We just always need to be prepared for expansion and contraction cycles. Just as the upside was lengthy, it seems the downturn will be sustained as well. But it definitely will recover. Ag equipment inventory is reducing. Manufacturers have been making adjustments; there may have been overproduction. It's all part of the supply and demand cycle.

In spite of the downturn, Kuhn NA has had a good year in 2015. If you could name one thing that sets Kuhn apart, what would that be?

As well diversified and global as we are, we remain very focused on each individual market and retain product specialists to serve our customers for every product that we make. When we acquired Krause,

for example, we worked to preserve the company's sense of ownership and entrepreneurial style in tillage. With every acquisition, we've maintained the same distribution and improved support in proximity of where the product is sold. We are also very sensitive to the fact that if we were to centralize everything, we might not be optimizing our capability to be specialists in what we do and where we do it.

Kuhn has been an AEM member for 64 years and participates in our stats programs, technical groups and surveys. You serve on the Ag Sector Board and several committees including the Specialized Ag Equipment and the Ag Roadways Leadership Groups. What are the major benefits AEM offers Kuhn?

Krause was quite engaged with AEM before the acquisition, and that somewhat propelled us to increase our participation beyond the statistical reporting programs, which provide incredible value. We've seen that involvement in committees is an excellent way to stay educated on metrics in the equipment sector as well as stay informed on standards and regulations, which can influence our business environments in the future. Plus the camaraderie among people with the same interests is very healthy for ourselves and the industry.

When asked how he likes to unwind, Greg professed a love for skiing, hiking, climbing, biking and fishing developed in his years growing up among the Rocky Mountains in Colorado. But these days he goes where his wife and teenaged son and daughter take him. It seems that Greg's work philosophy also applies at home, where his family takes the lead on how their spare time is spent. ■

"The long-term outlook for ag equipment is very positive. We just always need to be prepared for expansion and contraction cycles."

Do you know your Millennial audience?

The baby boomer generation is the first generation of farmers ever to retire. Generation X never had an opportunity to farm. The millennial generation (aged 21-38) has overtaken the boomers in size and will soon be in charge of all farm decisions in the U.S.

These are some of the key points put forward by Curt Blades, group business development director, Meredith Corp at AEM's Annual Conference as he talked about the dynamics presented by the generational change of our farmers. A room full of ag equipment manufacturers nodded in agreement and focused in keenly

on what was top of mind and relevant information. Farming has essentially skipped a generation, and those supplying that new generation had better be aware.

The millennial generation is information hungry and they are digital native, says Curt. Not surprisingly, they are about 30 percent more likely to check out an ag website than the boomer generation. What may be more surprising is that they are also about 30 percent more likely to get information from ag TV shows and 20 percent more likely to seek it from ag trade shows and dealers/retailers than previous generations. Ag magazines are all

generations' preferred source of information, and millennials reference those publications 10 percent more than their predecessors.

Millennial farmers have high expectations



from their brands and can be very brand loyal, notes Blades. They are willing to pay a high price for quality product. And as this generation is very open and social in every respect, they seek their peers' opinions before buying a product. This also means they could serve as excellent advertisers if happy with a brand, broadcasting their good experience throughout social media.

In order to remain relevant, you have to know your audience. How do you rate with millennials? ■



Anita Sennett, AEM Director,
Ag Product Management

Some questions to ask yourself to keep your brand current

- Are you keeping up with the technology they're using?
- What is your mobile experience?
- Do you have millennial employees dealing with millennial customers?
- Are you practicing "social responsibility" at your business?
- Do you reward loyalty?
- Are you fast?
- What are you doing about chatter on the web?
- Are you willing to dialog with them on their terms when they want to talk?

Source: Meredith Agrimedia

Get Jazzed
March 3-5, 2016
NEW ORLEANS

As of 2016, AEM is officially a part of Commodity Classic. The show floor is almost twice the size of last year's, there is still some exhibit space available, and the Hotel Block is Now Open.

- Go to www.commodityclassic.com and go to "Exhibitors" for an exhibit space contract or "Hotels" to reserve your sleeping rooms
- Space is limited, and both exhibit space and hotel rooms will book fast!
- Housing reservations are made only through Experient as the official housing company through the Commodity Classic website
- Commodity Classic hotels are either located within walking distance or will have complimentary shuttle service to and from the convention center
- If you need meeting space at the show, please complete the Meeting Space Request Form posted on the exhibit services kit or email Peggy Findley at showdirector@commodityclassic.com

Welcome new AEM Ag members!

Atlantic Braids	Fastline Publications	Mitas Tires North America	Sikich
Automotive Robotics Inc.	Hamilton Caster & Mfg. Co.	Multi-Seal Corporation	Stanley Machining
Avant Tecno USA	Highway Products Inc	Myers-Seth Pump Inc	Supply Chain Services International
Big Tex Trailers	Hilti Inc	Nivel Parts & Mfg. Co.	Sy-Klone International Ltd
Currie Enterprises	JMC Steel Group	Northern Radiator	Webtech Wireless Inc
DEL Hydraulics Inc	Kendrion (Shelby) Inc.	Plymouth Tube Company	
Enginaire Inc	Malhotra Rubbers (Tyres) Ltd. India	Seed Hawk	



AEM's 2016 officers

AEM's 2016 Officers were elected at the November AEM Annual Meeting. From left to right: Vice Chair Michael A. Haberman, President, Gradall Industries, Inc.; Chair Leif J. Magnusson, President, CLAAS Global Sales Americas Inc.; Treasurer Goran Lindgren, President, Sales Region Americas, Volvo Construction Equipment; Secretary Dennis J. Slater, President, Association of Equipment Manufacturers.

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Kinzenbaw, MacDonald Honored

president. MacDonald left White in 1971 to become a consultant to Killbrey Industries Ltd., a company he subsequently purchased.

