

CAPSTONE HELPS LIFE LINE OPEN NEW DOOR

ABOUT LIFE LINE EMERGENCY VEHICLES. Founded in 1985, Life Line Emergency Vehicles is a Sumner, Iowa, producer of custom ambulance bodies with over 100 employees. In 2017 Folience, Inc., an employee stock ownership plan (ESOP) business purchased the ambulance firm, making the company 100% employee owned.

Life Line is proud to be one of the original twelve ambulance manufacturers in the United States to submit vehicles for testing and is relentlessly focused on producing ambulances and providing service that exceed customer expectations, empowering each Life Line partner to work with pride and professionalism.

THE CHALLENGE. To help Life Line grow, Folience reached out to CIRAS, part of the MEP National Network™, and Iowa State University for assistance. Specifically, the company needed assistance in designing an ambulance with a motorized sliding side door—a new feature that’s expected to make it safer and more convenient for emergency medical crews to operate in tight spaces or along the side of a highway.

“Any time an ambulance pulls over to the side of the road on a restrictive street, getting the side door open becomes an issue,” said Jacob Spiegel, Life Line’s head of research and development. For example, hinged doors that swing open near traffic have a tendency to block views of the road and may create a hazard for EMS workers. The sliding side door was “something that people had been talking about in the industry, so it was a good starting point,” Spiegel said.

“We didn’t want to be an ‘us-too,’” said Randy Smith, Life Line’s director of operations. “We wanted it to be unique and to challenge us.”

MEP CENTER'S ROLE. Eight mechanical engineering students visited Life Line in the fall of 2018 to begin roughing out the new door’s design as part of a CIRAS senior capstone project—a requirement that Iowa State engineering students must complete before graduation to demonstrate that they can apply what they’ve learned to real-world problems. A second group of capstone students then developed the design even further the following semester. Life Line engineers took over the project in May and began working it through the final tweaks of becoming a production-worthy design.

Spiegel said Life Line is confident that the industry’s future includes sliding side doors. It’s simply what the customers want.

“We are a custom-built manufacturer,” he said. “Everything we make is custom. We take great pride in the durability and the longevity that people get out of a Life Line ambulance. I think this will dovetail nicely with our existing product line. If we deliver something that is a benefit to the customer and it’s seen as value added, then it’ll sell itself.”

"The students were magnificent. We have always tried to be a leader in the industry. We've always tried to be out in the forefront.... I think this is going to be a very big deal because it gives us something that the rest of the industry doesn't have."

-Jacob Spiegel, Head of Research and Development

RESULTS



\$525,000 in new or retained sales



\$44,520 in new products



\$25,000 in new investment



\$20,000 in cost savings

CONTACT US



Iowa State University
1805 Collaboration Place,
Suite 2300
Ames, IA 50010



(515)294-3420



www.ciras.iastate.edu

