Novelis Puts CASH on the Line in Oswego Expansion

Interview with Kevin Shutt, Novelis Oswego

By Joseph C. Benedyk, Editor

Kevin Shutt, plant manager of Novelis Oswego.

As one of the world's premier producers of rolled aluminum, Novelis prides itself as being the global leader in aluminum recycling and continues to develop sustainable solutions for the most technologically demanding applications, including automobiles, beverage cans, architecture, and consumer electronics. On May 23rd this year, Novelis celebrated the commissioning of its third automotive finishing line at its mill in Oswego, NY. This comes on the heels of the two prior finishing lines at Oswego that Novelis inaugurated on October 24th, 2013. The investment in these three continuous annealing solution heat treating (CASH) lines parallels the growth of automotive aluminum sheet in North America to achieve lightweighting and increase fuel economy to meet stringent CAFE standards, which mandate 54.5 mpg for new cars and trucks by 2025.

Kevin Shutt was named plant manager of the Oswego facility in April 2016, after nearly 30 years of demonstrated aluminum industry success. Most recently, Shutt served as hot mill manufacturing unit manager in Oswego. He also served as technical services manager of Novelis North America can value stream based in Atlanta, GA. Prior to this role, Kevin held numerous leadership positions in technical, continuous improvement, and reliability and engineering for more than 20 years with Logan Aluminum. In this interview, Shutt describes the Oswego expansion and how the aluminum sheet is used by the automotive industry in North America.

Can you briefly describe the operation of the finishing lines at Oswego and the function of each station along the CASH lines? What alloys are processed?

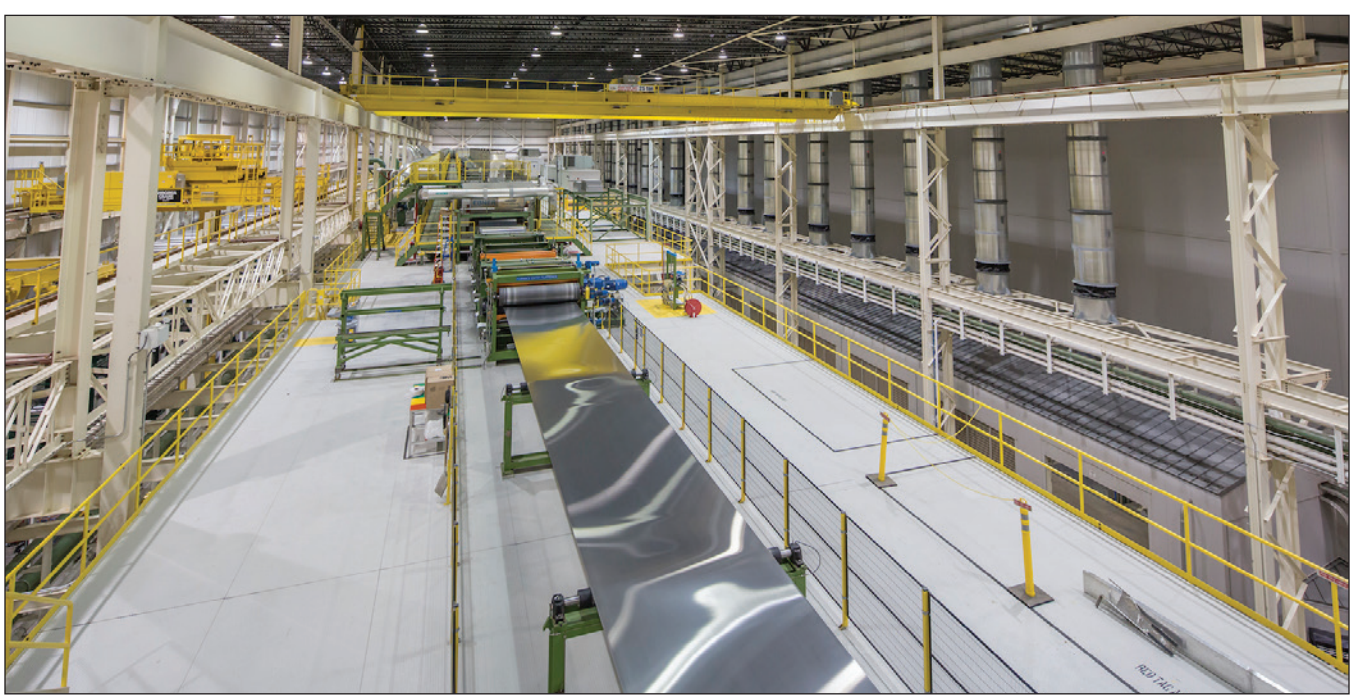
In the automotive finishing lines at Oswego, aluminum sheet is first heat-treated to meet very specific strength and forming requirements that would otherwise not be possible. Second, a surface treatment is applied to enhance the adhesive bonding strength and ensure strong joining between components. Finally, the coil is lubricated to help facilitate what is often intricate stamping. Automotive sheet made using the x615 aluminum alloy is used to produce the Ford F-150 and F-Series Super Duty trucks.

