MCN
MOTORCYCLE CONSUMER NEWS
» 100% READER SUPPORTED & AD FREE • MAY 2017

BOBBER BASH

TRIUMPH, H-D, & MOTO-GUZZI

PLUS

KAWASAKI Z900

INDIAN CHIEFTAIN

» MCNEWS.COM

MCN LINEUP

Features

23

24

16

DEPARTMENTS

COLUMNS

VOLUME 48 // NUMBER 5 // MAY, 2017

EDITORIAL
Vice President, Content **Joyce Bautista Ferrari**
Design Director **LiLiana Estep**
Editor **David Hilgendorf**
Managing Editor **Russell Evans**
Photographer & Studio Manager **Gina Cioli**
Graphic Design Assistant **Traci Sipple**

Former Editors **Lee Parks, Fred Rau, Dave Searle**
Contributors **Mark Barnes, Alisa Clickenger, Harry Deitzler, Gregory Frazier, Jim Halvorsen, Glynn Kerr, Giles P. Lambertson, Gary LaPlante, Rick Lembo, Joe Michaud, Kevin O'Shaughnessy, Cary Tanner**

PRODUCTION
Multimedia Production Director **Laurie Panaggio**
Multimedia Production Manager **Jessica Jaensch**
Multimedia Production Coordinator **Shawna Luna**

lumina MEDIA
Chairman **David Fry**
Chief Executive Officer **Keith Walter**
Chief Financial Officer **David Katzoff**
Chief Sales Officer **Susan Roark**
Chief Digital Officer **Jennifer Black-Glover**
Senior Vice President, Retail **Scott Coffman**
Vice President, PR and Marketing **Cameron Triebwasser**

Editorial, Production and Corporate Office
2030 Main Street, Suite 1400, Irvine, CA 92614
949-855-8822; fax: 949-855-0654
editor@mcnews.com
mcnews.com

Motorcycle Consumer News® (ISSN 1073-9408) is published monthly by Lumina Media, LLC, 2030 Main Street, Suite 1400, Irvine, CA 92614. Corporate headquarters is located at 2030 Main Street, Suite 1400, Irvine, CA 92614. Periodicals Postage Paid at Irvine, CA 92619-9998 and at additional mailing offices. POSTMASTER: Please send address changes to Motorcycle Consumer News, P.O. Box 37185, Boone, IA 50037-0185.

Subscription inquiries or change of address:
Motorcycle Consumer News
P.O. Box 37185, Boone, IA 50037-0185
Tel: 888-333-0354 • Fax: 515-433-1013
online at custmag.com/mcn

Subscription rate in U.S. and Possessions: $44 for 12 issues, $65 for 24 issues. Canadian and foreign surface, add $12 extra per year payable in U.S. funds. Single copy price, $7. Please allow 6–8 weeks for new subscriptions to begin. When changing address, give six weeks' notice and address label from latest copy as well as new address with ZIP code. Occasionally, we make our subscriber list available to carefully screened companies that offer products and services that we believe would interest our readers. If you do not want to receive these offers and/or information, please write us at Privacy Policy, 2030 Main Street, Suite 1400, Irvine, CA 92614 or send us an email at privacy@luminamedia.com. Please view our Privacy Policy at luminamedia.com/privacy.

All contributions are welcomed on an exclusive basis, but must be accompanied by return postage. No responsibility is assumed for loss of or damage to unsolicited material. A guide to editorial requirements is available upon request. Permission to reprint or quote excerpts is granted only upon written or email requests and must be approved in writing or email by the editor. Specific reprint guidelines are available upon request.

Publications Mail Agreement No. 40612608,
Registration No. R126851765

Return undeliverable Canadian addresses to: IMEX Global Solutions, P.O. Box 25542, London, ON N6C 6B2, CANADA

Printed in the United States of America
Motorcycle Consumer News // **Accepts No Paid Advertising**

Please recycle, or better yet, share MCN.

Survey

> Megan Ekstrom is on maternity leave. Officer Jim Halvorsen is filling in.

> We'll cover survey results in more depth next month.

OUR READER SURVEY was a huge success. We are very fortunate to have received over 4,000 responses, nearly half of which offered additional comments, which we have read in their entirety.

For every segment in MCN, at least one person suggested we eliminate it. This applied to everything from the types of bikes we review, to article choices, layout changes and even individual contributors (myself included). We were informed MCN has become too glitzy, with too much photography and color, and we should return to black and white (not happening). Apparently we are also too technical and not technical enough. Some folks were upset that we moved their favorite contributor to a different page. It was even suggested that we accept ads! Yet, it is evident that we offer a great mix of content, as 60 percent of respondents indicated we should eliminate nothing.

OTHER CONSISTENCIES appeared, predominantly a request for more of everything, and we couldn't be happier to hear it. Particularly, more product reviews and comparisons—more bikes, gear, tools and farkles. You want more information—more stats, details, words. You want to know more about skills and safety, how the industry works and how MCN gets things done. We strive to fulfill your insatiable thirst for knowledge.

In a nutshell, we were overwhelmingly asked to keep MCN real, simple, honest, unbiased, ad-free, on paper and focused on products, touring, mechanical and riding skills. Exactly what we had decided before launching the survey. There was a reason for every change made during our redesign process, the majority of which made MCN easier to read, eliminated redundancy and increased our capacity to include more of the content we are known for and that you have come to expect.

THERE WERE LAMENTATIONS on elements deemed lost to the redesign. We've been working hard to bring back all of the content that was placed on temporary hiatus for various reasons.

The new Health Matters column is our return to medical advice, now with two authors. The back-page Innovation has become the lead for our new reviews section, which we plan to expand in time.

Indexes and the cartoon were meant to exist on our website, which is not quite ready yet. We'll print an updated performance index this year. We highly recommend *nadaguides.com/motorcycles* and *kbb.com/motorcycles* for used bike valuations.

Dropping or adding certain statistics isn't taken lightly. Measured top speed was eliminated due to environmental and personal safety concerns. A 200 mph bike is nothing more than bragging rights and irrelevant to daily riding. We cannot add additional tests until we have proper and consistent testing methodology. We'll always point out when particular products don't meet our expectations.

WE APPRECIATE ORDERS for pie in the sky, which require greater resources than are currently available. Bike teardowns, track and long-term testing, cost of ownership and more bikes per issue were among the requests. We'll happily include these big ideas every chance we get.

Some readers were concerned with a perceived lack of dialog and transparency about what was happening with MCN last year. If you've taken the time to write or call since then, hopefully you received a prompt response. We're not sweeping problems under the rug, we are correcting them.

There were fantastic suggestions for articles you would like us to pursue and we're keeping a list in hopes we can get to them all. One of my favorite ideas was interfacing in person with our readers.

Another MCN expertise has been controversial topics like helmet laws, training, licensing, checkpoints, loud pipes, modulating headlights, land use and lane splitting. Rest assured, if it generates debate, we'll keep poking the hornet's nest.

Thank you all for participating in this ride. MCN

LETTERS

LOOSE LOADS (MCN 2/17), regarding vehicles carrying unsecured items, reminded me of an incident riding on a three-lane highway.

Rounding a bend, we came up behind a moving truck in the left lane, which, among many items, had a mattress laying across the top. The mattress started to lift and sure enough, it flew off the pickup and landed in the center lane in front of me. I swerved around it, but the rider behind me didn't react as fast. Fortunately, he was riding a heavy bike and the mattress flattened as he rode over it. Situational awareness is required when riding.

—Gwynn V. Romano

MEGAN STEWART'S column on turning (MCN 2/17) reminded me of similar articles touting delayed apexing. This may be the best way to turn on a track, but it can get you killed on narrow, winding roads with blind corners. When taking the outside track and an oncoming car is cutting the corner, it could take you out before you can turn in. No matter where you learn it, information is only an aid!

—"Aloha" Pat

If we learn every skill we can as riders, we'll have additional options for each scenario. There are times when an inside line is better and times when the outside edge of the lane is better. Staying toward the outside of a lane when approaching a blind corner gives the rider more visibility through the turn and thus more time to react.

The objective is to understand the risks and rewards of each tactic learned and apply them appropriately. There's no single right way to ride a motorcycle, except with an open mind and a smile on your face!

—David Hilgendorf

I RUN AN MSF training site and was wondering what bikes you recommend for training motorcycles? I need to update my fleet and we're looking at the Suzuki TU250X fuel injected so we can say goodbye to carburetors.

What are your thoughts on the new Honda 300 Rebel? We're also considering ABS to help reduce crashes caused by grabbing the front brake.

—Dave Bellizzi

MCN is considering taking every relevant small displacement model to a training site and having trainers evaluate them as training bikes.

You're probably looking for reliable bikes under $4,500 without fairings, due to drop damage.

Suzuki is killing it in low-priced, small-displacement with the DR200S, TU250X, VanVan 200 and GW250. Honda offers the CB250R, CB300F, Rebel 300 and Grom. Yamaha still makes the TW200 and V-Star 250. Kawasaki only offers the minute Z125 Pro. For $5,000 you can add the BMW G 310 R and KTM 390 Duke.

You'll want the lowest maintenance bikes that fit the most diverse range of riders at the best price. It's good to have a couple 125s for the vertically challenged and inept.

