

SAE MILWAUKEE

An SAE International Section

December 2013

www.milwaukeeesae.com

UPCOMING EVENTS

- HB Performance
 - February 6
- Clean Snowmobile Challenge
 - March 3 to 8
- Mercury Marine
 - March TBD
- Pierce Fire Truck
 - April TBD
- Trek Bicycles
 - May TBD
- 2nd Annual SAE Milwaukee Section Golf Outing
 - June 4
- Road America June Sprints
 - June 14
- SAE Milwaukee Section Cruise Night
 - TBD

For more details , Go to www.facebook.com/MilwaukeeSAE
and Like us!

HB Performance

February 6, 2014

HAYES™



Mequon, WI

REGISTRATION DEADLINE:

January 29

A little background about Hayes...

Our humble roots begin in 1946 as HH Products, a Milwaukee manufacturer of parts for outboard motors. That morphed into an agricultural and small-engine component parts supply company. Today, more than 6 decades later, we're a multi-national business boasting world-class operations in North America, Europe and Asia. Hayes is a recognized global braking, steering and suspension systems supplier with core competencies at integrating components and technologies into systems, providing superior braking and electro, hydraulic and mechanical controllability for products in the Power sports, Agriculture, Construction, Military and Bicycle markets. Over 15 million HB integrated braking systems are currently functioning throughout the world in various applications. But throughout the years, our path has taken some interesting twists and turns.

In 1968, Kelsey-Hayes purchased the business, moved it to Mequon, WI and focused on non-automotive industrial brake components. Soon, the company was supplying brakes for most of Caterpillar's wheel loaders as well as all Polaris snowmobiles.



In 1984, it was purchased by the Ohio based Brenlin Group who renamed the business Hayes Industrial Brakes. Through the late 80's and early 90's, the business experienced moderate growth and in the mid-90's, our engineers created a hydraulic disc brake system for the mountain bicycle market revolutionizing this industry segment.

The Brenlin Group recruited a new senior leadership team in 2000 to better address business opportunities and improve the overall enterprise performance by adopting and installing:

- World-class best business processes
- Expanded worldwide lean manufacturing practices through the application of the HB Operating System (HBOS)
- Expanded focus of the off-road power sports market segments including ATV's and utility vehicles
- Strengthened technological skills, equipment and overall capabilities of the company

Customer performance metrics for on time shipment, quality, cost management and flexibility all became industry leading and the standard expectation of performance by which many Tier I suppliers are judged.

A little background about Hayes continued....

In June, 2005, the senior leadership team led a management buyout (MBO) of the business with the support of the private equity group, Nautic Partners, of Providence, RI, and renamed the business HB Performance Systems.

The new ownership team quickly moved into an acquisition mode and purchased several businesses to strengthen the bicycle products group.

- Sun Metal Products of Wausau, IN, a company which made Sun Ringle' components, specifically rims and wheels for bicycles and wheelchairs, was purchased. We also acquired an on-going Chinese WOFE (wholly owned foreign enterprise) in the deal.
- Wheelsmith Fabrication, Inc., the only US based manufacturer and well recognized brand of high grade bicycle spokes, was purchased and moved to Milwaukee.
- Answer bicycle components (handlebars, saddles, stems cranks, pedals, shoes, gloves) and Manitou suspension (front fork and rear shock products).

These acquisitions along with key organic investments provided our business with a full portfolio of bicycle products and systems to service the needs to the more than 250 original equipment bicycle manufacturers and enthusiasts worldwide.

Since the management buy-out (MBO), the business has continued to perform well and we've successfully moved from a component manufacturer to become a system supplier now integrating electro, hydraulic and mechanical controls to improve the performance of customer vehicles.

A significant milestone was reached in 2010 with the successful launch of our proprietary Sequential Verification Assembly Process (S-VAP) and the delivery of fully bled ABS brake systems. S-VAP allows for the complete assembly of calipers, master cylinders, lines and ABS hardware, thus eliminating any in-facility evacuation and filling of brake components for original equipment customers.



A little background about Hayes continued....

