News & Updates

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Inside . . .

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Dave Blaney To Drive Jasper Engines & Transmissions Ford in 2002.

Jasper Motorsports has announced that Dave Blaney would take over the driving duties of the #77 Jasper Engines & Transmissions Ford Taurus for the 2002 NASCAR Winston Cup Season.

Blaney, 38, now in his second full season in the NASCAR Winston Cup Series, finished 3rd in the 2000 Raybestos Rookie of the Year standings, behind Matt Kenseth and Dale Earnhardt, Jr. Before making his first Winston Cup start in October of 1999, Blaney finished a solid seventh in the NASCAR Busch Series points standings that same year after capturing four pole positions, and finished in the top-10 13 times.

"The Jasper Engines & Transmissions Racing Team has come a long way in the past couple of years," said Doug Bawel, co-owner of Jasper Motorsports. "This season has been our best ever. The combination of Ryan Pemberton, Dave Blaney and Penske Jasper Engines brings infinite possibilities for the future."

Blaney, who hails from Hartford, Ohio, is one of open-wheel racing's most respected and successful racers of the past two decades. After winning the 1984 United States Auto Club Silver Crown Championship, Blaney won 192 winged sprint car feature events during 17 years in competition in the World of Outlaws, United Sprint Association, and the All-Star Circuit of Champions. He won the WoO Championship in 1995 and finished in the runner-up position for the title four times.

"I'm looking forward to the new challenge," said Blaney, who is married and has three children. "I think there is a lot of potential at Jasper Motorsports. The chance to work with Ryan and the whole JASPER team, as well as the opportunity to run Penske Jasper Engines and a Ford Taurus makes me confident about the future."

Blaney replaces Robert Pressley, who finished the 2001 season 25th in the driver's point standings. The JASPER Motorsports team finished 23rd in the owner's points.

Dave Blaney will drive the #77 Ford Taurus for the 2002 NWC season.

Customer Profile

DuPage Tire & Auto Center, Inc.

The DuPage Tire & Auto Center, Inc. provides full mechanical automobile repair and service to the residents of suburban Chicago.

The owner, Bob Shanahan, received his automotive experience from the Wyoming Institute of Technology. After that, Bob continued his automotive career at a Pontiac dealership, and at a Goodyear tire and auto center. In 1986, Shanahan struck out on his own and started DuPage Tire & Auto. His first shop was a rented facility in a Villa Park shopping center, but in 1992, Bob moved his business to its present location at 1200 East Roosevelt Road in Lombard.

Bob is one of five ASE Certified Technicians that handle the six service bays at DuPage Tire & Auto. Bob requires his technicians to take two automotive classes each year, then they must take one test per year to stay on top of the latest automotive advancements. DuPage Tire & Auto has also earned the ASE Blue Seal of Excellence, in which a company must have 75% of its repair technicians ASE Certified, and there must be a certified technician in each area of service offered.

DuPage Tire & Auto is also a family operation that gives personalized attention to its customers. Debbie Shanahan, Bob's wife of 22 years, is one member of the office staff.

A family operation: Debbie Shanahan, Bob's wife of 22 years, works the front desk of DuPage Tire & Auto Center.

Bob has been using remanufactured products from Jasper Engines & Transmissions for over eight years. He installs eight to twelve gas engines, transmissions and differentials each year. "We prefer to recommend to our customers quality products with a nationwide warranty," says Shanahan. "We won't put a product in your car that we wouldn't put in our own."

Not only is Bob Shanahan active at his shop, but he is also active in his community. Bob has been a member of the area Chamber of Commerce for ten years. He is President of the Oakbrook Terrace Lions Club, and is chairman of the local Police and Fire Commission.

But when Bob is not out serving in his community, he and his associates continue to serve existing and new customers of DuPage Tire & Auto like they were part of his own family.

DuPage Tire & Auto Center of Lombard, Illinois, provides full-service mechanical and auto repair to the residents of Chicago's western suburbs.

