



February 1999

Milwaukee Section
www.milwaukee.sae.org

Editor: Dan Ziemann
E-Mail: Dan.Ziemann@wed.dresser.com

FEBRUARY DINNER MEETING AND TOUR

Thursday, February 18, 1999

TOPIC: Manufacturing, Design, and Performance of the Harley-Davidson Twin Cam 88 Engine

SPEAKERS: Skip Metz, Powertrain Engineering Program Manager

Dave Shoals, Manufacturing Support Services Manager

Harley-Davidson has designed their first completely new "Big Twin" engine since the overhead valve powerplant first appeared in 1936. Replacing the 1340 cc Evolution engine (by far the most popular large-displacement powerplant in motorcycling history), the Twin Cam 88 has been designed to be stronger, more powerful, and more reliable.

Mr. Shoals will highlight new processes involved with Twin Cam engine manufacturing. Mr. Metz will discuss the numerous design requirements placed on the Twin Cam, as well as the resulting power, noise, and emissions performance.

MEETING AGENDA

TOUR: Pilgrim Road Plant - Big Twin Engine & Transmission Manufacturing & Assembly. See page 2 for tour details.

Meeting: Davian's 16300 W. Silver Spring Drive, Menomonee Falls

Social: 5:00 pm

Dinner: 6:30 pm

Presentation: 7:45 pm

MENU: Stuffed Pork Chop with sage dressing and demi-glaze, or Whitefish with sweet peppers.

Both dinners include garden salad, red potato, oven fried vegetables, rolls, cherry peach cobbler.

Dinner Costs: Members & Spouses: \$17.00

Guests: \$18.00

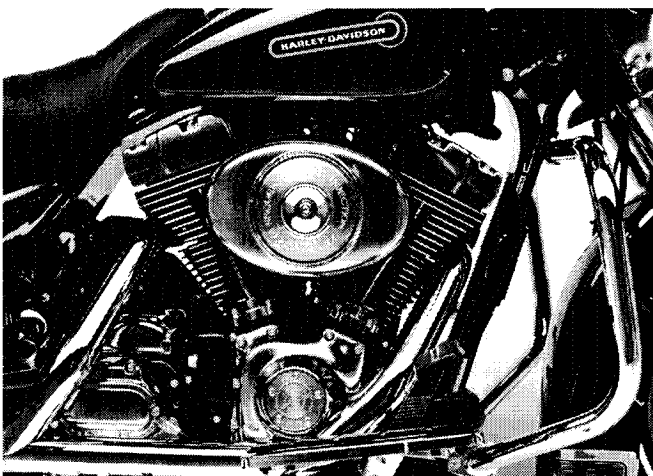
Students: \$ 8.00

Registration Info:

Registration for "**Tour with Dinner**" must be made prior to 4 pm on Monday, February 15th by contacting Kim Kellen at Harley-Davidson, phone (414) 616-1374. Please have your desired tour time slot and dinner selection ready before calling.

Registration for "**Tour Only**" (no dinner) will begin Tuesday, February 16th at 7 am. Contact Kim Kellen at (414) 616-1374. Please have your desired tour time slot ready when calling.

"No-shows" with reservations will be billed. Walk-in reservation arrangements not available for this meeting. Attendance during presentations only are welcome at no charge. Fifty year members are entitled to one free meal per year.



1999 H-D Twin Cam 88

SPEAKER BIOGRAPHY

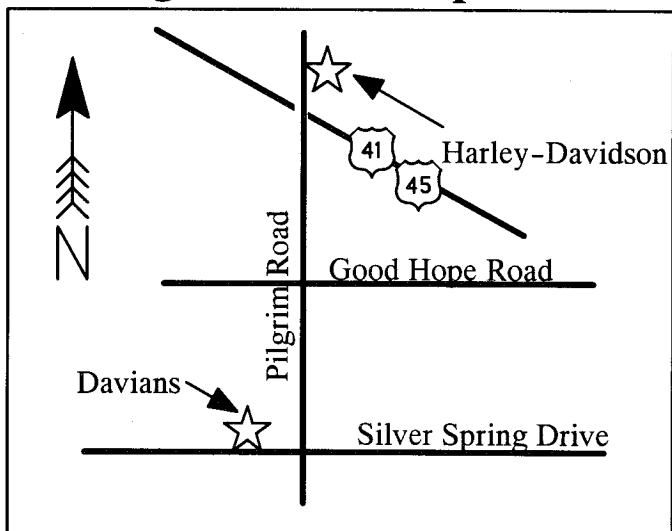
Dave Shoals

Dave Shoals is the Manager-Manufacturing Support Services for the Pilgrim Rd. plant of Powertrain Operations for Harley-Davidson Motor Company. Dave earned a degree in Mechanical Engineering from Western Michigan University in Kalamazoo, MI in 1979. From 1979 to 1995, he held various positions in manufacturing engineering with Eaton Corporation in Marshall, MI. Since 1995 Dave has been responsible for all manufacturing engineering on the large displacement engines, including the launch of the new Twin Cam 88 engine in July of 1998.