In 2011 and 2012, HB successful growth and innovation continued as we:

- Opened a new European facility outside Munich, Germany
- Launched a new Radial Handlebar Master Cylinder for snowmobiles
- Introduced a new braking system for the Sport Motorcycle market
- Partnered with two leading Defense contractors and developed a new brake system for the upcoming selection of the next generation Humvee vehicle, the JLTV (Joint Light Tactical Vehicle)
- Launched a new S-VAP Hydraulic Clutch System for the Motorcycle market, all terrain vehicles and utility vehicle markets
- Introduced the off road Power sports industry to new technology for power steering
- Introduced the Power sports off road industry to TrailTrac®, our proprietary traction control and controlled braking system, for the snowmobile

Today, Hayes is much more than a brake component manufacturer. Our business has evolved from being not only a world-class manufacturer of components to a systems integrator and developer of new advanced vehicle control technologies. We operate as a



technology innovator and leader with a scalable global manufacturing footprint supplying over 300 of the world's top brands in power sports, bicycle, turf care, agriculture, construction and defense. We encompass an exciting team of more than 500 talented, hands-on, passionate and enthusiastic people driving industry-leading brands, whose growth and products are based on our founding values of innovation, cost-value, quality, performance, flexibility and a commitment to excellence.

Presenters...

Peter True - Manager Advanced Development

Randall Holland - Engineering Manager Handlebar Controls

Your presenters will be covering a company overview and related topics including sport bike and snowmobile product brake development, new product innovations, and advanced developments in controlled braking and electro-hydraulic power steering.

EVENT AGENDA

Registration: 4:30 pm to 5:00 pm

Lab Tour: 5:00 pm to 6:00 pm

Dinner and Presentation: 6:00 to 8:00 pm

Meal: Italian Buffet including sandwiches, salad, dessert, with beverage

REGISTRATION FEES

SAE Members	\$20.00
Retirees	\$15.00
Guests/Non-members	\$25.00
Students	\$10.00

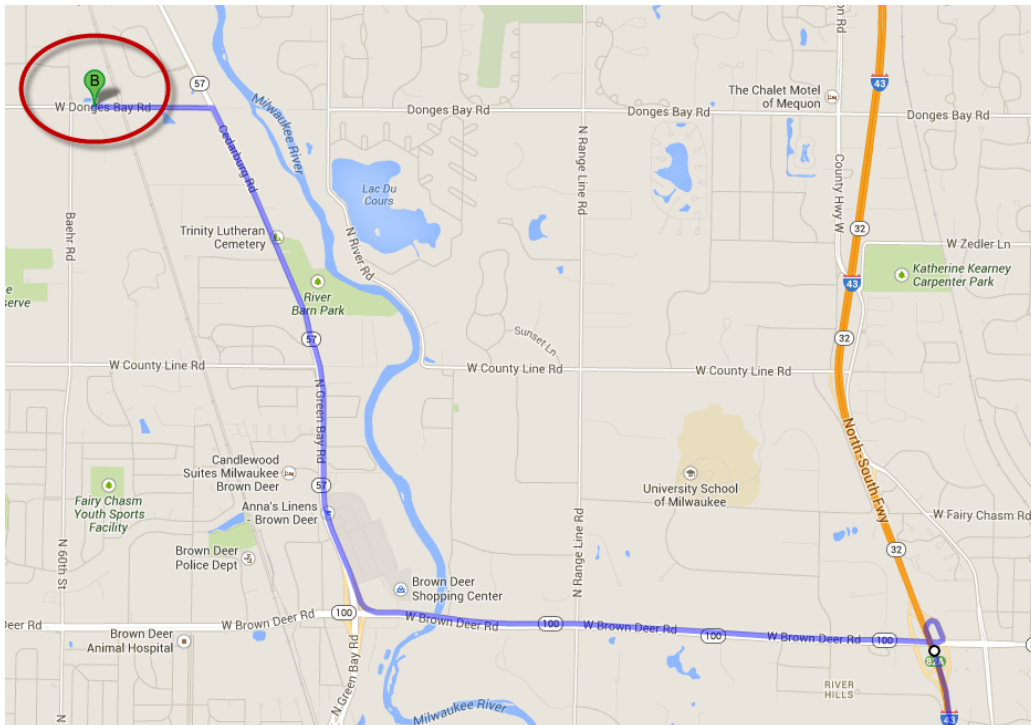
REGISTRATION

- **Registration Deadline: January 29**
- Maximum Attendance for this event is **100**
- Registration can be completed three ways:
 - Online with a charge card via <http://milwaukee.sae.org>
 - By Phone at 262-424-4958(Jim Ryan)
 - By Email ryan_james_w@cat.com (Jim Ryan)