Re-Thinking The Engine Bearing

By Jeff Richardson, Product Manager - Engine Bearings
Federal-Mogul Corporation

FEDERAL MOGUL

Jeff Richardson

currently is Product Manager for Engine Bearings, Timing and Oil Pumps for the North American aftermarket. He has worked for Federal-Mogul for the past six years. Prior to that, Jeff was an auto technician for ten years. Richardson keeps his ASE Master certification up-to-date and also teaches Auto Shop in the local adult continuing education program.

The dominant engine bearing material in the automotive industry over the past 20 years is dominant no more.

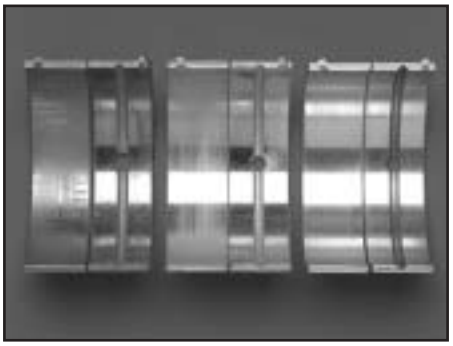
Overplated copper-lead (or 'tri-metal') bearing alloys have been virtually eliminated in new passenger-vehicle engines from major domestic and overseas engine manufacturers. Moreover, this trend can now be seen in the aftermarket, where production engine remanufacturers, in particular, have embraced the benefits of a new breakthrough in engine bearing technology.

That technology? Bi-metal aluminum alloys containing small percentages of silicon.

Tri-metal bearing alloys were the predominant OE and aftermarket technology from the late 1970s to the mid-'90s, due largely to their unique combination of performance characteristics: high fatigue strength, seizure resistance, and embedability. Tri-metal bearings are not, however, highly resistant to wear and are especially susceptible to damage when paired with an inadequate crankshaft finish.

Crankshaft finish is a critical issue at both the OEM and aftermarket levels. In spite of the fact that OEMs utilize computer-controlled grinding and polishing techniques, OE crankshaft finish characteristics can range from excellent to poor. This problem is magnified in the engine rebuilding industry, where grinding and polishing methods may permit greater finish variability. When these crankshafts are installed in engines equipped with tri-metal bearings, performance and durability can be compromised.

Until the mid-1990s, there were few alternatives for OEMs and remanufacturers faced with a growing number of performance and durability complaints. All of that changed with the development of bearing materials featuring aluminum alloys and small percentages of silicon.



These new bi-metal alloys, such as Federal-Mogul's 'A-Series' materials *(above at right)*, deliver greater seizure resistance than tri-metal materials while dramatically reducing or eliminating bearing wear in a wide range of automotive and truck engines. These attributes are particularly appealing to vehicle OEMs, many of which have established durability thresholds exceeding 150,000 miles for their latest engines.

The increased wear resistance of bi-metal aluminum alloys is due in large part to the use of silicon, which produces significantly greater surface hardness. The silicon particles also help polish the crank surface during engine operation, further reducing friction and related wear.

An additional benefit of Federal-Mogul's A-Series and similar bi-metal materials is their increased bearing wall size control; because the bearings are unplated, manufactured wall variances can be reduced by as much as 40 percent. This improves oil clearance tolerances and, in fact, makes it possible to maintain OEM clearances over the life of the engine — thereby reducing operating noise, vibration, and harshness.

Looking Back at Tri-Metal Alloys

The chief performance benefits of tri-metal bearings have become less important with each new generation of engine technology.

Tri-metal materials are softer and, as a result, more conformable than other materials to slight variations in engine geometry. In today's engines, however, a bearing journal that has not been restored to factory-specified tolerances will cause unsatisfactory operating noise and limited durability. Bearing conformability, therefore, is at best a short-term solution to a more serious problem.

(continued on page 7)

On the Technical Side:
Maintaining The Diesel Fuel Injection System

By Jim Wendholt - JASPER
Fuel Injection Technician

Jim Wendholt

has been associated with JASPER for 25 years. Jim has been a member of the Engine South Fuel Room since 1980, and is responsible for pump audits along with production scheduling and new parts ordering. Jim is Certified by the Association of Diesel Specialists, and is ASE Certified in Inline Pumps, Injectors and Blowers.

The diesel fuel injection system has frequently been referred to as "the heart of the diesel engine" because of its critical role in the overall performance and life of the engine. A wrong combination of injection pump and injectors, or an improperly maintained system, can wreak havoc with engine performance.

