



# AIST President's Award Breakfast Keynote Address

**Roger K. Newport**  
Chief Executive Officer, AK Steel Corp.

I am honored and humbled to be recognized with this award from AIST. Clearly, I feel a very personal conviction about the vital role of steel to economic development, and the importance of driving innovation in our industry. So, on behalf of our 9,200 employees at AK Steel, I thank you, and I appreciate the opportunity to join you today.

I also want to congratulate Anand, and everyone at Tata Steel, on being named 2018 Steelmaker of the Year.

I would also like to recognize the entire AIST team that manages this impressive event — bringing together top steel industry scientists, researchers and production experts from around the world. Our AK Steel team is pleased to participate across all levels of our organization.

We are proud that Genayee Richards — our section manager in processing at our AK Steel Middletown facility — graciously agreed to represent us, and our industry, as the face of AIST's technology event this year (Fig.1).

As I begin my 34th year at AK Steel, I've never experienced a more exciting time to be part of the steel industry here in the United States, and around the world. I am proud that AK Steel and AIST play an important role in driving the future of process and product innovation for our industry.

A fundamental part of our work in our industry is to ensure that we work safely, every day.

AK Steel has consistently had an industry-leading safety record. Looking back at the full year of 2017, our safety performance was more than 4 times better than



Figure 1

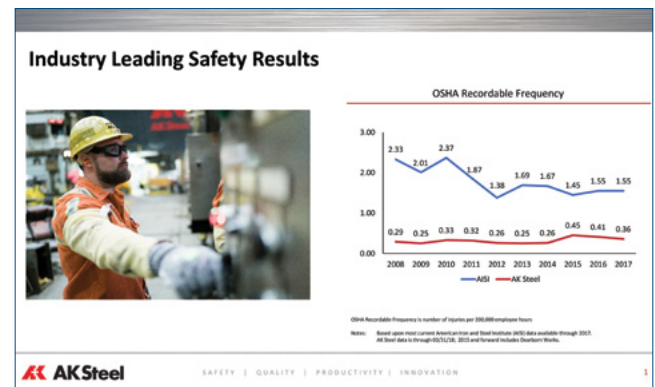


Figure 2





Figure 3

the industry average (Fig. 2). We continue to look at new ways to study and embrace safe work practices.

Safety is our No. 1 priority, and we know that ZERO workplace accidents is indeed possible.

I take pride in the role our company plays in driving innovation. Today, AK Steel remains the only steel producer in North America to make carbon, stainless and electrical steel products. We also have tubing operations to further add value to our flat-rolled steel products (Fig. 3).

This past year we acquired Precision Partners, a producer of tool and dies and hot- and cold-stamped components for the auto industry.

So AK Steel is now uniquely positioned to provide innovative steel solutions to serve the critical needs of our customers here in the U.S., and many other countries around the world.

This morning I want to talk about how our industry, and our company, are working each day to make a difference by creating brand new, innovative, alternative and sustainable steel solutions.

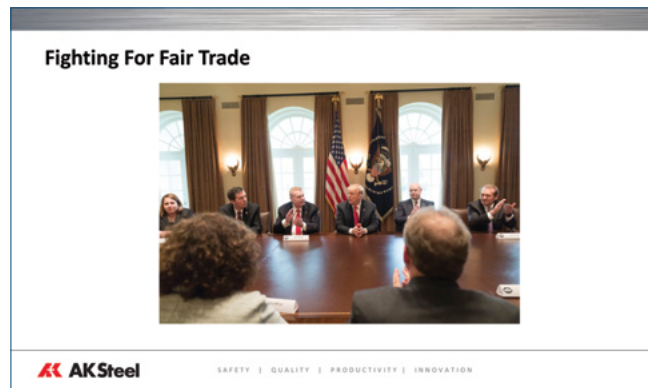


Figure 4

While the steel industry has been sort of behind the scenes for a number of years, it's making front-page news today for a number of great reasons.

Certainly, our industry has been visible for our work together, and with our government leaders, to take action to ensure a level playing field for steel.

During 2017, in the U.S. we continued our fight to ensure fair trade. Last spring I joined other steel industry leaders invited to meet President Trump as he initiated the Section 232 investigation (Fig. 4). And I have testified about the issues that the steel industry faces today related to the dumping of steel into the U.S.

This is not about protectionism. In fact, many countries around the world already offer their own subsidies of many kinds.

Trade actions are also important for our national security and the security of economic growth in our country. Consistent with the philosophy of this award today, our steel industry plays a vital role in economic development here in the U.S.

