

The Dynamic Systems newsletter is published twice a year and is available to customers free of charge. The newsletter covers the following topics of interest: new product development, company announcements, project updates, product applications, and study results from product tests performed in-house and by other institutions.

dynamic systems

NEWSLETTER

Autumn/Winter 2002 Volume 10, Number 2

Holiday Closing

Dynamic Systems would like to say thank you to all of our customers. We appreciate your business!

We have been informing customers through notices in their invoices and when they place orders, that DSI will be closed for the Christmas holidays from December 23-January 1. The office will be open with limited staff to take orders and answer questions, but manufacturing will be closed for the duration. We apologize in advance for any inconvenience this may cause. Normal operating hours will begin again January 2, 2003.

Our employees have worked diligently throughout the year and especially in these last few weeks trying to get large orders out the door before the long, well-deserved, Christmas break. We'd like to say thanks to them too, and we hope everyone will be safe and enjoy this holiday season.

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*We appreciate
your business.
Thank you!*

Dynamic Systems, Inc.

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Prosthetics for Horses

Alternative Uses for FIPS

Equine Prosthetics, Inc. is a unique company that works to rehabilitate horses and dogs that have suffered traumatic limb injuries. They also specialize in corrective support for foals born with limb deformities. EPI is on the cutting edge in veterinary care. They welcome difficult medical challenges and provide innovative solutions to problems many others would deem irreparable. In many cases, they are able to give debilitated horses an extended active and healthy life.

Specializing in equine orthopedic devices, EPI works closely with veterinarians, using the latest techniques and the best materials to aid the healing process in the most effective way. Each device is custom-made and based on tested, successful designs currently used in human medicine. The purpose of the devices is to minimize rubs and sores while providing as much comfort and support as possible.

Roy Scudamore, certified prosthetist, Deborah Galt, licensed veterinary technician, and their team are dedicated to their clients. They teach owners about the special care involved when using orthopedic

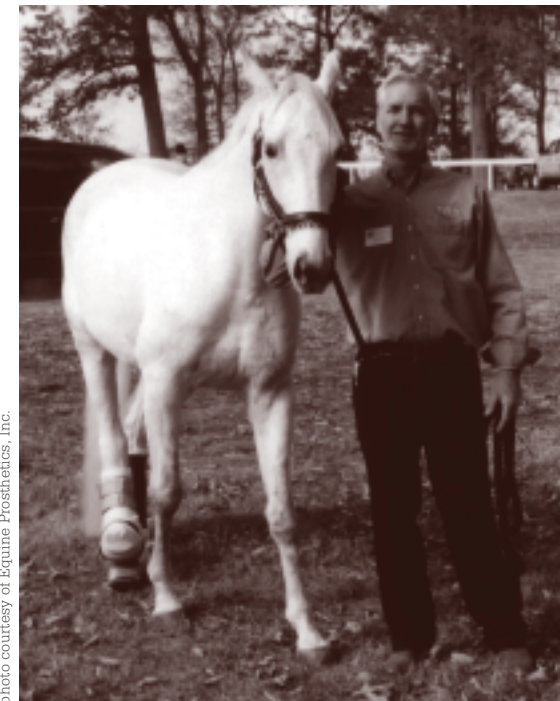


photo courtesy of Equine Prosthetics, Inc.

Roy Scudamore poses with Thor at the November 2001 Montpelier Races. Thor currently wears the springlite foot shown here on his right hind leg.

devices, and follow the progress of the animal's health every step of the way, making adjustments as necessary. They are committed to keeping up with the latest changes and advances in prosthetic and orthotic care and regularly attend seminars, symposia, and continuing education classes.

EPI has been using Pudgee material with full leg braces. They believe that the skin protection Pudgee provides is a key element allowing corrective bracing to become a reality for horseowners. Unfortunately, the young horses are prone to play and bite with anything new, and the Pudgee tears under that kind of force. For this application, DSI technicians have been experimenting with a mesh material incorporated into the Pudgee to prevent it from tearing.

EPI has also been using the Liquid SunMate Foam-In-Place for their signature patient, Thor. Thor is a large grey thoroughbred gelding and EPI's "poster child". Thor suffered a severe injury to his leg which went untreated for many months. Severed tendons, bone infection and fracture eventually led to his lower hind fetlock, pastern joint and hoof forming a useless protruding appendage which could no longer bear weight. Thor's miraculous path to recovery began when the Central Virginia Horse Protection Association rescued him from his abusive home and placed him in the capable hands of Ms. Galt. Several attempts to heal the leg

Continued inside.

Directory Assistance

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Product Questions?

If you have an idea for using SunMate products, but are unsure of how to proceed; or if you have begun a project, and have reached a problem area, give the DSI technical staff a call. Our staff will help you determine the best material for your use.

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Mini-Baja Racing

Winning with SunMate & FIPS

Back in the spring, the Midwest Mini-Baja Competition took place in Waukesha, Wisconsin. It was the third of three 2002 North American competitions sponsored by the Society of Automotive Engineers (SAE). The object of these competitions is to provide engineering students an opportunity to experience the real-world challenge of developing a new product for the consumer market. The students are given the task of designing and building a road vehicle that can withstand the severe punishment of rough terrain. Students must consider budget restrictions, manufacturability, serviceability, comfort and performance. The students are also expected to follow the rules of the contest and generate financial support for the project, in addition to managing their other educational priorities.

During the competition, teams from schools across the country vie for the championship in a series of static and dynamic events. The vehicles are safety inspected and judged on maneuverability, acceleration, braking, and other factors that are timed/measured and entered into a point system. The best performers in the preliminary events participate in a 3-hour endurance race which is the final and ultimate test of their vehicles' durability and design.