Under the name MacDon Industries Ltd., MacDonald narrowed the focus of Killbrey's product lines and turned the company into a world leader in harvesting technology. Working directly with producers, Joe led the development of innovative improvements to pull-type and self-propelled windrowers, enabling producers around the world more

productivity. In the mid 1980's, under Joe's leadership, MacDon developed the first dual application draper header for use on windrowers and most brands of combines, thereby allowing producers more flexibility and harvesting capacity. MacDonald's philosophy was that you succeed by finding a way where both you and the customer get ahead.

AEM welcomed these two new inductees into its Hall of Fame, helping to raise

public appreciation for the role equipment manufacturers play in improving our quality of life. Hall of Fame inductees are evaluated by an independent panel of industry experts on five criteria that are vital to the health of the off-road equipment manufacturing industry: 1) innovation, 2) industry contributions, 3) leadership, 4) corporate citizenship/social responsibility and 5) sustainability. For more information on the AEM Hall of Fame and all its inductees, visit www.aem.org/HallofFame. ■



American Society of Agricultural and Biological Engineers (ASABE)

ASABE announces the completion of

- **ANSI/ASAE S331.6, Implement Power Take-off Drive Shaft Specifications.** This standard establishes multiple categories of universal-joint drive shafts with two subsets of telescoping members each, one heavy duty and one regular duty.
- **ASAE S211.6, V-Belt And V-Ribbed Belt Drives for Agricultural Machines.** The standard was updated to reflect latest industry technology and harmonize the content with the Association for Rubber Product Manufacturers and ISO standards.
- National adoption of **ISO Technical Specification 28924:2007 Agricultural machinery — Guards for moving parts of power transmission — Guard opening without tool.** This identical adoption, designated ASABE/ISO TS 28924:2007 SEP2015, provides safety requirements for the design and construction of guards that can be opened without a tool and that shield the moving parts of power-transmission machines used in agriculture.

ASABE has revised its previous adoption of an international standard, **ISO 3776-3:2009, Tractors and machinery for agriculture — Seat belts — Part 3: Requirements for assemblies.** ASABE/ISO 3776-3:2009 specifies the requirements for pelvic restraint (seat) belt assemblies intended to be used by the operators of agricultural tractors and self-propelled machinery.

The international community has approved new ISO standards

- determining the center of gravity and stability of self-propelled, ride-on agricultural machine. The new document, **ISO 16231-2, Self-propelled agricultural machinery – Assessment of stability – Part 2: Determination of static stability and test procedures,** will help prevent rollover accidents. This standard assists in determining the safest design configurations for a variety of conditions and provides calculations to determine the center of gravity and best rollover safety limits.
- for the personal protection of individuals on or near high-voltage agricultural machinery. **ISO 16230-1, Agricultural machinery and tractors – Safety of higher voltage electrical and electronic components and systems – Part 1: General requirements,** specifies general requirements for the safety of operators, bystanders, and first responders working on or around machines with high onboard voltages.

ASABE announces the publication of **ASABE/ISO 12188-2:2012, Tractors and machinery for agriculture and forestry — Test procedures for positioning and guidance systems in agriculture — Part 2: Testing of satellite-based auto-guidance systems during straight and level travel.** The new standard is an identical adoption of ISO 12188-2:2012, which was based on the draft ASABE standard X605, Satellite-Based Auto-Guidance Systems Testing During Straight and Level Travel. Initially intended for publication as an ASABE standard, the draft was instead submitted to ISO as a new work item and served as the technical basis for the resulting international standard.

ASABE announces the formation of a new technical committee focused on unmanned aerial systems (UAS). The **UAS committee, designated MS-60,** will address the development and applications of unmanned aerial systems in agriculture, associated autonomous control systems, integrated multi-mode sensor payloads, data links and communication systems, and synthesis of UAS-derived data across the full scope of ASABE technical interests. Those with interest should contact Travis Tsunemori, ASABE staff engineer, at travist@asabe.org.

The American National Standards Institute (ANSI) has accredited ASABE to administer the committee responsible for coordinating the US position on international (ISO) standards related to fertilizers and soil conditioners. ASABE will serve as administrator for **the US Technical Advisory Group (US TAG) for ISO/TC 134, Fertilizers and Soil Conditioners,** a group that was initiated and previously led by The Fertilizer Institute. Those interested in serving on the committee may contact Scott Cedarquist (cedarq@asabe.org; 269/932-7031) for more information.



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Thursday, January 21, 2016
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AGRIEVOLUTION ISTANBUL SUMMIT ON AGRICULTURAL MACHINERY

Don't miss this exclusive opportunity to make connections in the Eurasian agriculture market. Join other ag equipment manufacturing executives and governmental agriculture contacts from around the world at special networking events. Gain insights from regional experts. Broaden your knowledge of the market at AgroEurasia Trade Fair (included in your Summit registration) and explore the area's potential.

- **Session 1:** Eurasian market opportunities
- **Session 2:** Global Trends in Agriculture and Technological Solutions
- **Session 3:** Success Stories- Global Market Strategies that worked for agriculture equipment companies
- Breakfast & Luncheon networking opportunities
- Summit
- Gala Dinner
- Special executive networking events
- Admission to AgroEurasia Trade Fair

AEM Chairman and President of CLAAS Global Sales Americas Inc. Leif Magnusson will be a panelist at the Agrievolution Summit, Fifth World Summit for Agriculture Machinery, January 21, 2016 in Istanbul, Turkey. The Summit is brought to you by the Agrievolution Alliance, a coalition of 13 international agriculture equipment manufacturing organizations for which AEM serves as Secretariat. For registration and more information, go to www.agrievolution.com or contact Anita Sennett at asennett@aem.org.