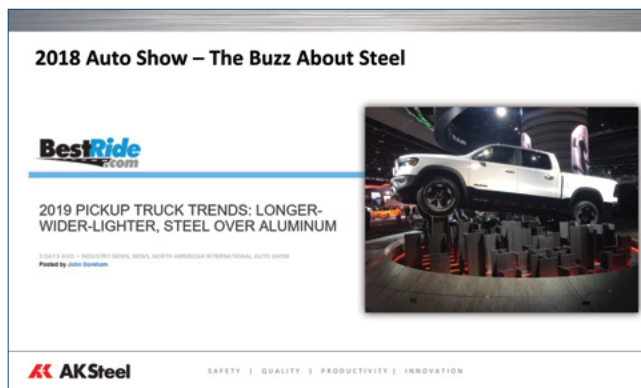


Figure 5

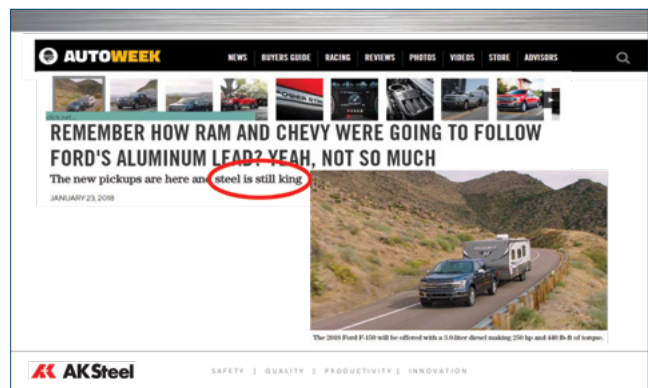


Figure 6

You may ask yourself . . . why does this matter to me? Well, this is about ensuring that we have a fair marketplace that will allow each of us to produce innovative new products and create improved steel processes.

I want to give a real-life example of why this is important. When you got up this morning, the lights worked, your company was making or processing steel, and our country was humming along. Imagine if something happened to the electrical grid that powers all of this.

AK Steel is the last remaining company in North America to make grain-oriented electrical steel. This highly advanced electrical steel is, quite literally, the core inside electrical transformers that power our country's electrical grid. These transformers are present throughout the entire grid, and allow electricity to travel from the generation station to end users, and to manufacturing facilities and to our families' homes throughout the country. It is the backbone of our country's economy.

Without domestic production of electrical steel and the entire transformer supply chain, our country would be 100% dependent on foreign producers to keep electricity flowing and our grid functioning. Think about that in times of terrorist action or natural disaster.

My point is simply this — we need to make sure we are positioned to provide the best R&D and the best products and processes, so our industry can thrive and our country can thrive.

And in the meantime, our company continues to develop new solutions to bring to our customers.

So what's all the excitement about steel? If you were at the Detroit Auto Show in January, you experienced an amazing event.

And steel — yes, steel — was a huge part of the buzz throughout the show (Fig. 5)!

Of course, we believe steel should always be the focal point — but we might be just a little biased.

Members of the media, car enthusiasts and the automakers themselves talked about the benefits of performance and value of advanced high-strength steels that many of you make possible every day. Even