Meeting Location: HB Performance - 5800 West Donges Bay Road - Mequon, WI 53092

Directions from Milwaukee:

- Take I43 North to Brown Deer Road and go West
- Follow Brown Deer Road West to Green Bay Road and turn right (North)
- Turn Left onto Donges Bay Road (West) to location on right



**2014 SAE Clean Snowmobile Challenge - March 3rd - 8th.
at MTU/ Keweenaw Research Center, Calumet, MI**

About Clean Snowmobile Challenge:

The SAE International Clean Snowmobile Challenge (CSC) is an engineering design competition for college and university student members that challenge engineering students to re-engineer an existing snowmobile to reduce emissions and noise. Their modified snowmobiles will compete in a variety of events including emissions, noise, fuel economy/endurance, acceleration, handling, static display, cold start and design.

The CSC Rules Committee makes changes to the competition each year to keep the competition fresh and to present new engineering challenges. CSC is primarily an "engine" competition however the underlying theme has remained consistent to engineer a clean and quiet trail sled. Current trail sleds are engineered to these standards, but it is possible to achieve more. Noise levels can be reduced and cleaner fuels can lead to lower emissions.

To see more info., photos and videos of last year's Challenge, go to <http://www.mtukrc.org/snowmobile.htm>

Preliminary Schedule:

Mon. - Team Registration, Technical Inspection

Tues. - Electric Sled Range Test, Endurance Run (100 miles)

Wed. - Design Presentations, Emissions Testing, Electric Sled Draw Bar Pull, Snowmobile Public Display and Networking with Industry

Thurs. - Noise Event, Subjective Handling Event, Emissions (cont'd.), Design Presentations, Milwaukee Section Event

Fri. - Emissions (cont.'d), open time to snowmobile or ski.

Sat. – Cold Start, Acceleration, Objective Handling, ZE Range and Load Test, Awards Ceremony



Please consider serving SAE, your Milwaukee Section, and the Challenge by being a **Design Paper Judge** (this does not require you to come to CSC), or judging presentations and/or sleds at the event. If interested, please email Jay Meldrum at jmeldrum@mtu.edu.

If interested in car-pooling to CSC, please contact Dale Wiza, dale@engineeringplacements.com, or call c 414-807-9663.

Many attendees come for just part of the event, so we'll attempt to coordinate with your schedule too. Dress warm, and consider joining us for a U.P. snowmobile ride, in some of the best snow and scenery!

We are very proud to be the hosting SAE Section for this great event!



2nd Annual SAE Milwaukee Scholarship Golf Benefit

Wednesday, June 4th 2014

Mee-Kwon Golf Course, Mequon

SAE Milwaukee section will be hosting its 2nd Annual SAE Milwaukee Scholarship Golf Benefit on Wednesday, June 4th 2014. The event will kick off at 11:30 AM with registration followed by a 12 PM lunch. Tee off will be at 1PM via a shotgun start. All holes will be played according to "best ball" rules. The day will wrap up with a 5:30 networking reception. The number of players is limited to 80, with priority being given to sponsors. This is a perfect event for team building. In addition, all proceeds will go to SAE sponsored scholarships.

Mee-Kwon Park is located on one of the highest elevations in Ozaukee County and is a magnificent 18 hole facility that continues to get rave reviews from its customers. Many golfers have said it is better than many private facilities they have belonged to or played at. The course offers a variety of challenges; hills with gentle knolls, level terrain, trees, water, dog legs, and over 40 sand traps, which will keep you thinking about your next shot. The 18-hole course features 6,486 yards of golf from the longest tees for a par of 70. The course rating is 70.6 and it has a slope rating of 122.

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EARLY BIRD DISCOUNT

Register May 9th to receive discount!