With the third finishing line in Oswego, what is the annual production potential for automotive aluminum sheet in North America for Novelis? What benefits does the Oswego location bring?

Our automotive lines in Oswego combined with our existing auto finishing line in Kingston, Ontario have increased our automotive capacity in North America by five times. As automakers continue to choose aluminum as their metal of choice, we will continue to invest in our plants to meet their demand. Novelis plans to allocate approximately 80% of our Oswego facility's capacity to the automotive market.

What technical features were designed into this third line compared with the previous two? Because of the experience with the first two CASH lines, was start up easier with the third one?

This third automotive line includes a second even larger, easy to navigate building and a focused attention to visual management. These factors have contributed



Overall view of the CASH 3 finishing line for automotive aluminum sheet in the new building at Novelis' facility in Oswego.

Close-up view of the aluminum sheet exiting Bridle 2 on the new CASH line at the Oswego facility.

to a faster ramp-up and more efficient production. Our experiences building the first two CASH lines definitely proved valuable as we designed and constructed the third line. CASH 3 represents an investment of $120 million.

As a global leader in aluminum recycling, what percentage of the automotive aluminum sheet produced at Oswego is recycled? Will this percentage grow in the future?

From our existing asset footprint in 2011, Novelis has added new recycling facilities on four major continents, doubling its recycling capacity. In Oswego, Novelis established the world's first closed-loop automotive recycling solution to support top customers. This included a $48 million investment in the automotive scrap aluminum recycling center that incorporates an 81,000 sq ft building capable of processing, sorting, and storing automotive scrap aluminum.

Today, auto stamping for the Ford F-150 produces 30-40% of aluminum sheet left over as scrap. This material is then returned to Novelis in the same trucks that deliver automotive sheet to Ford stamping facilities. The automotive scrap is promptly recycled and returned to the supply stream.

Approximately 30% of the automotive sheet produced at Oswego is made of recycled content. Maintaining a high level of recycled metal inputs across our product portfolio is a competitive differentiator and a key component of our strategy. Sustainability is a core part of how we operate and we will continue to recycle materials in order to keep waste out of landfills, save resources, and reduce emissions because these initiatives make good business sense.

It is common knowledge that Oswego is the key supplier for the Ford F-150, so can you mention the other automotive car and truck models which will be using the Oswego automotive sheet?

This third automotive line has been fully contracted to support production of Ford's Super Duty pick-up truck series, but we continue to partner with many of the world's leading automakers to make next generation vehicles.

Globally, Novelis aluminum can be found in more than 180 different vehicle models, including many of the world's premier brands, such as Ford, GM, FCA, Jaguar Land Rover, Audi, and BMW. In North America, we supply customers that continue to announce new, more aluminum intensive vehicles, such as GM's CT6. Together with its partners, Novelis is developing innovative aluminum alloy solutions for high volume production while improving strength, safety, and performance capability.