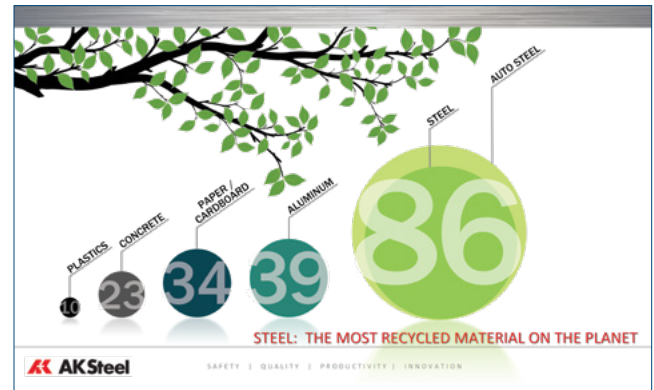


Figure 7

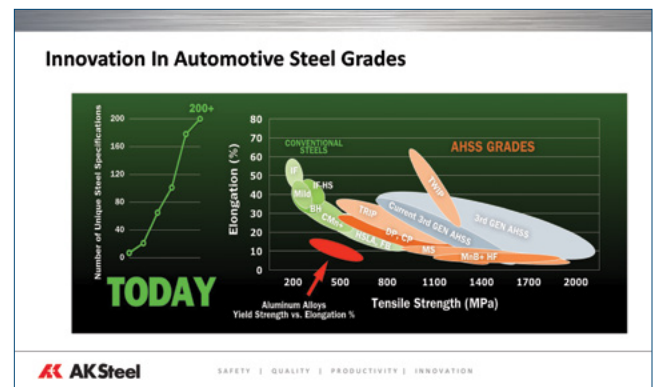


Figure 8

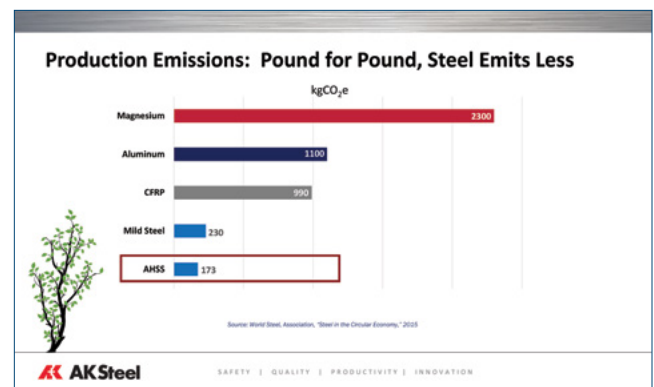


Figure 9



Figure 10

auto advertising and articles touted steel's benefits over other materials, like aluminum (Fig. 6).

Steel also has incredible benefits versus other materials from a sustainability perspective.

When most people think of recycling, they think about paper and plastics. But what many people don't realize is that steel is the most recycled material on the planet.

Here in North America, where we have higher recycling rates than the world average: only 10% of plastics, 23% of concrete building materials, and 34% of paper and cardboard is recycled. And only 39% of aluminum is recycled.

Compare that to a whopping 76% of steel that is recycled. That jumps to 86% if you just look at steel recycled in the auto industry. So clearly, much more steel is recycled than paper and plastics combined (Fig. 7).

Steel is 100% recyclable and can be recycled over and over again. It can be recycled directly into new steel products.

Also steel scrap from lower-value steel products can be converted into high-value steels. That is not typically possible for most materials, which are often

downgraded when they are recycled and that includes aluminum.

Automotive customers not only recognize the great features of the new innovative steels — but are also using steel's product features to help them sell their new vehicles. It's an endorsement for steel that we are proud of.

Steel offers the best solution for the environment, the best performance and most cost-effective solution for automakers, and ultimately the best value for consumers versus many alternative materials.

In fact, as many of you here know firsthand, there are more than 200 grades of steel for automotive engineers and designers to choose from. These steels provide the right grade for the right applications to improve performance, ensuring durability, and providing occupant protection (Fig. 8).

Another environmental benefit of steel comes from advanced high-strength steel products that offer value, performance and safety, and help car manufacturers lightweight to meet stringent fuel economy standards.

*Randy Skagen (left), 2017–2018 AIST president, presented the Hogan Lecture Award to Roger Newport (right).*





Advanced high-strength steel remains one of the fastest-growing materials in automotive applications, as noted by a 2015 report by Ducker Worldwide.

Over a three-year period, the amount of advanced high-strength steel used each year in automotive applications has been 10% higher than forecasted.

As the industry looks to the future, the implementation of the third generation of these materials, which provides high strength along with increased elongation, can help the industry continue to deliver a high-value, lightweight material for all future vehicles. That includes electric and autonomous vehicles.

And yet another benefit of steel, particularly these advanced steels, is that it produces the lowest greenhouse gas emissions of any competing material used in the automotive industry, from production to end-of-life recycling.

As a member of the Steel Market Development Institute, we are pleased to be part of a study that clearly illustrates that lightweighting with steel produces lower greenhouse gas emissions than lightweighting with aluminum, when considering the entire production phase of the material.

Pound for pound, production of primary aluminum in North America emits 4 to 5 times more greenhouse gases and requires 7 times more energy to produce than steel (Fig. 9).

So as each of you work on developing ways to enhance the steelmaking process, your actions are helping the sustainability of our environment. That is something all of us should be proud of and brag about.

Turning now for a moment to our own backyard, at AK Steel, it's been a very exciting year.

Part of this excitement is driven by the hard work of many of our employees attending this event to figure out how to make new, groundbreaking products.

We invested in research and innovation by creating our new state-of-the-art Research and Innovation facility (Fig. 10). We are also investing in our people — our most important asset — and have significantly increased the size of our team.