We'll be reviewing the new 2017 BMW, KTM and Rebel soon. I'm all for ABS, as it should reduce tipovers.

—David Hilgendorf

SURVEY WINNER

MCN congratulates Robert Schaible of Springfield, Pennsylvania, the winner of our reader survey drawing for a $1,000 Aerostich gift certificate. Be sure to spend it all in one place, Rob!

Thank you! Aerostich is among the best when it comes to equipment for motorcyclists and MCN is the best publication for motorcyclists (the only one I save indefinitely). I appreciate all you are doing to continually improve MCN.

—Robert Schaible

MY INTERESTS LIE primarily in sport and adventure touring, 75 percent is two-up with my wife. My frustration is the lack of reviews of bikes being ridden two-up.

Rarely do I see articles that discuss the long-distance comfort for both rider and pillion. We have always liked the Honda ST and BMW GS series bikes for seat padding (which KTMs lack), visibility and legroom, and wonder what else might be viable.

—David Madeira

There aren't a lot of bike choices for the type of riding you do, and not that many riders doing long-distances two-up. We understand the desire for this information, but don't have the resources to ride two-up for long distances on most test bikes.

It would also be hard for us to measure comfort and capacity for the many different sized pillions out there. One option is to check out the bike at a local dealer and see what your passenger thinks when mounted. You could also try renting or trading motorcycles with others.

MCN bases recommendations on truth and experience, rather than assumptions and guesswork. The best way for us to cover two-up would be to get more recommendations from those who regularly participate.

—David Hilgendorf

I APPRECIATE THE editorial on Made in America (MCN 4/17). I am a Harley owner and retired member of the International Association of Machinists, the union that represents Harley employees. To me, Made in America means American workers are working—producing the goods and services that sustain our economy and provide the income for them to buy more of the things they need, like Harley-Davidsons.

The loss of American jobs is not just from offshoring production, but also by automation. Recent studies have shown that more jobs are lost to domestic machines than foreign workers. Harley has automated its production, resulting in one plant in York instead of two and a sizable reduction in its workforce.

There's no question that machines are helping Harley and other manufacturers produce a better product, but what happens to those Americans who aren't working because a machine took their job? One thing is certain, they aren't buying Harley-Davidsons. If the motorcycle industry and the American economy are going to survive, this country needs an economic policy that keeps people employed. No job equals no bike.

—Jerry Bloch

DAVID HOUGH'S articles about the high level of risk in riding motorcycles (MCN 1/17 and 2/17) were a blast of refreshing candor. Finally, the elephant in the room was objectively and empirically (if not dispassionately) addressed, free of suppression by advertisers and industry.

—Peter Hartwick

SEND LETTERS TO THE EDITOR

MCN Letters c/o Lumina Media
2030 Main St., Ste. 1400
Irvine, CA 92614
editor@mcnews.com

I OWE A great debt to David Hough. He probably saved my life after I reengaged in motorcycling at 50. After my ride home from the shop, I knew I was the one that needed a tune up.

I found "Proficient Motorcycling," read it cover to cover and dog eared many pages. I have since ridden many miles in at least a dozen countries on three continents. David's teachings have afforded me 18 years of riding.

This sport and industry is better because of David Hough. Thank you and all the best to you in retirement.

—Bill Le Sage

WHAT DAVID HOUGH calls 'inattentional blindness, I describe to my students as "motion camouflage." In nature, a bird of prey will aim to have something large (e.g., a tree) behind it as it swoops toward lunch; thus the prey cannot separate the predator from the background until it is too late.

Motorcyclists can overcome this effect by gently moving around within their lane, therefore breaking the driver's sight line and increasing visibility. You'd be surprised at the reaction of drivers when a bike 'suddenly' appears in front of them.

It has been suggested that all drivers in training should spend a few hours on two wheels—to see the problem from the other side. A conference recently took place at the Department of Transport office in London, with the subject, "More Motorcycles Could Reduce Casualties." Various road safety experts were invited, to discuss and advise on "bigger thinking" in regards to motorcycle safety.

The discussion of risk is a vital part of any rider training. If riders don't understand the concept, then they can't work to mitigate it as they ride. Advanced training (post licensing) covers additional skills required to make safe and responsible progress, with the main aim of returning home safely every time you ride.

—Geoff Pretty

PART OF THE reason for higher fatalities may be proliferation of cellphones and texting while driving. It would be interesting to see the fatality chart overlayed with data like smartphone sales or citations for illegal use.

—Frederick

Studies indicate that a driver on a cellphone is about as distracted as one who is legally intoxicated. It's logical to wonder whether drunks or texters have caused increases in fatalities.

The short answer is no. My science advisor looked at the numbers and there are no bumps or dips in the motorcyclist fatality rate that correlate to cellphone use. One possible theory why they don't affect the fatality rate of motorcyclists is that even sober, careful drivers fail to comprehend the presence of a motorcycle at all in about 50 percent of collisions.

It's not phones or alcohol that kill riders, it's impact forces. Any direct impact over about 40 mph is sufficient to end your career. Motorcyclists wishing to avoid collision need to be proactive about getting out of the way, regardless of what other drivers are doing, thinking, or drinking.

My advice remains to understand the danger, then decide whether or not you are willing to accept that as a motorcyclist you are statistically at greater risk of being seriously injured or killed. If the potential for injury is an acceptable trade-off for the enjoyment of riding, try to avoid being careless. But, if the danger is unacceptable, consider dropping out.

NHTSA calculated motorcycling as 26 times more dangerous than driving an automobile, but when we compare only driver fatalities, motorcycling is about 38 times more dangerous. We, as motorcyclists, need to get our collective brains wrapped around the magnitude of this statistic.

—David L. Hough

DOWNTIME

Ghosts, Bleeding ABS and Rectifiers

GOT PROBLEMS? MCN DOWNTIME
2030 Main St., Suite 1400, Irvine, CA 92614
or email questions with JPEG images to:
editor@mcnews.com Subject: Downtime

I HAVE A 2001 Road King FLHPI with 71,000 miles. The engine light goes on and it dies when slowing.

Several trips to the dealer resulted in replacement of the fuel filter, fuel line and check valve, fuel pump relay, intake manifold gaskets, spark plugs and plug wires, crank position sensor, camshaft timing sensor, engine temperature sensor. They also adjusted the hot and cold idle. The engine light still lit and the bike seemed sluggish, but at least it didn't die.

The last time I picked it up, the speedometer wasn't working and turn signals didn't cancel. After starting, the engine light stayed lit, then it died again. Tried to restart and all I got was a backfire and black sparkplugs.

After three trips to the dealer, they can't find a solution. Of course, it runs well in the shop and they can't duplicate an intermittent problem; but it's still there. A replacement CPU is no longer available.

—Carl Erickson

GHOST PROBLEMS ARE extremely frustrating for customers and technicians alike. I've spent hours troubleshooting only to find an obscure part causing intermittent problems. One of my biggest challenges was on a 1980 iron-head Sportster that was backfiring on one cylinder.

After replacing many parts and thinking I fixed the problem, I had the same backfire. I heard tachometers could cause spark issues on this model. I was puzzled how they related, until I looked at the wire diagram. The tach received a signal from the coil to indicate rpm.

Over time, vibrations would break the contacts in the tachometer, and the coil would ground through the tach instead of sparking, but only at certain levels of vibration. I saw spark when cranking it over, but hadn't accurately identified the problem. A new tach fixed the problem. I would not have figured out the root cause and prevented a reccurence without the experience of others.

Fortunately, your model doesn't use the same circuit and with current ignition systems, the carbon would have to be thick before it misfired, so that is unlikely. Black plugs indicate a spark issue or a rich mixture causing fouling.

Misfiring is commonly caused by air leaks, bad gas or lean running conditions. It could be a restricted injector or low pressure from the fuel pump; however, it sounds like the dealership replaced all the components.

The issues you mentioned with the signals and speedometer indicate an electrical problem, but if the running problems existed before the last service, they are probably separate issues. The signal and speedo may be due to the technician leaving a coupler disconnected or the contacts may have oxidized. It may not have been the technician's fault for the break in contact but they should have caught it during a test ride and vehicle inspection.

Did the shop check compression and leak-down on your cylinders? Compression should be about 180 psi WOT and less than 10-percent leak-down. There should be no more than 10 percent difference between both cylinders for either measurement.

There is a service bulletin for adjusting idle, search online for "SB M-1105 Magnetti-Marelli." There is a detailed procedure required to reset idle. It's not a simple process and requires the H-D scan tool, so I'd take it to a shop that is familiar with the procedure. The TPS can be difficult to tune because a tiny amount of adjustment causes a big change in voltage/resistance.

Most bikes use D-Jetronic (aka, Speed Density) calculation for fuel injection duration under approximately 2,000 rpm, measuring intake air pressure (vacuum) and engine rpm values against a preinstalled map. At higher rpm, most bikes use Alpha-N (aka Throttle Speed) calculation for fuel injection duration, measuring throttle position and rpm.

