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# Recycling robots help turn juice boxes into paper towels

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According to Recycle Across America, recycling is the number one act any community can do to improve the quality of our oceans as well as the environment in general and in turn, the economy.

However, once that plastic bottle, cardboard box or aluminum can is tossed into the appropriate recycling bin, is it really reprocessed into another product or does it wind up in a landfill?

Recycling as we know it today came out of the socially conscious decade of the '70s. Community activists opened recycling centers in neighborhoods all over the country. Vendors purchased the scrap and moved the trash back into the mainstream.

But historians tell us that as far back as colonial times, artisans worked scrap metals into everyday items. What was old became new again. Scrap metals were collected and reused as part of the defense effort during both world wars. During the 1950s and '60s people returned glass bottles to recoup their deposit. And anyone who lived through the Great Depression knew how to reuse anything he was lucky enough to possess — even squeezing another cup

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COURTESY PHOTO An Al-controlled AMP robotic arm prepares to grip cardboard as it passes by.

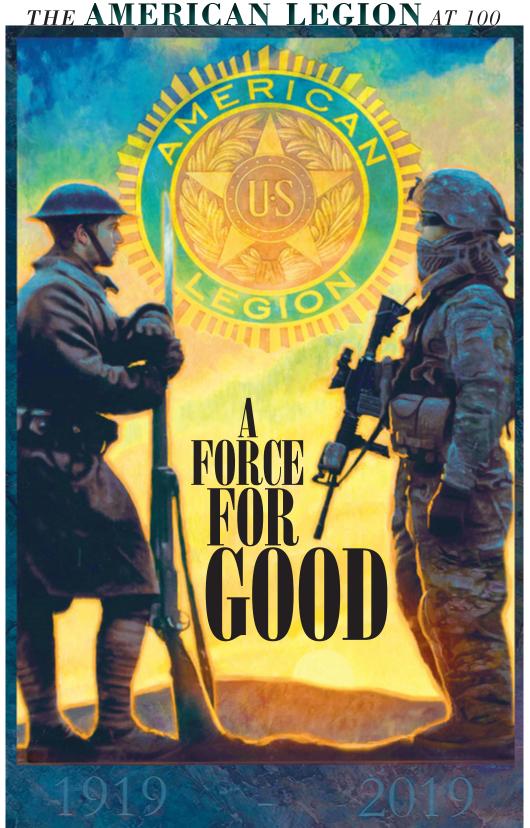


ILLUSTRATION BY MATT HALL, COMMISSIONED BY THE AMERICAN LEGION

"I'm proud of it. I'm really proud of what we've done."

> — **Kevin Boyd,** commander of American Legion Post 38

### BY ROGER WILLIAMS

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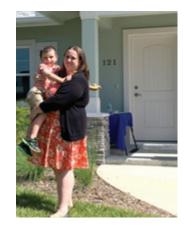
OU WALK OUT OF A 97-DEGREE PARKING LOT not long after Sunday noon, through a glass door beneath a sign blinking "OPEN" at the top in red neon — you're half blind in the cool, cavernous interior — and a guy sitting at the near corner of a three-sided bar only sparsely shared by patrons, both men and women, takes a look at you, notices your uncertainty, and accepts the immedi-

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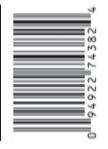


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## **ROBOTS**

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out of an old tea bag.

Who can forget that one word of advice given to young Ben Braddock (Dustin Hoffman) in "The Graduate?" Plastics! Plastic revolutionized the manufacturing industry and so the waste stream grew exponentially.

By the 1990s municipalities began recycling initiatives. Some purchased special vehicles so workers could hand sort recyclables curbside right from residents' bins. PTAs and other nonprofits collected and sold newspapers to vendors as fund-raisers. Eventually, single-use plastics not only made their way to the recycling bin but into our oceans and streams and often the stomachs of sea mammals, turtles and fish.

#### Back to the question

But, you ask, does that straw or milk container actually make it to a recycling plant?

In Sarasota, Charlotte and Collier counties collected recyclables are brought to Single Stream Recyclers, a privately held Sarasota facility that separates, bales and ships materials collected through residential and commercial recycling programs. The plant is the first in the state of Florida to use artificial intelligence and robotics to sort cardboard food and beverage cartons from other recyclables in order to be processed. (In Lee County, the county provides recycling through its solid waste department.)