With safety standards now not only requiring good crash performance, but also pedestrian collision safety, how does aluminum sheet compare on both counts? Are the Novelis alloys different for different panel locations?

Aluminum is a highly durable material. It creates long-lasting, high-performance vehicles with best-in-class safety features. Lightweight aluminum body styles support faster acceleration, shorter brake time, better handling, and increased energy absorption in the event of a crash. It provides strength and controlled energy absorption for superior support, dent resistance, and passenger and pedestrian protection. Aluminum-bodied vehicles help to maintain—or even increase—the size and energy absorption capacity of a vehicle's critical front- and back-end crumple zones for added safety, without increasing overall weight.

A significant proof point is Ford winning a recent five-star award from NHTSA for its all new, 2016 F-150. The aluminum F-150 scored five stars in all of the dynamic tests, including front and side crashes for driver and passenger—even with the organization's more stringent round of testing.

Today, aluminum and multi-material vehicles may be constructed using sheet featuring a number of different alloys, depending on the properties required in particular parts. For example, high-strength Novelis Advanz


Storage racks containing aluminum sheet produced on the CASH 3 line slated for production of Ford's Super Duty pick-up trucks.

7000 series alloys will be used to manufacture aluminum sheet for bumper systems, crash ring components, and door intrusion beams. Technology and alloy development continues to be underway as Novelis works with key customers and suppliers to develop the next generation of alloys that will increase strength and durability even further.

Can you elaborate on the fuel savings achieved by Ford's F-150 as a result of converting from steel to aluminum? No SUV powered by internal combustion with gasoline or diesel will get anywhere near 54.5 mpg, so explain how this helps meet the CAFE goal for 2025.

CAFE standards require carmakers to achieve a "fleet average" of 54.5 mpg by 2025. This fleet average does not refer to the efficiency of individual models. Each automaker is aiming for an individual target based on the footprint of the specific mix of vehicles it makes. As such, each automaker is following its own strategy and timing for how they move forward with aluminum lightweighting solutions. These are big decisions, and some OEMs may move more rapidly than others.

With increasing consumer, regulatory, and environmental pressures, automakers are reimagining the automobile, taking a more holistic approach with integrated innovative designs and advanced materials. We are currently ten years out from full enforcement of CAFE standards. On the current timetable, automakers are expected to take a more aggressive posture toward lightweighting that will drive further adoption of automotive aluminum. To meet increasing fuel economy standards, Novelis is collaborating closely with customers to continue to evolve best-in-class material technology in order to create the most fuel efficient car possible.

Although most of the aluminum sheet alloys used in automotive are based on 6xxx and 5xxx systems, what about higher strength 7xxx automotive sheet? Any Novelis developments in this area?

Novelis engineers and scientists in our R&D centers are relentlessly developing new alloys, innovative applications, and revolutionary designs that leverage the unique properties of rolled aluminum auto sheet that takes strength and durability to even higher levels.

The high-strength Novelis Advanz 7000 series alloys will build on aerospace technology to set a new standard in automotive aluminum alloy strength and even exceed many of the high-strength steels. They will be used to manufacture aluminum sheet for bumper systems, crash ring components, and door intrusion beams and have been tested to be two-to-three times stronger than any automotive aluminum used in high volumes today. The new alloy series will offer a significant weight reduction when compared to current high strength steels in the marketplace, enabling automakers to further reduce the weight of vehicles while ensuring high levels of passenger safety.

Even with the surge in automotive aluminum, isn't the can market at Novelis much larger right now? How do you see the future in terms of market share among automotive, can, architecture, and consumer markets at Novelis?

The beverage can is, and will remain, the core of our portfolio. However, we have also driven rapid growth in our global automotive business as we capture demand in this high growth segment. When our new automotive investments are fully utilized, the global automotive business is expected to reach around 25% of Novelis' total shipments.