A longer injection would make it rich and a shorter injection would make it lean. If the intake air pressure sensor or TPS is unplugged, it will throw a code and run on an alternate map, usually making the fuel rich, which could cover the plug in carbon to the point that it causes misfiring and stalling. If air is leaking past the sensor, the ECU will see voltage and will not throw a code but the inaccurate values can also cause it to run rich. If the TPS is disconnected, it will throw a code, but if the TPS is worn or misadjusted it won't. A vehicle with the TPS unplugged will run normally up to about 2,000 rpm then accelerate extremely slow or stumble.

To test, first pull the plug and clean the contacts with contact cleaner and compressed air. If you can't get it clean, replace with a new plug. Then, if it starts fine and fouls again while idling, it could be a leaking intake air pressure sensor. Next, run the bike to full operating temperature, shut off the engine, then check the plug after it cools. If it's not fouled, try accelerating slowly up to 5,000 rpm, both in neutral and in gear, and see if it stumbles midway or stops accelerating at a certain rpm. Then try accelerating faster and see if you notice anything different. If it does stumble or lose acceleration midway, it is probably the TPS out of adjustment or damaged.

—Kevin O'Shaughnessy

HOW CAN I properly bleed the ABS systems on my 2016 Harley-Davidson Street Glide and 2017 Road King?

—Randy Olson

MOST MOTORCYCLE ABS are designed with a hydraulic line routed from the master cylinder to the ABS unit, and separate lines from the ABS unit to the calipers. On most units, the ports to both hydraulic lines are open and operate like a manual brake system. ABS units consist of pistons that retract when activated and expand available area in the ABS unit. The added area drops line pressure and allows the wheel to rotate for a split second to regain traction. Then, the piston moves back to the original position which returns braking pressure. The two major types either only decrease pressure or both decrease and increase pressure.

ABS units which are able to increase pressure contain a pump, reservoir, electronic map (ECU) and sensors. The increase in pressure can be used as a power assist brake system, similar to that used on automobiles. In this case, they increase pressure by approximately 30 percent over what the rider applies. The electronic map controls how much pressure is actually applied based on sensor input. On all ABS systems, a failed brake system will operate like standard brakes, though power assist will not work and you will have to pull harder on the lever to get to normal braking pressures. An activated ABS light will warn you. Some versions are able to create changes in lean angle when turning or control chassis dive under braking to assist with traction. These systems usually require the proprietary OEM digital tool to properly bleed brakes and reset volumes in internal reservoirs and cannot be done at home.

Unfortunately, H-D also requires using their Digital Tech tool (only available to dealers) to activate the ABS module to bleed air from the piston area. The activation may also reset an internal ABS reservoir volume, which is vital to maintaining ABS consistency, but I'm not sure on which models. OEMs do not share that information and nobody has been willing to send me an ABS unit to destroy for R&D purposes.

ABS units that do not create pressure, like your Harleys, use a simple electronic map, less sensors and a simpler ABS unit. You can usually bleed them using the standard methods. Whatever you do, don't add air to the system by draining it. Introduce fresh fluid and force it through the system with the lever or syringe instead. You won't hurt the system by bleeding and you can probably replace most contaminants and air, but you cannot fully bleed the pistons without proprietary tools.

—Kevin O'Shaughnessy

I'M HESITANT TO do a board level repair of my Honda ACE Shadow ignition unit (MCN 3/17), since the risk of failure could mean trashing the bike.

I contacted DynaTek and they responded, "We never offered an ignition kit for this application and have nothing adaptable to it. Your only option would be a salvage yard for a used unit." EBay had a few available, but I consider used electronics high risk of not being in working order.

I'll continue my repairs and hope the existing ignition unit keeps functioning. Now, if you can explain why I'm replacing the rectifier module a second time?

—Erik Hoet

R&D, TOOLING AND setup are cost prohibitive for one-off projects. With your advanced electronics understanding you could try remapping a universal ignition system. Check if *c5ignitions.com* might work with you or have something on the shelf that you could modify. Let them know your capabilities and that ignition modules are no longer available for your application. Most of their systems are replacement modules for vintage bikes with point systems, but they also offer replacements for V-twins with DC Capacitor Discharge Ignition (DC-CDI) and Transistor Controlled Ignition (DC-TCI). They use a high point count timing plate and optical sensor with a tunable ignition module. It should be a very accurate and adaptable system. This could be a good alternative.

As far as your regulator/rectifier (reg/rec), most problems are due to overheating from bad power connectors from the stator or bad grounds. Back in the 1980s, some Suzukis had problems with an external regulator ground. The small ground wire tracked from the regulator to the ignition switch and then to ground with several junction points between. As the wires aged and contacts corroded, the resistance would cause multiple problems. First, you would get a bad regulator, then a bad stator-to-regulator connector, then either the stator or ignition module would fail from resistance or overcharging. Parts would be replaced as detected, but the ground problem usually wasn't detected and problems would just keep cycling.

Considering you have a bad ignition module and regulator you could have a similar issue. If you have an external regulator ground, I'd go through the harness and clean up any contact points. You may also create a local reg/rec ground a few inches away or directly to the reg/rec bolt if mounted to a grounded portion of the frame.

Next, I'd check the large coupler between the stator and reg/rec. The contacts should stay cool when operating and the contacts clean. Check the back of the terminals where they crimp to the wire, as I've seen clean contacts with wires about to fall off and blackened insulation from overheating.

—Kevin O'Shaughnessy

Kevin O'Shaughnessy is curriculum developer at Motorcycle Mechanics Institute, formerly R&D at Race Tech.

Pipeline

> Edited by **Russell Evans**

» THE QUAIL MOTORCYCLE GATHERING is preparing to celebrate the 50th anniversary of the iconic Norton Commando at this year's event, on Saturday, May 6, 2017 at Quail Lodge & Golf Club in Carmel, California.

Each year, attendees at The Quail Motorcycle Gathering marvel at the more than 400 motorcycles, scooters and bicycles across a variety of categories, from rare specimens in the Antique class to the most innovative designs in the Custom/Modified class.

The 50th Anniversary of the Norton Commando sets the tone for this year's event, spotlighting one of the most recognizable and influential bikes in motorcycling history. Norton Motorcycles unveiled the Commando at the lavish 1967 Earls Court Show in London. The Commando was an immediate hit thanks to the revolutionary "Isolastic" frame-dampening system that eliminated the excessive vibrations that plagued its predecessors.

During the next decade, more than 50,000 units were produced and sold, and by 1972 it had been awarded "Machine of the Year" five consecutive times by the U.K.'s Motor Cycle News.

signatureevents.peninsula.com

1967 Norton Commando 750 'S'

» WHEN THE DROOLING and the jaw-dropping was done at the Chicago round of the J&P Cycles Ultimate Builder Custom Bike Show, it was SS Trikes which rode off in its big-wheel, big-tire trike with the Ingenuity Award.

Evocative of Mattel's "Big Wheel," the trikes are designed and manufactured in Rudolph, Wisconsin, by a team headed up by Jason Nieman. The S&S X-Wedge powered trike was judged to be unique in design and style, and a cut above more than 350 motorcycles in the competition that ran through all seven IMS shows across the country during the 2016-17 winter show season.

The winning trike features a 2-speed automatic transmission with lockup torque converter, beefy S&S 117ci engine, shaft drive, large custom wheel and inverted front suspension. It is designed to comfortably accommodate a variety of enthusiasts from 5 feet to 6-feet, 2-inches tall, with two seat heights and three foot control locations.

The custom production trike is available in primary colors, with options such as graphics, Wire-Plus digital speedo, air-ride suspension, a solo seat with enclosed trunk, multiple trim treatments and a black or polished engine available.

sstrikes.com

» INDIAN MOTORCYCLE HAS announced that any race team with $50,000 can step up and purchase its premier flat track race bike, the Scout FTR750.

It is the same bike used by Indian's new "Wrecking Crew" in the American Flat Track series. A purpose-built, high-performance 750cc V-Twin engine powers the Scout FTR750. It features a unique, ultra-light steel frame, large centrally located airbox and sleek lightweight carbon fiber body. Indian's design and engineering teams approached the bike as the ultimate combination of advanced performance technology and design elements from Indian's legendary racing models of the past.

The Scout FTR750 made its official debut during the 2016 season finale, when AMA flat track racing legend

2017 Harley-Davidson 750 Street Rod

» HARLEY-DAVIDSON IS learning that its 500cc and 750cc Street Rod engine variants have hit the mark with both younger riders in the United States, as well as the booming Asian markets.

The Street Rod's new High Output Revolution X 60-degree V-twin motor provides ample kick appreciated by the Harley off-shoot crowd thanks to gas-flowed, high-compression cylinder heads, high-lift camshafts, a new exhaust system, and new throttle bodies fed via a larger air box.

The evolved variant of the standard Street 750 engine features a heap of changes that translate to an 18 percent hike in power (estimated 68 hp) and 8 percent in torque (48 lb.-ft.) at 4,000 rpm, compared to 58 hp of Harley's standard Street 750 engine. The high-output engine also pulls maximum value at 8,750 rpm—about 1,000 higher than standard—and redline jumps to 9,000 rpm.
harley-davidson.com

» KLIM'S REFINED KODIAK collection enters the touring world in a sleek and tailored style that approaches the pinnacle of both quality and price.