Because of its predominant role in the performance of the engine, and because in most cases it's the quickest and easiest to inspect or change, we sometimes jump to conclusions blaming the injection system for a problem which may very well lie in another part of the engine, or perhaps is something remote and has no direct connection to the engine or the injection system. Today we would like to focus on the word that sends shivers down the spine of anyone who has seen its effects on even the healthiest engine or fuel injection system. That word is CONTAMINATION. There are several types of fuel contamination. The most commonly seen form is water and moisture in the fuel system.

Water is considered the greatest enemy of the Diesel Fuel Injection system. The water will rapidly wear and oxidize steel components and lead to:

- Rust and corrosion of components.
- Governor metering component failure.
- Sticky metering components in both injection pump and nozzle.
- Injection component wear and seizure.

Water contamination can exist in three forms:

1. Emulsified Water - This is where the water is suspended in the diesel fuel.

2. Free Water - This is separated from the fuel and generally found at the bottom of the fuel storage tank.

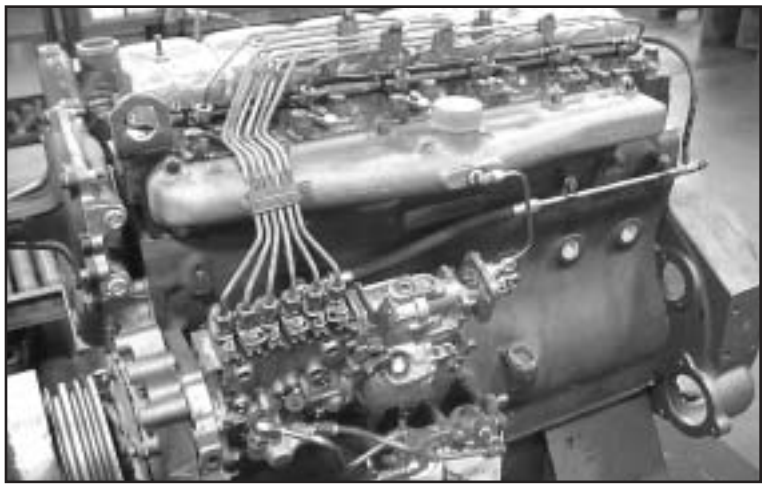
3. Dissolved Water - This is where the water has been dissolved in the fuel. The warmer the fuel the more water will be dissolved, but as the temperature drops the water will come out in the form of Free Water.

It is very important to have a well managed Preventive Maintenance schedule. Here are some hints to help prevent fuel contamination problems:

1. Purchase your diesel fuel from a reputable and well-traveled supplier.
2. Several fuel quality issues can be addressed with a fuel additive. These problems include excessive wear, gelling from cold weather and dry or low lubricity conditions. There are many additives on the market. Check with the original equipment manufacturer of your specific fuel injection system for their recommendation.
3. Fuel filtration is critical in maintaining the performance and long life of your diesel engine. The secondary filter must be able to remove a particle 5-10 microns in size. One micron is 40-millionths of an inch. To illustrate how small this is, consider a human hair is approximately 70 microns.
4. A water separator should also be located between the fuel tank and the fuel lift pump.

Whatever your role is in the maintanence and/or operation of diesel engines, as long as the proper guildlines are followed, you will realize the performance and life expectancy you require from "the heart of your diesel engine."

Stanadyne Diesel Systems also contributed information to this article.



Known as the "Heart of The Diesel Engine," the fuel system can wreak havoc with engine performance if not properly cared for. Water and moisture are the most commonly seen forms of contamination.

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(Front Page) ***(Back Page)***

Jasper Engines & Transmissions has developed an Installer Newsletter program called the "InfoLetter."

JASPER has partnered with NWZ WORX Multimedia, the nation's most recommended newsletter and marketing service for the automotive aftermarket, to help you with your direct mail campaign and to build stronger relations with your customers. NWZ WORX has helped over 3,500 independent repair facilities over the past 12 years in maximizing their advertising dollars and marketing successes. *The InfoLetter process* is hassle-free! NWZ WORX will write, design and personalize the InfoLetter as if you did it yourself.