- Sponsored Foursome – \$500 (\$600 after May 9th)
- Non-sponsored Foursome – \$300 (\$400 after May 9th)
- Individual Golfer – \$75 (Students \$60)

SPONSORED FOURSOME - \$500 (\$600 after May 9th)

- (1) Golf foursome (\$300 value)
- Hole sponsor lawn sign with company logo
- Company logo on banner and event material

The slots for this event will not last long. Early registration is the only way to guarantee a spot. Teams will be emailed 2 weeks prior to outing with hole assignments and registration details.

Registration includes cart rental, lunch, hors d' oeuvres at reception, award and prizes, and non-alcoholic beverages (cash bar for alcoholic beverages).

For more information contact:

Wayne Richter at (262) 770-0252 / richterway@sbcglobal.net

Tony Grant at (414) 755-2164 / tony.grant@earthlink.net

Additional sponsorship opportunities available on a first come basis:

LUNCH SPONSOR - \$1500

- Exclusive recognition as lunch sponsor
- 1 golf course foursome (\$300 value)
- Full page ad in SAE Milwaukee Section Newsletter for one year. (\$1000 value)
- Reserved table of (5) at any Milwaukee Section event (\$100 value)
- Hole sponsor lawn sign with company logo
- Company logo on banner and event material

DINNER SPONSOR - \$2000

- Exclusive recognition as networking event sponsor
- 2 golf course foursomes (\$600 value)
- Full page ad in SAE Milwaukee Section Newsletter for one year. (\$1000 value)
- Reserved table of (10) at any Milwaukee Section event (\$200 value)
- Hole sponsor lawn sign with company logo
- Company logo on banner and event material



2nd Annual SAE Milwaukee Scholarship Golf Benefit

Wednesday, June 4th 2014 • Mee-Kwon Golf Course, Mequon

Mail to: 1588 Woodland Drive Grafton, WI 53024 • Or register online at <http://www.milwaukeeesae.com/>

No refunds after Wednesday, May 28th 2014

Sponsor Information (The donation receipt will be mailed to this contact.)

Company _____

Contact Name _____

Phone _____

Address _____

City/State/Zip _____

Email _____

Payment Information:

Total Amount _____

Check Enclosed (Make Check Payable to SAE Milwaukee Section)

Check Here If Paid Online via Credit Card

If paid online and require a receipt please mail or email this form to the address above or to richterway@sbcglobal.net.

		\$1,500 Lunch Sponsor	\$2,000 Dinner Sponsor	\$520 Sponsored Foursome (\$620 After May 9 th)	\$320 Non-sponsored Foursome (\$400 After May 9 th)	\$80 Single Golfer (After May 15 th \$100)
1 st Foursome ** Leader's Name						
2 nd Foursome ** Leader's Name						
3 rd Foursome ** Leader's Name						
4 th Foursome ** Leader's Name						
Individual Golfer **	<i>(Individual golfers will be paired to make foursome.)</i>					

** Will be contacted 2 weeks prior to event with hole assignments and registration details. Need to provide both name and contact information.

Early Bird Registration – Register Before May 9th

A recap of recent section events.....

SAE Milwaukee Section Student Night 2013 Review

The Annual SAE Milwaukee Student Night was held this past Nov. 7th hosted by the UW-Madison SAE Section. SAE Section advisor Dr. Glenn Bower and the section students were outstanding and gracious hosts. The evening kicked off with the students' showcasing their collegiate design vehicles and tours of the University's impressive engineering facilities. Michigan Tech University, UW-Milwaukee, MSOE, Marquette University, and UW-Madison were the Milwaukee Section schools with vehicles on display. Students from UW-Platteville, part of the Mississippi Valley SAE Section joined us to show off their Clean Snowmobile student design project. This event allowed the students the opportunity to network with each other and with the section's professional members, which is encouraged at SAE Milwaukee Section events.



Following a great dinner, attendees were treated to presentations featuring the UW Madison Engineering Program and UW-Madison FSAE Alumni Scott Ahlman. Grainger Professor of Sustainable Energy and Mechanical Engineering Department Chair Jaal Ghandi gave an overview of the UW-Madison Engineering Program and the research performed in their facilities. Mr. Ahlman spoke about how his experiences with the UW Madison Formula SAE team aided/inspired his professional success in Indy Car, Champ Car, NASCAR, the Ford GT, and ultimately lead to Scott starting his own engineering company, Ahlman Engineering, Inc.