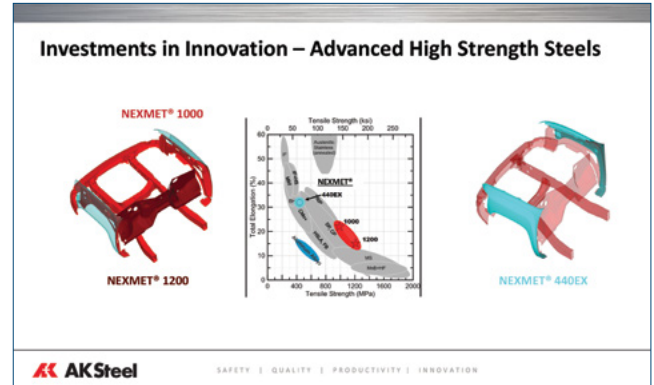


Figure 11



Figure 12



Figure 13



Figure 14

We continue to make great strides in our leadership position by providing the next generation of steel solutions that deliver the best value to our customers.

In the auto industry alone, for example:

- Just a few years ago, we introduced ULTRALUME® press-hardened steel — an aluminized coated hot-stamped steel that many customers continue to incorporate into their vehicles.
- In 2016, we launched our NEXMET® family of next-generation high-strength steels — the first product launch was NEXMET® 440EX. This new exposed surface quality product combines strength at thinner gauges to facilitate lightweight designs. This results in enhanced performance where surface appearance and dent resistance are critical (Fig. 11).
- In 2017, we launched two more next-generation products: NEXMET® 1000 and 1200 advanced high-strength steels — strong, yet very formable products.
- AK Steel is also differentiated by our stainless and electrical steel solutions. Our electrical steel products fit well with future needs as the vehicle fleet continues to expand into battery and hybrid electric vehicles. And our newer stainless products include alloys that allow exhaust systems to run hotter and more efficiently. Some of our stainless steels are also used for lightweighting in vehicles.

- And as I mentioned, during the year we welcomed more than 1,000 employees to our AK Steel family, with the acquisition of Precision Partners, a leading tool and die company and provider of hot- and cold-stamped steel components (Fig. 12).

By leveraging their tooling, die making and stamping capabilities, we are now able to transform our new steel grades into highly engineered components, accelerating customer adoption.

AK Steel is also making progress in our development of more efficient electrical steels for hybrid and battery electric vehicles.

Our highest grade of non-oriented electrical steel — DI-MAX® HF-10X for use in hybrid and battery electric vehicles — is continuing to gain traction in the industry. We are progressing well with customer testing and qualification of these new materials.

In 2017, we completed the first year of a three-year collaboration with the Department of Energy to develop the next generation of non-oriented electrical steels for use in electric motors (Fig. 13).

The US\$1.8 million award is targeting research to improve the efficiency of electrical motors by at least 30%.

It's exciting that members of our Research and Innovation team will collaborate with experts from the Regal Beloit Corp. and Oak Ridge National Laboratory on this important work.

*The AIST Steelmaker of the Year Award was conferred at the President's Award Breakfast on 8 May 2018 at the Pennsylvania Convention Center in Philadelphia, Pa., USA, with 1,200 in attendance.*





We also continue to innovate with our electrical steels used in power transformers to transmit energy across our electrical grid. As we improve the transformer efficiency, our country is able to reduce the amount of power generation required to serve our homes and businesses, which is good for the environment.

All of us in this room work hard each and every day to make better steel products. But the ultimate recognition is how our customers view our progress.

We are pleased that our customers see the value of the innovation we bring to them, and ultimately the value we bring to their customers.

- We proudly accepted Fiat Chrysler Automobiles' Raw Materials Supplier of the Year Award for 2017.
- Just a few weeks ago, AK Steel was named a Supplier of the Year by General Motors for performance, quality and innovation. We were the only North American steelmaker recognized with that honor.

We continue to drive innovation and sustainability not only in the products we make, but in the way we make our steel products.

We will soon be sharing an expanded version of our sustainability report that tells more about our work. But I thought I would share two recent and very different examples.

At our Mansfield operation, we recently installed electromagnetic stirring technology to enhance the ferritic stainless steels we produce. With the installation of this new system, combined with other upgraded processes, we have enhanced both our

production and production costs for our stainless steels.

Over time, we envision continuing to shorten production times on certain products.

That naturally could have its own sustainability benefits in terms of reducing the amount of energy needed to produce each ton of steel.

And in a separate project, we have been utilizing one of our industry's top data connection systems in our operations. This applies the latest generation of computing power and storage capabilities to unlock relationships and correlations that help us identify new opportunities to enhance our margins.

We have a vast network of sites and data systems across our sites. This new data connection platform is designed to help us better collect, mine and internally share that data, leading to further continuous improvement in our processes, product quality and value on a real-time basis.

As we look to the future, with our investments in research and innovation, and focusing on people, products and processes, we have a number of very ambitious new products in our pipeline.

We are excited about the opportunities for AK Steel, and the many new options our steel industry can provide, to deliver innovative steel solutions that meet and exceed our customers' needs for years to come.

Thank you. ♦

**AK Steel**