Fully armored to withstand weather, abrasion and travel's most troublesome obstacles. Kodiak is built on a base of GORE-TEX Pro Shell main body fabric. Integrated perforated leather overlays in high-abrasion zones add a bit of functional style. Each piece is equipped with genuine YKK zippers, D3O CE-rated Level 2 armor, intelligent ventilation ports and functional cargo carrying pockets, as well as black 3M Scotchlite reflective material. MSRP is $999.99-$1,029.99.
klim.com

Klim Kodiak

Joe Kopp raced it at the Santa Rosa Mile. For 2017, Indian Motorcycle Racing comprises three of the most successful and decorated flat track riders in the sport: 2016 Grand National Champion Bryan Smith, 2013 Grand National Champion Brad Baker, and three-time Grand National Champion Jared Mees. All three will be running the Scout FTR750 this season.
indianmotorcycle.com

Indian Scout FTR750

LATEST RECALLS

Make: Zero
Model: 2017 S, DS, FXS
Component: Brakes, Hydraulics
NHTSA #: 117V145000

Make: Yamaha
Model: 2015-16 YZF-R3
Component: Fuel system
NHTSA #: 17V112000

Make: Yamaha
Model: 2015-16 YZF-R3
Component: Electrical
NHTSA #: 17V112000

Make: Triumph
Model: Multiple
Component: Alarm Kits
NHTSA #: 17E008000

Make: BMW
Model: 2016-2017 S1000RR
2017 S1000R
Component: Suspension
NHTSA #: 16V948000

Make: Honda
Model: 2006-2009 Gold Wing
Component: Air Bags
NHTSA #: 17V031000

Make: Indian
Model: 2014-2017 Touring models
Component: Fuel system
NHTSA #: 16V877000

Make: KTM
Model: 2013-2016 1190 Adventure
2015-2016 Super Adventure
Component: Hydraulic, brakes
NHTSA #: 16V854000

Make: CSC
Model: 2015-2016 Cyclone
Component: Brakes
NHTSA #: 16V864000

Make: Suzuki
Model: 2012-2016 DL650
Component: Alternator/Stator
NHTSA #: 16V878000

Make: Yamaha
Model: 2015 SMAX Scooter
Component: Speed Sensor
NHTSA #: 16V892000

Make: Ducati
Model: 2015-2016 Scrambler
Component: Sidestand
NHTSA #: 16V891000

Make: Suzuki
Model: 2013, 2015, 2017 GW 250
Component: Wiring
NHTSA #: 16V808000

For more information, contact the NHTSA Safety Hotline: 888.327.4236 or *safercar.gov*

World

> Edited by **Russell Evans**

YAMAHA

YS125

It makes sense that the new Euro4 emission standards coming into force this year will shift more of the commuter bike spotlight to models like Yamaha's successful YBR125. Yamaha responded with a retooled engine for better economy and range, and punched up the styling a bit as well before unveiling its new YS125.

This is all good news for the European market, which has purchased more than 150,000 of the little Yamahas since 2005. Most major motorcycle manufacturers have made a push into the A1 class populated largely by new or casual riders looking for easy, dependable performance within the class' 15 hp limit.

The YS's simple little four-stroke, air-cooled single features the same 5-speed as the YBR with one overhead camshaft commanding two valves. New is a cylinder with smaller bore and longer stroke, which matches the YBR's 10.5 hp, but at about 7,500 rpm instead of at 10,000—the YBR's ceiling.

Otherwise, the YS is virtually the same as the YBR, with the exception of the 14-liter gas tank, which extends the bike's range to about 185 miles.

The YS is priced at €2,700 ($2,850) and available in red, black and white.

yamaha.com

HESKETH

VALIANT

Hesketh Motorcycles enthusiasts have one year to save their money for a crack at the company's Valiant SC roadster. The price, estimated by the company to be in the £50,000 range when the brute becomes available in summer 2018, comes with quite a thrill ride, powered by a 128-ci. (2,097cc) V-twin. The Rotrex supercharger, tuned by TTS Performance, produces a reported 210 hp at 5,500 rpm and 217.6 lb.-ft. of torque at 3,000 rpm.

The bike has a dry weight of 527 pounds built around a double-cradle Chromoly steel frame and the S&S X-wedge engine with a 56-degree dry sump V-twin. The suspension is Ohlins/K-Tech up front and K-Tech Razor in the rear.

Since 2014, the British manufacturer based in Surrey, England, born from F1 racing, has produced only hand-built luxury motorcycles. The Valiant SC is the third model of the boutique brand,which reportedly has a basic Valiant in the works, likely staying within the popular roadster category, but without the supercharger.

heskethmotorcycles.com

Strategy

» ADVENTURE *BY GREGORY W. FRAZIER*

There's Aftermarket Support for Sinking Sidestands

The adventurer's motorcycle lying on its side is an ugly sight. It is uglier when fully loaded. Righting the downed beast can be beyond a single person's ability, depending on the bike's weight. Some models approach 1,000 pounds when blinged and farkled, then fully loaded.

The cause is often the sidestand, one designed by some engineer who likely thought the motorcycle would never be off the pavement. Its foot may be so small it can sink into soft macadam. The adventurer must learn the limitations of the sidestand, such as where it can be placed with the foot down and not sink. Some may be of use only on cement surfaces and never on dirt, sand or loose gravel.

TIPS: There are options to fix the undersized sidestand foot problem. The first is to replace the OEM part with a farkled aftermarket sidestand, if one can be found. Unfortunately, this is often an investment that will not be returned when the owner sells the bike.

A second fix is to purchase a larger pad from the accessory market and fasten it to the existing foot base. This option can be an inexpensive and satisfactory fix if the design is well thought out and compatible.

A third fix is to weld a larger pad to the foot, which is likely to be a more costly and time-consuming option. On some highly electronic motorcycles, this operation will be easier if the sidestand is removed to avoid dealing with the bike's sensitive electronic brain. The downside is it is difficult to determine whether that which is welded on is going to hit the frame, engine, transmission, exhaust or foot pegs, or touch the ground when cornering.

Those who opt for the bolt-on and weld-on fixes should be aware that these operations could decrease the bike's lean angle to almost zero. This makes your bike a tip-over waiting to happen with the slightest breeze. The thickness of the added base plate is the problem. It may be necessary to shorten the sidestand first, add the new base, and then perform some tricky welding and strengthening afterward.

Another simple and inexpensive option is a portable plastic or metal base that can be dropped on soft ground or macadam and slid under the sidestand. Tie the base to a long piece of string, lower it to the ground, then toe or heel it into place while still on the motorcycle. Tie the string off to a point on the motorcycle (such as a tank bag) so that when remounting your bike, the base can be reeled in with the string. Then roll it up and stash it in a tank bag or pocket.

Dr. Gregory W. Frazier authored four books on global motorcycle adventure, logging five circumnavigations and over 1 million miles.

A simple, inexpensive and portable solution to a sinking sidestand is made of plastic or some other synthetic material, such as this one from ROK. Drop it down, position it, and your kickstand is far less likely to drill down into soft surfaces below.

GREGORY W. FRAZIER

» **STREET** *BY WALT FULTON*

Look, Plan and Ride Ahead

Many of us dismiss or fail to consider the inherent danger associated with riding motorcycles. Dismiss it or not we should all understand, in no uncertain terms, that hanging out in the breeze at 70 mph with no crush zone, restraint system or air bags means that we have a great responsibility and vested interest in our own well-being. Here are three simple techniques that when refined and used together are extremely beneficial to us in any situation.

LOOK AHEAD: Sight is the most important sense we have. Without seeing it is impossible to collect enough information to make consistent and accurate decisions that will keep us out of trouble. How far ahead should we look and what are we looking for? The best-case scenario would be to look as far ahead as we can see and become aware of anything that could develop into a hazard to us as we move through time. Looking ahead is more a reference to time than it is to direction so remember to also check your mirrors every few seconds. Situations may change by the second or even a millisecond!

In traffic, never focus or fixate on the vehicle in front of you. This is, often times, difficult not to do—but don't fall into this trap. Offset your lane positon to one side (or the other) and look around the vehicle, keep your head up and eyes scanning on a continual basis.

PLAN AHEAD: Based on what we see we must develop a plan of action that keeps us out of trouble. Trouble can be defined as traffic, debris, animals, pedestrians and more. Knowing that riding is always a dynamic situation means that our plan of action may change multiple times in a short distance based on what we see. If we play a simple game of "what will I do if this happens?" and plan a response, we are well on the way to an enjoyable and drama-free ride. Surprises and being caught off guard are never good for motorcyclists.

RIDE AHEAD: This is the phase where the "Look Ahead" and the "Plan Ahead" come together and morph into the action we must take should our estimate of conflicts come to pass. Keep in mind there only two maneuvers we can do, or a combination of both, to avoid conflict: Modify our momentum (speed up or slow down/stop) and/or change our position on the roadway (move right or left).

Considering potential scenarios to conflicts as we travel through time offers us a great benefit—more time to implement evasive maneuvers if our predictions come to pass. Having pre-considered steps to avoid conflicts as we ride and before we get to a conflict helps to quicken our response time if a situation actually happens. When you see potential conflicts developing consider covering the brakes to reduce time needed to start braking.

