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CANADIAN AUTOWORLD

CAP opens the doors of its R&D lab to the media

BY LAWRENCE PAPOFF

HARTSVILLE, OHIO – Randy Peek, CEO of Canadian Auto Preservation Inc., the company that markets the Final Coat Electromagnetic module, recently invited some members of the media to tour the company's R&D lab in Ohio.

The lab, located in Hartsville, Ohio, a small farm town a 15 minutes drive south of Akron, is a modest two-storey building that looks like it might once have been a large garage.

The goal was to explain how the module works. There to do the explaining were the device's inventor, physicist Michael Lewis, staff electrochemist Jason Lafferty and consultant Digby Macdonald, a leading corrosion scientist and director of the Center for Electrochemical Science and Technology at Penn State University.

It's been a long time since the company won its battle with the consumer-protection arm of the federal Competition Bureau. The battle, fought in the years 2002 to 2004, was waged over the legitimacy of the module itself.

The question asked was a simple one: Does the device work? In other words, can a device that sends electronic currents over the length and breadth of a galvanized steel car body protect that steel from rust and slow the corrosion process if it has begun?

The bureau demanded proof in the form of independent laboratory tests. CAP supplied it.

"It was proven that it does indeed help to inhibit corrosion," the company says proudly. "The tests showed a 98 per cent to 99.7 per cent reduction in corrosion automotive sheet metal panels."

Or as the bureau conceded, "It was claimed that the Final Coat device could inhibit corrosion on the entire surface of a new or pre-owned vehicle. At the bureau's request, CAP performed additional tests on the device which were subsequently deemed by the bureau to be adequate and proper."

Physicist Michael Lewis says the module protects all of the vehicle's surfaces from corrosion, both inside and out.

The scientific trio explained that automobile bodies are made of galvanized steel, steel coated with zinc. It's the zinc that gives a car body its ability to resist rust.

Once the painted surface of the car suffers a stone chip or scratch that exposes the galvanized inner surface, the zinc coating "sacrifices" itself to slow down corrosion.

But moisture inevitably reacts with the zinc to form zinc oxide, a white barrier, a sign the zinc protection is breaking down and that rust will eventually form.

Here, they said, is where the module comes in. The surface currents from the module "break down the zinc oxide wall, enabling the ability of the zinc galvanizing to once again protect the steel surface and slow down the corrosion process.

"It's like putting on a new coat of zinc."

And if there still were any doubters, Macdonald and Lewis published in 2009 a paper for the Electrochemical Society discussing Lewis' invention and the theory behind it for peer review.

"That's the benchmark," Macdonald said. "If you publish the paper in a peer review journal then the scientific community has a chance to examine it. If it gets their blessing, it's presumed to be correct."

He said the paper proved a winner, confirming the proposition that an "electric current counters the corrosion. It negates the local process with electric current."

Peek emphasized that the module protects all the vehicle's surfaces from corrosion, both inside and out, even those caused by chips, dents and road salt.

This reporter wanted to know where CAP's R&D was heading.

"As car manufacturers and their electrical systems move forward and they reduce battery size, we are able to keep up with their advances," he said.

That means shrinking the module's size by 40 per cent to make it fit in ever smaller engine compartments and reducing the module's "parasitic draw" on the car battery as well.

He says that over the years, R&D staff has worked to cut the amount of power the module draws from the car battery from 12.6 milliamps in 1998 to one-third of one milliamp.

CAP now has a module that comes with its own battery power to protect boats, trailers and off-road vehicles whose batteries are dormant for long stretches.

Peek promises that to meet the concern of hybrid car manufacturers such as Toyota, his company is about to launch a module that won't need to draw any power from the host car's electrical system.

"From the car dealer's side, it's reassuring to know that the technology has been proven scientifically and can be easily explained. At Final Coast's R&D lab, we have pioneered innovations for hybrid vehicles, parasitic draw on the battery and the reduction in space in the engine compartment. And we are continuing to invest in future breakthroughs."

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