John Hansen, a co-owner of the Sarasota plant, said the facility opened in March 2018. The robots, which apparently have secret names, are guided by AI. Manufactured by Denver-based AMP Robotics, the robots have spiderlike arms equipped with grippers to grab the cardboard as it passes on a conveyor belt. "We're excited to add this innovative technology to make sure we capture as many food and beverage cartons as possible to prevent them from ending up in landfills," Mr. Hansen said. He called the effort "another step toward making recycling more effective, while also reducing the amount that goes to our landfills, or worse, ends up as litter."

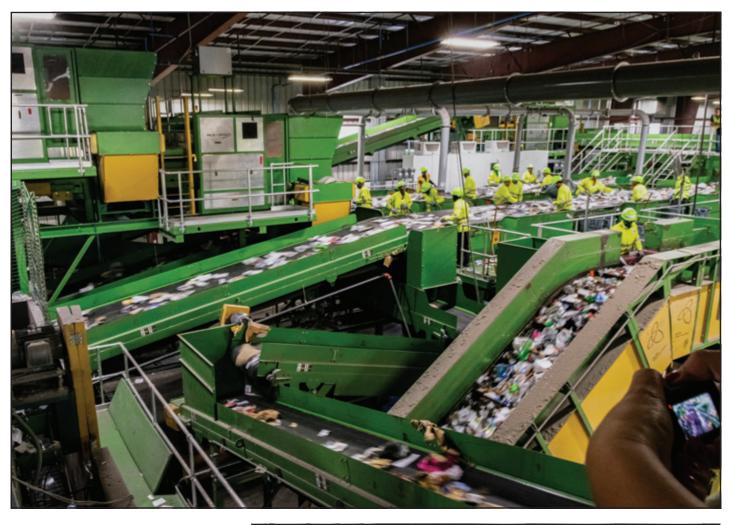
Single Stream has six robots, currently more than any other plant in the country.

Mr. Hansen explained that the robots "learn" as they go along, recognizing different colors, textures, shapes, sizes and patterns with a pick rate of up to 80 items per minute, about twice as many as a human can handle. Humans are quite evident throughout the plant, however, holding other technical positions as well as sorting plastics and aluminum by hand.

### Robots arrive

In 2017, the Carton Council, which facilitates cardboard recycling throughout North America, teamed up with AMP to bring robots to the industry and the first robot was piloted in Denver. The robots at Single Stream were made possible through a grant from the council.

"We are thrilled to partner with Sin-



PATRICIA HORWELL / FLORIDA WEEKLY Above: Workers hand sort recyclables at Single Stream Recyclers' Sarasota facility.

Right: Workers prepare the sorted carboard to be compressed into bales.

Bottom right: The bales are now ready to be picked up and repurposed by various vendors.

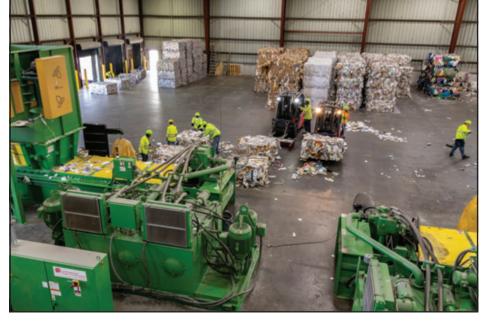
gle Stream Recyclers on bringing this cutting-edge technology to Florida," said Scott Byrne, director of government affairs for the Carton Council.

#### **New life**

Once the cardboard, plastic and aluminum are sorted, they are compressed into bales and picked up by vendors who will then repurpose the material.

The recycled cardboard is reborn as writing paper, paper towels, tissues, office paper and environmentally friendly building materials. Even as end markets for other recyclables have dwindled, the demand for cartons is high, Mr. Byrne said. Food and beverage cardboard recycling is happening in about 62 percent of American households.

"We hope other communities will take note and boost their efforts to capture as many food and beverage cartons as possible," Mr. Byrne said.







>> www.amprobotics.com