Stay focused, stay alert and never let your mind wander. After all, hanging out in the breeze can have a down side.

Walt Fulton is a retired roadracer, product specialist at Kawasaki and proprietor of Streetmasters Motorcycle Workshops.

» **LEGAL** *BY HARRY DEITZLER*

Who Needs A Lawyer, Anyway?

I hear that in Florida, insurance claims/payments are hardly worth the effort to involve a lawyer. After all is said and done, the unfortunate victim in a motorcycle accident walks off with nothing more than having his or her bills paid. In fact, I hear that once a lawsuit is involved, the health insurance carrier falls out of the picture and lets the hospital collect directly from the results of the suit, sometimes not fully covering the huge bills. It may be better to not sue.

— Paul in Florida

If the available motorcycle and motor vehicle insurance consists of nominal limits, what you suggest may very well be true. Sometimes there is nothing to be gained through lawyers and litigation. This is particularly true in Florida where your legislature has enacted ridiculously low minimum limit requirements for drivers. The deficiency of Florida's virtually useless minimum limit is compounded by the corresponding "no fault" personal injury protection 'PIP' coverage (only 10 of the 50 states have enacted PIP laws).

In essence, Florida lets the bad drivers off the hook. PIP coverage from your own policy pays the first $10,000 of your medical bills. In a motorcycle crash, that is probably close to useless. Medical bills for injured riders can easily be tens or hundreds of thousands of dollars. After your $10,000 PIP coverage is exhausted, you must find other resources to pay for medical treatment, lost wages, disfigurement, and other harms or losses.

This can create a real mess in the beginning because your health insurance (particularly if it is Medicare) may refuse to pay until the PIP coverage is exhausted. The additional delay can adversely affect your credit and may delay critically necessary medical treatment. Alternatively, if the health

DIRT *BY GARY LAPLANTE*

Adjust, To Make Sure Your Bike Fits

Motorcycle manufacturers make full-size dirt bikes to fit the average, 5-foot-10-inch adult male. These manufacturers position the seat, footpegs and handlebars on these bikes in precise locations for well-balanced handling. If you are a lot bigger or smaller than average, you must either adjust with your body to ride a full-size dirt bike or you can alter your bike with aftermarket products to make it fit you better. It is important to understand how you can adjust your body and how certain bike alterations can help make the bike fit you better, while also affecting your bike's handling.

After teaching both taller and shorter riders for the past 17 years, I have found that there are adjustments that can help body and bike work better together.

Tall riders are at a disadvantage when they need to stand up while they ride, as they must stoop to reach the handlebars. Sitting down may require a big bend in the knees, so many times, they just don't ride standing up, which seriously limits their capabilities in off-road riding. Installing taller handlebars may help these riders into a more upright, "energy-conserving" position. The problem is that this moves their bodies rearward, out of the proper "attack" position. Instead, taller people can and should adjust by moving around more on the bike, leaning forward in tight turns for improved front tire traction, as well as during steep climbs to keep the front wheel down.

Shorter riders often struggle when the time comes to put a foot down. Full-size dirt bikes have 12-inch suspension travel and thus must have relatively high seats. Here, the suspension and seat height can be lowered. The problem lies in giving away some of the 12 inches of suspension needed to soak up the big bumps. Otherwise, shorter people could adjust with their body, moving more on the bike. They must try to keep their bikes perpendicular to the ground when stopping and starting and must become proficient at shifting their hips sideways on the bike so they can place one foot on the ground at a time. When stopping, sharp-eyed shorter riders will often look for a rock or log on which to place their foot.

Unfortunately, there is no single bike that fits everyone; until we have more choices we must continue to adapt or alter. It doesn't matter whether you are tall or short, if you want any motorcycle to perform better, you can make limited physical adjustments then move your body around more when you ride.

Gary LaPlante is the author of How to Ride Off-Road Motorcycles and proprietor of of MotoVentures.com Dirt First training.

insurer is private and pays per the terms of your health insurance contract, there will almost certainly be a subrogation clause in the policy. That clause allows the health insurer to get the first $10,000 back from your PIP in addition to having a lien on money recovered from the at-fault driver's insurance in the amount of all additional medical bills paid.

If your medical bills meet or exceed the total of the PIP, at-fault driver insurance, and your own uninsured/underinsured coverages, your attorney may conclude that there is nothing that the legal system can do to improve your financial situation. On the other hand, an experienced attorney may be able to negotiate with your health insurer to reach an agreement which allows you to participate in an equitable sharing arrangement as to third party and first party insurance proceeds which are recovered if you pursue the responsible offender or assign your recovery rights to the health insurer. You will not get as much as you deserve, but you may at least get something.

Consider purchasing adequate uninsured/underinsured motorist (UM/UIM) coverage which will protect your own interests and avoid this battle if a crash should occur through the fault of another driver. Without UM/UIM, if you are hit by a driver with minimum limits, the best combined total of available insurance may be somewhere in the range of only $10-30,000, depending upon the state requirements applicable to the at-fault driver. In that situation you probably have no realistic legal recourse to secure fair compensation when your medical bills exceed those amounts. Hopefully your health insurance will at least pay the medical bills, but you will get nothing for your other losses.

Alternatively, if you have purchased $500,000 or $1 million of UM/UIM coverage, you should have sufficient resources to both repay your health insurer and receive fair compensation for the other substantial losses which most certainly will be incurred in the event of a serious motorcycle crash.

Harry Deitzler is a partner at Hill, Peterson, Carper, Bee and Deitzler, PLLC. Submit questions at *motorcyclejustice.com*

SHUTTERSTOCK

INNOVATION

» Bursig CENTER-LIFT MOTORCYCLE STAND

Ex-racer Sebastian Bursig's innovative lift/stand adds versatility, ease of use and portability to traditional stand design. The 32-pound frame is cut from thick, galvanized steel and then powder-coated to a glossy black, red, orange or white finish. Four dual-casters with two locks allow the stand to be wheeled around effortlessly with bike mounted and it can be secured when necessary. The main vertical column contains the lift, onto which a motorcycle (model-specific) attachment plate is installed using common hand tools. To ensure a bolt-on strength connection, a beefy pin on this plate enters an insert on the bike's swingarm pivot point and/or motor mount bolt hole, depending on the model, allowing the Bursig to raise the vehicle approximately 6 inches off the ground by swinging an arm that actuates the assembly.

Using the Bursig is a one-handed affair, with the entire operation taking place right next to the bike, instead of behind it, as with conventional swingarm stands. Better yet, once hoisted, any manner of service is possible, since the stand doesn't block many major components from being removed. It's a one-person operation, with leverage provided by the handle that enables easy lifting and lowering.

Upon lifting my own BMW R1200 R, I was able to actually mount the bike and shift around on it without any fear. It was rock-solid. Once unlocked, the Bursig's casters allow for easy movement over flat surfaces, allowing the user to quickly move a bike around the garage or pit, or store it in a tight space. Watch at *youtube.com/c/motomouthmoshe*.

The Center-Lift's model-specific attachment plates work with more than 115 common bikes, from Aprilia to Yamaha and nearly every one in-between. Others are added regularly. MSRP for the German-made Bursig stand is $599 plus shipping. The product has a full, lifetime warranty.

—Moshe K. Levy

●●●●● **Bursig USA; *bursigusa.com; (510) 595-3300***

» Harley-Davidson BRODMAN BOOTS

Overwhelmed by the sheer number of boots available at harley-davidsonfootwear.com, I played it safe and selected the attractive "Brodman"—boots that looked like, well, Harley-Davidson boots.

No regrets. Lightweight full-grain leather with a mid-calf cut and adorned with stainless steel badges out on the toe, along the heel and up near the top of the 7-1/2-inch high shaft, plus the classic silver buckle on the side. These boots offer the classic H-D style.

I was surprised at the Brodman's light weight. I expected a thicker, heavier leather, and that it would take some work to get my foot into them the first time. But thanks to the vertical zipper on the inside of the boot, they went on as easily as a pair of slippers. True to size and comfortable right from the start, the Brodman can be worn all day, right out of the box, thanks to its mesh lining and EVA inserts under heel and toe for just the right amount of cushion.

I wore them to a holiday party with jeans and a full-length, black wool overcoat and they were just right for the occasion.

I also wore them for a ride and got them a little muddy. I felt bad—they're almost too nice to get dirty. MSRP is $180.

— Russell Evans

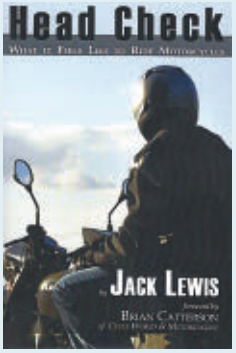
●●●●● **Harley-Davidson Footwear**
harley-davidsonfootwear.com

» Jack Lewis

'HEAD CHECK—WHAT IT FEELS LIKE TO RIDE MOTORCYCLES'

Jack Lewis is an acquired taste, at least for me. I also hated Scotch until age 33, but then developed great fondness for it. Some things take time to appreciate. So it was with Lewisian prose, which can be convoluted and so dense with unfamiliar references, slang, jargon and metaphor that some sentences require slow re-reading. I now consider it well worth the effort, like savoring good poetry.