Skip Metz

Skip Metz is a Program Manager in the Powertrain Engineering organization of Harley-Davidson Motor Company. He earned a degree in Mechanical Engineering from Ohio State University in Columbus, Ohio in 1973. Since that time he has held product development positions with Chrysler Corporation in Detroit, Michigan from 1973 through 1981, and with Harley-Davidson Inc. from 1981 to the present time. His current responsibilities cover the large displacement air cooled engines and powertrains, and include Project Lead for the new Twin Cam 88, which entered production in July of 1998.

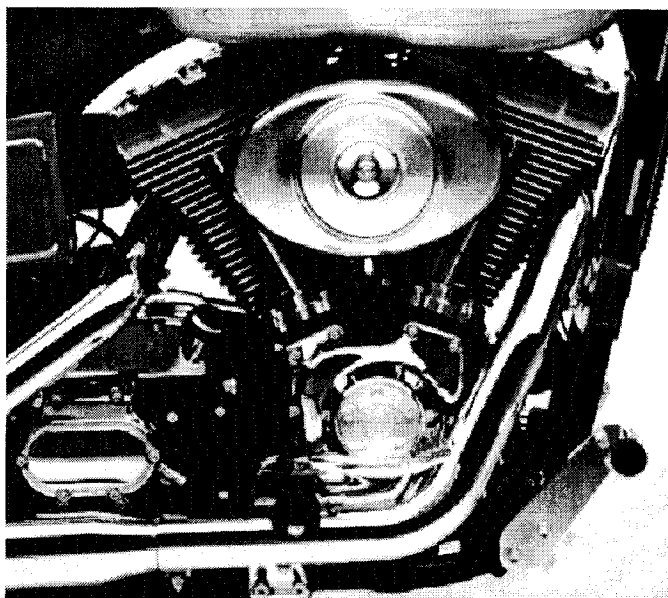
Meeting Location Map



Tour Start Times: 3:30pm, 4:00pm, 4:30pm, 5:00pm; registration required (see page 1). Tour attendance is limited. **NO CAMERAS ALLOWED.** No open toe shoes or heels higher than 1-1/2 inch permitted.

Directions to Pilgrim Road Facility:

US Hwy 41/45 to Pilgrim Road. Go north on Pilgrim Road to plant entrance on east side of Pilgrim. Take first right turn; follow this frontage road to visitor entrance (south wall of plant).



Harley-Davidson Twin Cam 88 Engine Specifications

Cyl. Arrangement: 45 deg V-twin, air-cooled

Displacement: 1450 cc (88 cu.in.)

Bore x Stroke: 95.3 x 101.6 mm (3.75 in x 4.0 in)

Comp.Ratio: 8.9:1

Valvetrain: OHV w/ pushrods, hydraulic lifters, 2 valves per cyl.

Fuel Systems: Sequential Port Fuel Injection, or 40 mm constant velocity carburetor

Ignition System: electronically triggered, digitally controlled

Power: 65 BHP @ 5500 rpm

Torque: 76 lb-ft @ 3250 rpm

Milwaukee Section 1998-1999 Governing Board

CHAIRMAN: Bill Schultz
Harley-Davidson Motor Co. Inc.
11800 W. Capital Dr.
P.O. Box 25527 Wauwatosa, WI 53225-5527
E-Mail: dunkleed@aol.com
Work: (414)616-1286
Fax: (414)616-1338

VICE – CHAIRMAN: Richard Sievert
Husco Int.
W239 N218 Pewaukee Rd
P.O. Box 257
Waukesha WI 53187-0257
E-Mail: ricks@huscointl.com
Work: (414)513-4272
Fax: (414)513-4422

SECRETARY: Alicia Muszynski
Harley-Davidson Motor Co. Inc.
11800 W. Capital Dr.
P.O. Box 25527 Wauwatosa, WI 53225-5527

TREASURER: Jon Jeffords
Harley-Davidson Motor Co. Inc.
11800 W. Capital Dr.
P.O. Box 25527 Wauwatosa, WI 53225-5527
Home: (414)549-3325
Fax: (414)616-1331

VICE CHAIR – MEMBERSHIP:
Rainer Schnabel
Brooks Stevens Design
1415 Donges Bay Rd. Mequon, WI 53092
E-Mail: rainer@brkstevens.com
Work: (414)241-3800
Fax: (414)241-3812

VICE CHAIR – MATH & SCIENCE/AWIM
Kim Gleffe
Engineers & Scientists of Milw., Inc.
c/o Marquette College of Engineering
1515 W. Wisconsin Ave. Milwaukee, WI 53233
E-Mail: esm@www.eng.mu.edu
Work: (414)288-3483
Fax: (414)288-7082

VICE CHAIR – STUDENT ACTIVITIES
Shawn A. Ray
General Electric Company
3000 N. Grandview Blvd. Waukesha WI 53188
E-Mail: shawn.ray@med.ge.com
Work: (414)548-2579