The InfoLetter is a four-page, quarterly publication that is printed in two colors. The outer shell will be available for your personalized information which can be written by you or by NWZ WORX, whichever you prefer. The inside will consist of "stock" or standardized information that cannot be changed or personalized. The InfoLetter provides a reliable, consistent, and targeted means of communicating with your customers and to announce new developments and specials. The program also allows you to relate to your customers, on a one-to-one basis and can help personalize and cement your relationship. THE BOTTOM LINE - The InfoLetter mailed on a regular basis can build a more loyal base of customers who bring more business to you.

JASPER will co-op 50% the cost of the InfoLetter, mast head charges (name and design of the InfoLetter heading), and postage, up to the amount of available co-op funds accumulated in your account.

You will work directly with the NWZ WORX Multimedia staff who are very courteous and anxious to make your InfoLetter a success and help your business grow. NWZ WORX Multimedia designers and writers work together to get a proof to you quickly - they don't send anything to print without your final approval. Your payment for the InfoLetter will be sent directly to NWZ WORX, and they will send JASPER the necessary paperwork to process your co-op claim.

Call George Zabrecky or Mark Burford with NWZ WORX today at 800-473-0202 for additional information and costs of this program.

The Overdrive Inverter

Are you looking for a way to extend the life of your automatic transmission? Then the Overdrive Inverter by InterMotive Products of Auburn, California, may be your answer to increased transmission durability.

The Overdrive system is "normally on" to help a vehicle's fuel mileage. This can hinder a vehicle's performance when it carries heavy loads; pulls trailers or other vehicles, or if driven in city traffic or over hilly terrain. Such situations cause the transmission to constantly shift in and out of Overdrive, hunting for the right gear to be in. The driver of that vehicle would have to manually disengage the Overdrive by pressing a button on the transmission select lever.

With the Overdrive Inverter installed, the transmission's Overdrive is "normally off," so there is no need to manually cancel Overdrive. The vehicle is ready for any towing or city driving needs. The driver simply presses the button on the transmission select lever to engage Overdrive.

The Overdrive Inverter can extend transmission life by up to 40%, and increase torque converter life by nearly 60%. The reduction in shift hunting improves transmission durability, and can lower transmission fluid temperatures by up 10 degrees. It also enhances brake performance and vehicle safety.

InterMotive Products currently has the Overdrive Inverter available for Ford, Lincoln, Mercury, Dodge, and Jeep applications. For more information about the Overdrive Inverter, contact InterMotive Products at 1-800-969-6080. Or check them out on the Internet at www.intermotive.net.

APPLICATIONS

Aerostar	1996-97
Bronco	1991-96
EconolineVans - All	1989-Present
Expedition	1997-Present
Explorer	1995-Present
F-Series Trucks - All	1989-Present
F53 Motorhome Chassis	1989-Present
Mountaineer	1997-Present
Navigator	1998-Present
Ranger	1995-Present
Windstar	1995-Present
Villager*	1993-Present
Contour/Mystique*	1995
Contour/Mystique	1996-Present
Crown Victoria/Grand Marq.	1993-Present
Mark VIII	1993-98
Mustang	1994-Present
Probe*	1993-97
Taurus/Sable-LX/SHO	1993-Present
T-Bird/Cougar	1994-97
Cougar	1999-Present
Town Car	1993-Present

Dakota*	1990-Present
Durango*	1998-Present
Ram 1500-3500 Trucks*	1990-Present
Ram 1500-3500 Vans*	1990-Present

Grand Cherokee*	1993-Present

[illegible] All others-OE/OS

(Engine Bearings Continued)

The high degree of embedability of tri-metal bearings which feature a soft overplate material also is now seen as a detriment, rather than benefit, to overall engine durability.

All engines, new and remanufactured, have some internal debris. In fact, OEMs have discovered that debris is a major cause of failure of new engines, and that overplated bearings exacerbate the problem by trapping hard-particle debris within the bearing; this allows larger particles to score the crankshaft. As grooves are cut into the shaft, additional debris will enter the bearing and in a form of snowball effect, accelerate wear. Significant amounts of embedded debris also displace the bearing's soft lining material and reduce oil clearance.