And Lewis is often exquisitely poetic, though there's never any doubt he's both a man's man and a thinking man—zero fluff here, even in poignant passages. He's been likened to Cycle World's Peter Egan (my personal favorite), but I disagree. Egan is an endless series of undulating sweepers; Lewis is more often a tight, chiseled trials course. Both can be richly rewarding rides, but in very different ways.



A Middle East war veteran and award-winning writer outside motojournalism, Lewis has appeared regularly in Motorcyclist magazine since 2007. "Head Check" (2014) is a paperback collection of his essays, some previously unpublished, most with introductory comments by the author, and all in their original, unedited, unabridged form. Think greatest hits album with enough additional material that the faithful, who already bought all the rest, still need this one, too. A sample from his earlier book, "Nothing in Reserve: True Stories, Not War Stories", is also included.

If, like me, you've never ridden the Pacific Northwest Lewis calls home, you'll be planning a trip there. Head Check contains compellingly vivid descriptions of its scenery, roads and atmosphere. Alongside these externals, readers track an interior landscape. Lewis gives us glimpses of the multi-layered humanity of the rider—this particular rider—with just enough dots to connect and see a real person with real depth. This is what distinguishes art from mere information: Art creates complex images in our minds without spelling everything out.

We get intimate portraits of machinery as well, including a vintage Beemer, modern Ducati, Ural side-hack, and three-wheeled artisan oddity ACE Cycle Car, among others. And we meet intriguing riders, such as a medic in the Israeli Rapid Response Motorcycle Unit, various colorful characters from the road, and—certainly not least—Lewis's Pretty Wife.

So, invest whatever time it takes to get comfortable with this book's flavor. Like the Ardbeg Lewis and I both love, it may be challenging at first, but grows dearer by the sip.

—Mark Barnes, Ph.D.

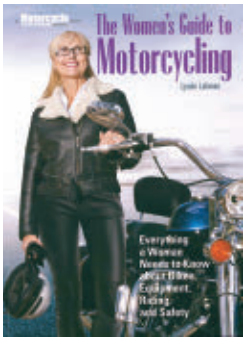
●●●●● ***Signed copies at Litsam.com for $19.99***

» Lynda Lahman

'THE WOMEN'S GUIDE TO MOTORCYCLING'

It's refreshing to look at a male-dominated area from the perspective of a woman. When it comes to motorcycles, women account for nearly a quarter of all riders and motorcycle owners, and that number is continually on the rise. In her book, "The Women's Guide to Motorcycling," Lynda Lahman takes a different approach to share the female-specific challenges women riders will face.

The book opens up with a brief history lesson, sharing the stories of female riders of the past and how they cleared the way for women today. The following chapters are interwoven with striking images, profound quotes, and a way of looking at riding that is uniquely feminine.



"At first, I worked on my skills to avoid accidents and to be a safe rider, but then I realized that the more my skills improved, the more I had those amazing moments—times when it all came together effortlessly. Continuing to work on my skills means more of those moments."

This quote stood out to me, relating completely to where I currently am as a rider. My confidence isn't at its peak, but each time I get on the bike, it gets a little stronger, and my skills get a little sharper. It's these little gems of wisdom that help the reader relate to the author and her experience.

Overall, "The Women's Guide to Motorcycling" is an engaging read with compelling stories, and plenty of information for riders of all skill levels and genders. Lahman knows how to weave an engaging and informative story, and this book is definitely one I'd recommend. MSRP $24.95.

— Megan Stewart

●●●● ***Fox Chapel; amazon.com***

MODEL
COMPARISON

BOBBER BASH

A new generation, **hungry to** establish **its own identity,** has spawned some intriguing **manufacturer offerings that capture a younger**, minimalist attitude.

> Text by **Russell Evans** and **David Hilgendorf**
> Photos by **Gina Cioli**

The term bobber defies definition. As with most customs created in the past century by young Frankensteins in dusty garages, grimy shops and dilapidated barns, constrained only by available resources, the only measure of success was whether the sum of the bedraggled parts would start when the key was turned.

Bobbers are a thing of beauty—in the eye of the beholder. A product of the soul, if not the heart. It is motorcycling's ultimate expression of individualism. By definition, no two are exactly alike; they are the antithesis of assembly line, a direct and deliberate act of rebellion against the status quo.

A few factors contributed to the birth of the bobber; one was speed. Shade tree mechanics often took cues from racing, and bobber roots can be traced back to Harley-Davidson J Series race bikes of the 1920s, from which unnecessary trim was eliminated and remaining pieces were cut down or "bobbed." To many, this made the bike look sleeker, faster and sportier. Another factor was easy customization. Whereas the choppers that started popping up in the 1950s and 1960s often used custom-built or modified frames, bobbers were created from stock motorcycles. Fenders were cut down or eliminated, mufflers were chopped or gutted and larger tires were fitted. Seats, mirrors, and suspension were also readily modified or replaced.

Triumph Bobber

Several manufacturers are trading on this minimalist expressionism, building vapid bikes as platforms for customization and then providing a catalog of accessories for "individualization." Others, such as the Triumph Bobber and Moto Guzzi V9 Bobber, are pre-bobbed, straight from the showroom.

Marketed as a "garage-built custom," the H-D Roadster is bobberish, with minimalist parts and a defiant stance. Unfortunately, it also did not survive MCN's quarter-mile benchmark—the hard launching fried the clutch. A nearby Harley service shop explained, "that's a common problem on Sportsters," right before whipping out a blown Sportster clutch plate from behind the counter to serve as example. Apparently, the bigger Harleys received clutch upgrades in 1998, but the Sporty did not. We sprinkled in observations about the bike, but couldn't complete CycleStats because we were unable to fully test the bike and pull our normal data from the process we report.

ENGINE

The HT (high-torque) 1200cc parallel twin Bonneville powerplant is claimed to have a dedicated "Bobber tune," with more of the 71.03 lb.-ft. of torque available down low and 72.49 hp on top. This Bobber would probably win every roadhouse race, if you didn't have to stop for fuel. The bike burns through petrol quickly, with barely a 100-mile range—we refilled the 2.4-gallon tank almost daily.

Throttle control is ride-by-wire and quite smooth, crisp and immediate in either of the two riding modes, Road or Rain. It never feels as though the bike is going to jump out of your hands and the traction control does a great job allowing the bike to fly without intervening like a nanny. The roar of the intake and rat-a-tat of the exhaust on deceleration are icing on the cake. All of the recent improvements to the Bonneville platform are evident in the Bobber.

The V9's 850cc, 90-degree transverse V-twin engine produces quite civil and manageable power, providing a smooth and easy throttle response, when traction control was disabled, plus the exhaust note is typical of a big V-twin. This engine reflects intelligent design, including a calibrated crankshaft to boost performance and an improved lubrication system for engine cooling and minimal energy loss. Like other Moto Guzzis we've tested, the traction control is an afterthought, the bike barely makes enough get-up to spin the rear tire, yet the TC chops the throttle in a hurry—fortunately it can easily be turned off.

The Roadster also sports a 1200cc twin, a V that's been doing good things for decades. Power was ample and acceleration brisk and smooth. Vibration is always present, but it distinctly adds to the charm of this bike.

Moto Guzzi V9 Bobber

TRANSMISSION

There were no issues with the torque-assisted, hydraulic multiplate clutch on the Triumph. Shifting was smooth and effortless, which may be partly why the engine felt so smooth.

While not buttery smooth and certainly not quiet, shifting gears on the Moto Guzzi was accomplished with a soft pull on the lever. After a while, you'll get used to the 'clunk' with every shift, very mechanical. On the other hand, clutch engagement was weak and nonadjustable, making quick launches a chore. If you just want to roll around casually, this bike won't get you in too much trouble.

The Harley shifted well, though it has the traditional requirement of a strong-handed pull. As mentioned, the clutch is on the bargain side, so those who plan to ride this bike as hard as it can be ridden, or are considering power mods, should budget upgraded clutch plates in the process.

BRAKES & WHEELS

The Triumph has ABS, including a singular 310mm disc with a Nissin two-piston floating caliper up front and a 255mm single disc out back. While that should be ample, the brakes have a soft feel that could and should be better. Inconsistent quick stops reflected the poor tuning of the binders and ABS, averaging 60-0 stops well over 130 feet, even though it's capable of better.

The V9 rode a bit heavy thanks to the 16-inch black alloy wheels being tread with fatty 130/90 and 150/80 Continental "cool factor" tires. A 320mm floating steel disc with a Brembo four-piston caliper works hard to maintain order.

The Roadster not only has the best feel, it also slowed the best and most consistently of this bunch. Chalk that up to Harley's ongoing commitment to better brake components, including dual front rotors, which the others lacked. I'll continue to say good things about modern Harley ABS; it's worth experiencing if you haven't had the opportunity, and worth the extra coin if you're buying.

SUSPENSION

The Triumph's nearly horizontal KYB monoshock with underseat linkage and 3 inches of travel does a fine job soaking up vibration from the floating rear end. Up front, KYB 41mm forks provide 3.5 inches of travel and feature rubber gaiters with a certain nostalgic aesthetic.