VICE CHAIR – GOLF OUTING
Bill Burke
Young Radiator Co.
2825 Four Mile Rd. Racine, WI 53404
Work: (414)639-1010
Fax: (414)639-1013

HISTORIAN: Norm Mollinger
7707 W. Cedar Ridge Ct.
Franklin, WI 53132
E-Mail: nrmoll@execpc.com
Home: (414)425-1244

VICE CHAIR-PLANT REP.
John Brackin
Simplicity Manufacturing, Inc.
500 N. Spring St.
P.O. Box 997 Port Washington, WI 53074-0997
E-Mail: jpbkin@execpc.com
Work: (414)284-8761
Fax: (414)284-8657

SECTION DELEGATE
Doug Bayerlein
Bay-San Co. Inc.
W229 N591 Foster CT, Waukesha WI 53186
E-Mail: dgbayerlein@woodway.com
Work: (414)548-6200
Fax: (414)548-6239

From Your Chairman:

Happy New Year to you all from your Section Governing Board. We hope that your holiday was enjoyable and prepared you for the winter of “retribution” that we seem to be experiencing. Our thanks are extended to Alicia Muszynski and the Case Corp. for an interesting and informative December meeting.

First of all, please note that the Section now has a Website thanks to the efforts of Student Activities Chairman Shawn Ray. The site address is “www.milwaukeesae.org” as noted on the front page of the newsletter. At this time the site is “read only” and contains general information regarding Board positions and meetings but will become interactive in the future. Please direct any questions or comments regarding the site to Shawn at his address listed in the newsletter.

This month we would like to recognize Section members who have achieved 25, 35 and 50 years of service. They are as follows:

25 Years: Wayne A. Anderson, Thomas M. Disch, William C. Durant, Kris D. Kubly, Stephen C. Nimmer, Michael D. Steinhardt, David K. Stricker, Russel J. Van Rens

35 Years: Thomas Jul Allain, Charles E. Carlson, Lee Roy Hardesty, William J. Schultz, David B. Stevens, John E. Wiesel

50 Years: Ivan P. Baxter, Lee D. Evans, William J. Pankratz, Charles L. Spraker

Our congratulations and thanks are extended to you for your contributions and service to SAE.

The Board position of Vice Chair Plant Reps is open and the Vice Chair Membership is looking for assistance. Anyone interested in joining the Board in these areas please contact me or any of the Board members listed in the newsletter.

Finally, meetings planned for the remainder of the year are:

March 18th:	John Deere, Horicon
April 22nd:	Generac, Whitewater
May 13th:	Great Lakes Schooner, Lakefront

William J. Schultz
1998/1999 Chairman
Milwaukee Section SAE

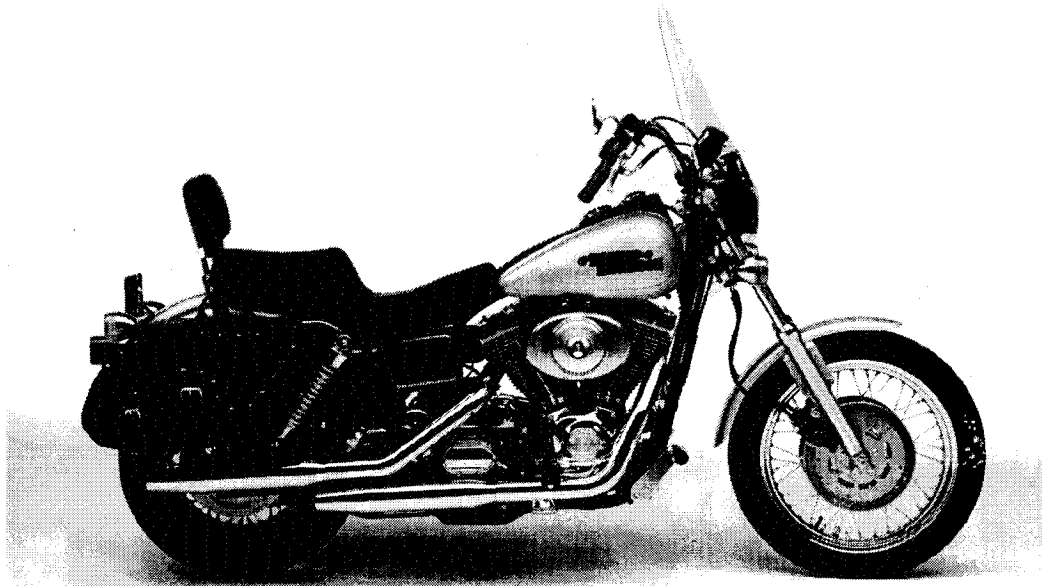


SAE Milwaukee Section



Harley-Davidson Pilgrim Road Plant Tour

Thursday, February 18, 1999



Meeting Sponsorship

We would like to thank the following organizations for their continued support of the Milwaukee Section:

Waukesha Engine, Harley-Davidson

For more information on becoming a sponsor, please contact: Bill Schultz (414) 616-1286