This year the five-man team from the University of Akron's Mechanical Engineering Department was the overall champion out of 108 teams that participated. Dynamic Systems, Inc. recently received a beautifully framed photograph and thank you from the team for co-sponsoring the project and for helping to "make the success of their program possible." DSI donated several FIPS units for the seating application of the team's custom-designed car. The Akron team decided to use the Liquid SunMate Foam-In-Place because of its ability to mold an individual's contour. The impact absorption properties of SunMate also make a big difference in this type of endurance racing.

SunMate products are becoming an integral part of the racing industry at many levels. This is the third SAE competition where SunMate products have been used by winning teams. In 1992, the team from Tennessee Technological University was the overall champion for the Midwest Mini-Baja Competition. They attributed improvements in their performance that year in part to FIPS. Each driver had his or her own molded seat, allowing drivers ranging in size from 4' 10" - 6' 1" to comfortably drive the same vehicle. The FIPS insert also eliminated the bruising drivers had incurred in past years during the two- to four-hour long races.

In 2001, the University of Alabama-Huntsville competed in the Formula SAE competition using FIPS. (See *Dynamic Systems Newsletter*, vol. 9, no.4.) Vehicles for these competitions are designed to vastly different criteria than the dune-buggy type Mini-Baja. The Formula cars are designed to be faster, more aerodynamic and lower to the ground. When the Huntsville team discovered that the foam seating it had chosen didn't meet the Formula SAE's flammability requirements, they had to make a last-minute change. FIPS not only met the requirements, it also provided a quick, easy solution for them. They were surprised by SunMate's excellent performance, especially with its ability to absorb the constant vibrations from the engine which they say at 13,500 rpm can actually cause physical pain. They also praised the custom-molded insert for its ability to hold the driver in place. In such lightweight vehicles, the shifting weight of the driver can drastically affect vehicle performance.

Dynamic Systems endeavors to encourage and support students involved in complex challenges like the SAE competitions. It is exciting to hear their reactions to the product; and, it is worthwhile to get feedback on the material's performance. DSI views its donations to these projects as an investment in the future. The students learn how to make products safer, more efficient and more comfortable through their competition experience. They carry this knowledge into their professional careers, designing real products for real consumers. Everyone benefits from their education – everyone wins.



Team members: Jeff DeWitt, Matt Lux, Bill Gross, Jared Utz and Zach Utz

Satisfied Customer

Motorcycle Seat Reconstruction

DSI received this lovely letter from Mr. Winsor French last summer. We thought we'd share it in hopes of inspiring other motorcycle enthusiasts who might want to take on a winter project refurbishing their own motorcycle seats. It'll be a good way to pass the time indoors – gearing up for next touring season. Then once the ice and snow melt away, you'll be ready to hop on your bike and burn off that cabin fever!



For instructions on how to proceed, visit our web site at www.sunmatecushions.com/motorcyc.htm, call Cathy Ramsey, DSI special projects coordinator at (828) 683-3523, or read on:

To all the people at Dynamic Systems,

I own a 1987 FLHS Harley-Davidson.

After putting a number of hours and miles in the saddle I found my original seat to be somewhat uncomfortable...my butt would get sore, I would occasionally get a cramp in my upper thigh and it was also uncomfortable in the groin area.

I had heard about "gel foam," "open-cell foam," and standard density foams, so I started doing some research. I spoke with some manufacturers of foams and motorcycle seats, and decided to use your product. If it's good enough for an F15, it's good enough for me, and I am extremely pleased!

After I reupholstered my seat with your foam, [it] was so comfortable, it amplified the deficiencies of the padding in the back rest. I am now redoing the back rest on the tour pack.

The installation and application of your foam was very easy and straight-forward:

- 1) Cut out the foam in my existing seat to the thickness of what I was going to add.*
- 2) Cut the new foam to the size needed.*
- 3) Spray the glue onto the old seat foam and the new foam.*
- 4) Carefully position the foam.*
- 5) Reattach old seat cover.*

It wasn't quite as simplistic as I make it sound, but you guys were very helpful and I chose to take on the challenge of doing the seat myself. You suggested that I use one peice of 1/2" thick Medium-Firm SunMate and one piece of 1/2" thick Pudgee. I can't say what it would have been like using just one or the other, but I can say it made a world of difference...my wife and I rode to the Outer Banks (1150 mi) over Memorial Day and we NEVER pulled over because we were uncomfortable. She was so comfortable when we got home she said, "So where do you want to go over the 4th of July?" Thanks for not only a great product, but also for all the support. (No pun intended!)

Winsor S. French

"Prosthetics for Horses," continued from front page.

eventually led her to try a prosthetic device. "Thor's leg was so badly mangled that surgery was impossible," she said. "Because Thor's stump is so unusual, I am unable to use a silicone sleeve. Foam-In-Place works well because it is specialized. It also offers a little more impact resilience."

Thor received the 2000 Hank Award from Rio Vista Products in the individual category for outstanding rescue work, and was Equifinity's 2001 Horse of the Year. He now wears the same device that athletes in the Para-Olympic Games wear. He leads the same life as most other horses, grazing, bucking and playing outside. He regularly travels to 4-H groups, the Adventure Camp for amputee children, benefits for the Christopher Reeve Paralysis Foundation, and the local Disability Awareness Day. He is a beautiful inspiration for children facing disabilities to see that anything is possible. EPI offers a truly unique and noble service for animals.

DSI products have been used in the medical industry for over 30 years. The potential for veterinary applications is exciting, especially when it would contribute to advances in treatment and give owners more options for improved care for their animals.

To learn more about EPI, visit their web site, www.equineprosthetics.com. (See also, www.riovistaproducts.com/fund and www.equifinity.com.)