The suspension on the V9 offers the most travel of the three bobber models. With 5.1-inches up front and preload adjustable 3.8-inch travel twin spring rear shocks, we expected a more compliant and less cushy ride.

Harley offers a 43mm inverted front with 4.5 inches of travel and a preload adjustable 3.2 inches at the rear, the most sprung of any current Sporty. Equivalent geometry to the old XR1200, though the 31 degrees of lean angle isn't quite on par with the XR's massive 40 degrees. Still, when aspiring to lean on a Harley, this could be the ticket.

Harley-Davidson Roadster

ERGONOMICS & HANDLING

The Moto Guzzi is almost too comfortable to be a bobber. The long bench seat offers a natural, upright position that can be slid forward or back on, and there's even room for a passenger. The fly in the ointment is the sideways V-twin, which bites the knees and shins. Handling is good, thanks to a twin tube cradle frame with new gussets in the steering head, designed to bring balance between handling and stability. The style-oriented fatty tires are the only noticeable stain on otherwise excellent handling.

The Triumph is built on a new frame, chassis and suspension, all optimized around unique bobber geometry. The company readily admits the Bobber is not for long trips, but it sure is fun on short rides and great for tooling around town. The single saddle is comfortable enough, and its height and forward position are adjustable. The Triumph's handling is excellent and cornered exceptionally well, though the low stance sacrifices some lean angle in hard turns. This machine was designed for the "fun bike" spot in the garage.

The Harley has a rather committed riding position, and we had to rotate the levers a few inches lower to be able to reach them comfortably with the bars positioned below the tank as they are. The ground clearance is good and cornering was quite fun, but long peg feelers indicate that there are hard parts that will grind before you get to the inordinately long pegs, which also happen to be positioned directly where the legs should be when stopped—shin scrapers.

INSTRUMENTS & CONTROLS

You can't expect much here in the minimalist bobber world, and controls are all pretty standard throughout. Triumph actually has the most adjustable controls and actually packed a fair amount of information into one angle-adjustable clock. The analog speedo is easy to read, and LCD miniscreen features ample information, including a tach.

The Moto Guzzi also has a single can with analog speedometer, but no tach. The LCD readout includes only digital trip information. No lever adjustments.

The Roadster's large analog tach is its dominant feature. A small digital window displays a tiny, hard-to-read speedo, and can also display a secondary digital tach amongst the trip info. Controls are also not adjustable.

ATTENTION TO DETAIL

The British company got this predominantly American style most right, capturing the classic lines of a midcentury bobber. Styling cues include the EFI hidden inside fake carbs, the floating saddle, and minimal bodywork. Even the ignition, located near the right knee, is unique.

The V9 is almost more scrambler than bobber, but still sporty and minimalistic, from its cool tank racing graphics to opposing black megaphone pipes, which do a good job of keeping things quiet. A solo saddle and jettisoned passenger pegs would be a strong move toward a more classic bobber.

The Roadster is the best Harley for those not part of the collective. A de rigueur blank canvas on which to complete one's own work of art, and there's a plethora of bits and bobs available to bolt to this bobber—good for the DIY crowd.

VALUE

At $11,900, with great styling and performance, but limited range and function, the Triumph Bobber is the bike to beat.

Like all Harleys, features are optional and adding the $365 freight, $795 ABS and $550 for two-tone paint (included on the other bikes) to the $11,299 base price instantly brings it to $13,000—pricey.

The V9 is a fun and comfortable bike and the best bargain at $10,490, but we'd still pay a little more for the extra refinement and power of either of the other options. MCN

2017 TRIUMPH BOBBER

CycleStats™

QUICK HITS

MSRP: $11,900
Category: Bobber
Displacement: 1200cc
Engine Type: Liquid cooled, four-stroke, parallel-twin
Warranty: 2 year, unlimited mi.
GVWR: 809 lbs.
Wet Weight: 535 lbs.
Carry Capacity: 274 lbs.
Seat Height: 28 in.
Colors: Morello Red, Competition Green and Frozen Silver; Ironstone; Jet Black.

SPECIFICATIONS

Valvetrain: 8-valve, SOHC
Bore & Stroke: 97.6 x 80 mm
Comp. Ratio: 10.0:1
Transmission: 6-speed, torque-assisted wet, multi-plate clutch
Final Drive: X-ring chain
Fueling: Multipoint sequential electronic fuel injection
Tank Capacity: 2.4 gallons
Fuel Grade: 91 octane
Exhaust: 2-into-2
Ground Clearance: 4.5 in.
Wheelbase: 59.4 in.
Rake & Trail: 25.8°/ 3.5 in.
Tires: 100/90-19 Avon Cobra AV71, front; 150/80 R16 Avon Cobra AV72 radial cruiser, rear
Suspension: KYB 41mm forks. 90mm travel, front; KYB mono-shock with linkage, 76.9mm travel, rear.

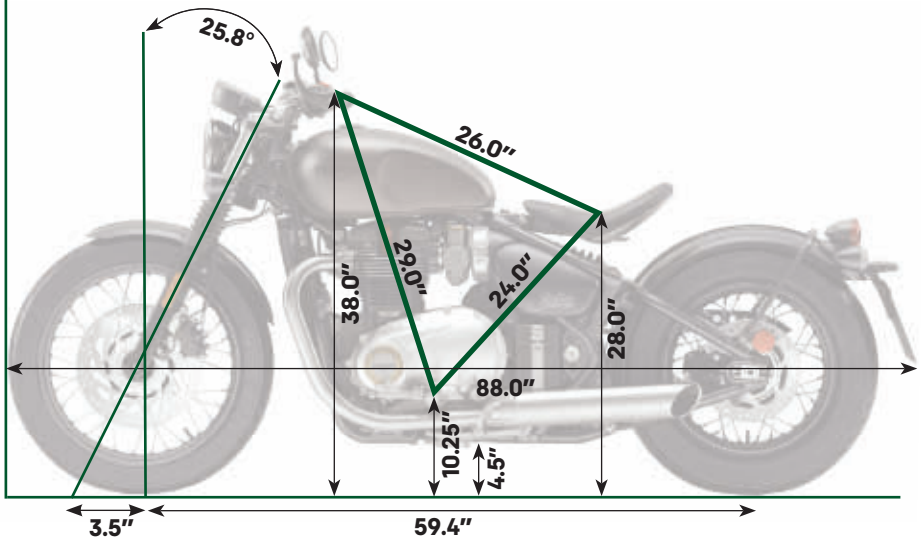
ELECTRICS

Battery: 12V, 10Ah
Ignition: Digital Inductive
Alternator Output: 300W
Headlight: 60/55W H4
Instruments: (analog) speedo, (digital) odo, trip, tach, clock, temp, fuel
Indicators: engine, oil, neutral, signal, high-beam, gear, mode, TC, ABS

MAINTENANCE

($100/hr.)	Miles	Labor	Parts	Total
Routine	10,000	$258	$96	$354
Valves	10,000	$150	$80	$230

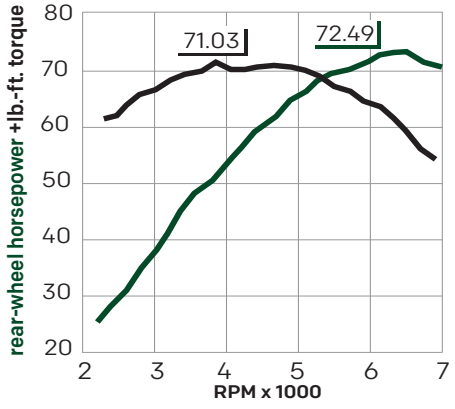
GEOMETRY



PERFORMANCE

Fuel Economy (MPG)
High: 47; **Low:** 38; **Average:** 42
Estimated Range: 100 mi.
60-0 mph: 124.0 feet
0-60 mph: 4.08 seconds
1/4 mile: 13.13 sec. @ 99.1 mph
Power to Weight: 1:7.3
Speed @ 65 mph: 63 mph
RPM @ 65 mph: 2,850
RPM @ limit: 6,900

HORSEPOWER & TORQUE



SMILES
1. 1200cc engine
2. Classic styling
3. Crisp handling

FROWNS
1. Brakes need help
2. Sparse instrumentation
3. Ergos not for everyone

EVALUATION

Engine:	●●●●●
Transmission/Clutch:	●●●●○
Brakes:	●●◐○○
Suspension:	●●●◐○
Handling:	●●●●◐
Riding Impression:	●●●●◐
Ergonomics:	●●●◐○
Instruments/Controls:	●●●○○
Attention to Detail:	●●●●○
Value:	●●●●◐
Overall:	●●●●○

2017 MOTO GUZZI V9 BOBBER

CycleStats™

QUICK HITS

MSRP: $10,490
Category: Bobber
Displacement: 850cc
Engine Type: 90° transverse V-twin, air/oil-cooled
Warranty: 2-year limited warranty, unlimited mileage
GVWR: 928 lbs.
Wet Weight: 474 lbs.
Carry Capacity: 454 lbs.
Seat Height: 31 in.
Colors: Nero Massiccio, yellow inserts; Grigio Sport, red inserts