Because A-Series and other modern bi-metal aluminum bearings are unplated, hard-particle debris is immediately flushed through the bearing and filtered out of the engine, eliminating the chance of long-term damage.

Additionally, the overall durability of a tri-metal bearing relies on the integrity of its overplate. Once this layer is damaged, due either to overloading or crank surface incompatibility, the performance attributes of the bearing are essentially destroyed.

Putting Both to the Test

To demonstrate the wear issues related to tri-metal bearings, Federal-Mogul partnered with JASPER in a test using three General Motors small-block 5.7-litre engines. Each engine was equipped with three types of replacement bearings: Federal-Mogul A-Series bored aluminum bearings with silicon, Federal-Mogul overplated copper-lead ('tri-metal') bearings, and a competitor's tri-metal bearings.

To simulate a severe operating environment, the engines' crankshafts were not polished. Each crank had a finish of approximately 24 Ra, while the crank pins in engines 1 and 2 were ground to a 10 Ra finish, and the pins in engine 3 were ground to approximately 24 Ra. The engines were each hot-tested for one hour without significant operating load.

The results were clear: the A-Series bearings were judged to look 'like new' by the PER's technical staff and members of the Federal-Mogul engineering team. All of the tri-metal bearings exhibited signs of severe wear of the overplate, and one bearing was worn well into its copper layer after just one hour of operation.

Bored vs. Broached

There's an additional advantage to some bi-metal aluminum bearings: Federal-Mogul A-Series bearings feature bored, rather than 'broached,' I.D.s. Boring is by far a more exacting process and one that improves the bearing's seizure resistance, fatigue strength, and oil retention. Most OEMs now specify aluminum bearings that are bored, and this technology is expected to become the dominant choice of production remanufacturers and custom engine rebuilders in the near future.

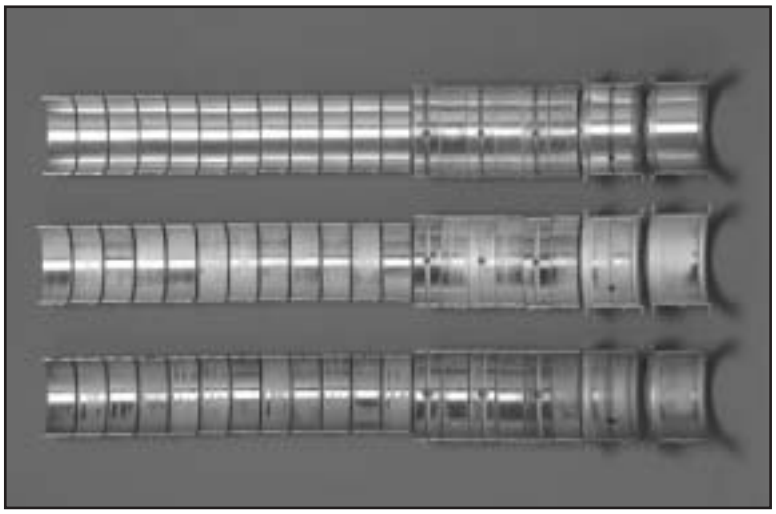
Summary

Federal-Mogul is the world's largest manufacturer of bi-metal aluminum and tri-metal copper-lead bearings.

Research conducted by engine OEMs worldwide, as well as extensive testing by Federal-Mogul and its partners, confirm the benefits of using unplated bi-metal aluminum engine bearings in a growing range of remanufactured engines.

These new alloys significantly reduce or eliminate the effects of inadequate crankshaft finishes on overall engine performance and durability. Combined with their other positive characteristics, bi-metal aluminum materials such as Federal-Mogul's A-Series appear to be the new standard, both for global OEMs and leading engine rebuilding operations.

Editor's Note: JASPER currently uses Federal-Mogul A-Series bearings on late model Ford and General Motors Products. The use of these bi-metal bearings will be expanded to other engine lines as soon as Federal-Mogul makes them available.



The use of silicon gives the Federal-Mogul A-Series bored aluminum bearings (top row) greater surface hardness and increased wear resistance, as compared to conventional 'tri-metal' bearings.

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