Finally the reason this meeting is held, the SAE Student Sections took the stage to present to the professional members an overview of their Sections.

Representatives from each university spoke about their respective collegiate section covering topics such as chapter activities and meeting topics, results of past design competitions, community outreach, leadership development, and lessons learned over the past year. The professional members in attendance served as guest judges. By the night's conclusion, UW-Madison SAE Student Section was awarded top honors.

Results of this competition with grant totals are as follows:

1st Place: UW-Madison \$1800

2nd Place: MSOE \$1400

3rd Place: UW-Milwaukee \$1200

4th Place: Marquette University \$1000

5th Place: Michigan Tech University \$800

*Northern Michigan University did not present this year



The Students Sections are able to apply these grants to improve their Student Sections or vehicle projects as they see fit. Remember that these grants are available through your generosity at and participation in SAE Milwaukee Section meetings and events throughout the year. Please make it a point to reach out to any of the students from these schools and congratulate them on their hard work!

In Remembrance...

William A. Riebe "Bill" Born March 13, 1933 and joined his Lord and Savior on October 2, 2013, age 80. Devoted husband of Edith "Edie" (nee Klockow). Loving father of Janet (Bill) Kroeschell, Alan (Katherine) and David (Jenice) Riebe. Proud grandfather of six grandchildren. Brother of the late Ruth (the late Terry) Knight. Further survived by other relatives and friends. Bill retired from OMC Evinrude Research Center in 1992 after 31 years of service. Memorials would be appreciated for the National Kidney Foundation. See more at:



<http://www.harderfuneralhome.com/obituary/William-Arthur-Riebe/West-Bend-WI/1300867#sthash.Flh8Qb53.dpuf>

Bill was a devoted member of the SAE Milwaukee Section Board. Bernard Krauska and Wayne Richter represented our section at Bill's funeral.

Milwaukee Section 2013-2014 Governing Board

CHAIRMAN:

Garrett Herring—Power Test Dynamometers
garretth@pwrst.com

VICE CHAIRMAN: OPEN**SECRETARY:**

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Kurt Person—HB Performance Systems

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Drew Boyer—Modine
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NEWSLETTER EDITOR:

Matt Anderson—Briggs & Stratton
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**STUDENT PROFESSIONAL TRANSITION
MANAGER:**

Nerissa Hanson—Mercury Marine
Nerissa.Hanson@mercmarine.com

STUDENT REPRESENTATIVES:

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MSOE: Charlie Scanlon scanlonc@msoe.edu
UWM: Andrew Caron ajcaron@uwm.edu
Michigan Tech: Christopher Blanch cmblanch@mtu.edu
NMU: John Walsh johwalsh@nmu.edu

Hello SAE Milwaukee Section Members and Friends,

With plenty of snow on the ground and the temperatures well below freezing, winter has definitely arrived. Our annual Student Night in November was a great success with five of the engineering schools in our area participating. We awarded over \$6000 in prize money to support these schools and it was impressive at the caliber of work and innovation these Student Sections have in these project vehicles. If you have never been to our Annual Student Night, I encourage you to join us next year.

December/January is typically our winter break for SAE events, but starting in February we have a full schedule through the summer with tours, competitions and outings you will not want to miss. Please keep your calendars open and keep an eye on your mailbox for upcoming newsletters with the details.

I wish all of you Happy Holidays and a great start to the New Year. See you in 2014!

Garrett Herring

SAE International Milwaukee Section Chair

Section Sponsors

The logo for Hayes, featuring the word "HAYES" in a bold, black, sans-serif font. The letter "H" is stylized with a horizontal line through its center, and the letters "A" and "Y" have a similar horizontal line through their centers. A small "TM" trademark symbol is located to the upper right of the word.The logo for Brooks Stevens, consisting of the word "BROOKS" in a bold, black, sans-serif font on the left, followed by a stylized graphic of three overlapping circles (two red, one grey) in the center, and the word "STEVENS" in a bold, black, sans-serif font on the right.

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