SPECIFICATIONS

Valvetrain: Pushrod, 2 valves/cylinder
Bore & Stroke: 84 x 77 mm
Comp. Ratio: 10.4:1
Transmission: 6-speed, single-plate dry clutch
Final Drive: Shaft
Fueling: EFI
Tank Capacity: 4.0 gallons
Fuel Grade: 91 octane
Exhaust: 2-into-2
Ground Clearance: 6.0 in.
Wheelbase: 57.7 in.
Rake & Trail: 27.0°/ 4.6 in.
Tires: Continental Milestone, 130/90/16 front; 150/80 B 16 rear
Brakes: ABS, Brembo 4-piston, 320mm dual-disc front; 2-piston 260mm disc rear.
Suspension: Long-travel 130mm forks, front; spring preload adjustable shocks, rear

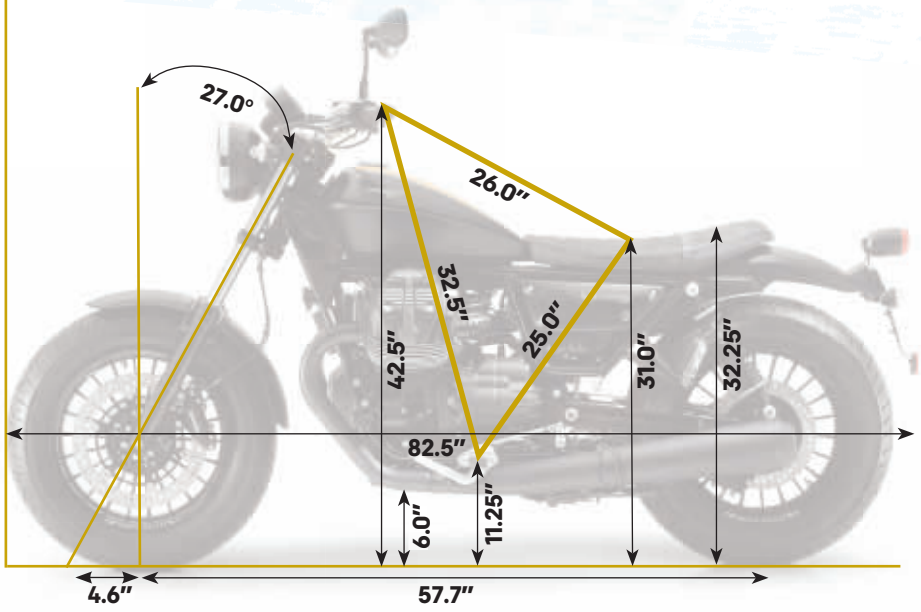
ELECTRICS

Battery: 12V, 18Ah
Ignition: Electronic
Headlight: 60/55W
Instruments: (analog) speedo, (digital) odo, trip, clock, temp
Indicators: engine, oil, neutral, signal, high-beam, low-fuel, TC, ABS

MAINTENANCE

($100/hr.)	Miles	Labor	Parts	Total
Routine	10,000	$170	$114	$284
Valves	10,000	$120	$18	$138

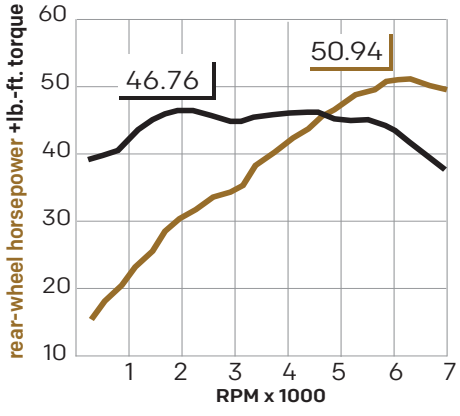
GEOMETRY



PERFORMANCE

Fuel Economy (MPG)
High: 39; **Low:** 38; **Average:** 39
Estimated Range: 156 mi.
60-0 mph: 123.09 feet
0-60 mph: 5.44 seconds
1/4 mile: 14.8 sec. @ 88.35
Power to Weight: 1:9.3
Speed @ 65 mph: 64 mph
RPM @ 65 mph: No Tach
RPM @ limit: 7,000

HORSEPOWER & TORQUE



SMILES
1. Upright ergonomics
2. Corners well
3. Stylish

FROWNS
1. Underpowered
2. Engine intrudes on rider
3. Weak clutch engagement

EVALUATION

Engine:	●●●○○
Transmission/Clutch:	●●●○○
Brakes:	●●●◐○
Suspension:	●●●◐○
Handling:	●●●●○
Riding Impression:	●●●◐○
Ergonomics:	●●●◐○
Instruments/Controls:	●●●○○
Attention to Detail:	●●●●○
Value:	●●●●○
Overall:	●●●◐○

TESTERS LOG

First cruisers, then roadsters, scramblers, and now a bobber for everyone. When foreign brands decide they need to emulate American motorcycle icons, they usually end up a yucky mess.

Hats off to Triumph, which has not only shown a penchant for taking a trip in its own country's time machine, but has successfully emulated ours as well. If I were going to buy a premade bobber, the Triumph is the only one I'd be looking at; it's really that good. It oozes style, performance, fun and about the only thing wrong with it are a lack of ground clearance and brakes that need some optimization.

What are you doing, Harley-Davidson? Offer the Roadster in any of your three "garage-custom" colors with ABS included for $10,000 and await the masses. The Roadster looks great, works well, and has amazing aftermarket support, but it's about $3,000 too expensive and needs stronger clutch plates.

Moto Guzzi has the Italian style thing all wrapped up, but slapping the bobber moniker on a standard does not make it so. Back to the drawing board.

—David Hilgendorf

Bobbers are not practical; they're just cool and fun. I felt like the Triumph took this concept to a new level. The styling is spot-on, the engine rips and it has a deep, throaty exhaust note. It is tuned for more torque, so it feels like it has more power than it does, although 1200cc's are enough for just about any bike. It turns well, and feels sturdy and planted—a heavy bike that rides light and nimble. It is well put together, high marks for fit and finish. Filling it up daily got a little old, but then, it wouldn't be the same bike with a six-gallon tank.

The V9 was just easy. Easy to ride, easy to turn, easy throttle hit. This would be a really good starter bike for someone who is a fan of the transverse-mounted V-twin, which has its own feel, just as the BMW Boxer motor does. Our test bike looked great, was comfortable enough to ride, handled well, but felt underpowered.

The clutch blew on the Harley-Davidson Roadster before I got the chance to bang on it a little. Cool bike, but it wasn't around long, unfortunately. Our guess is that it would have tested well. We keep hearing that clutch issues persist with the brand's non-baggers.

—Russell Evans

INDIAN CHIEFTAIN
ELITE AND LIMITED

If the Indian Chieftain Elite (pictured) and Chieftain Limited resemble Harley-Davidson baggers more strongly than before, so be it. For performance, the brand stands pat on its 111-ci. Thunderstroke engine.

Indian makes overture to custom bagger market

> By **Russell Evans**

Ever since Polaris' dismissal of the Victory brand in December, much of the speculation in the American V-twin crowd has focused on one question: What will Indian do now?

While Papa Polaris determined there wasn't room for both of its offspring in one house, Victory did too many things well to just send everything off to the junkyard. Yes, there is no brand out there more stylish than Indian, with its retro, art deco accents—the swooping fenders, bulging leather, chrome pushrod engine and whitewall tires. But Victory cut its own profile, perhaps as close to an aftermarket custom look as any brand, with its teardrop tanks and low-slung geometry. Now, with Victory out of the picture, the horizon has opened up completely for Indian, sudden endowed with the freedom to do whatever it wishes without fear of stepping on its corporate brother's toes.

So, would Indian fill in gaps in its lineup with certain Victory offerings, perhaps modified to a degree to conform to Indian brand standard? Maybe expand on the Empulse platform. Or, perhaps a new entry, such as a sportbike or a commuter, somewhere between the Scout and Chief. There was also an option to take some of Victory's simpler styling and incorporate it into existing successful Indian platforms.

We didn't have to wait long to learn that the answer is the latter. With its 2017 Chieftain Elite and Chieftain Limited, Indian has pulled back a little on its traditional retro style and made a bold move toward the custom bagger market. The results are stunning. Most noticeable is an overall profile that is sleeker and more trim, drawing eyes immediately to the front fender. Gone is the swooping, hooded fender—the standard Chieftain's most recognizable feature. The clipped fender of the Elite and Limited, though thoroughly modern, actually evokes Indian Chief fenders from the 1920s and 1930s.

The Indian folks are especially excited about the Elite, of which only 350 will be built. With its Fireglow Red Candy hand-painted finish and marble accents, the Elite makes a strong statement. Indian says each Elite paint job requires 25 hours, since no machines are involved. Look closer and notice the more streamlined front fender wrapped around a 19-inch, 10-spoke chrome front wheel. Let your eyes wander up the shapely fairing, to the flared tip of the electronically adjustable windscreen, then back down to the tightly packed, hand-stitched black leather seat, electronic locking hard bags and the 16-inch rear wheel that gives the bike a stance with plenty of attitude. Pricing starts at $31,499.

The Limited has most everything the Elite does with the exception of the premium paint job (the Limited comes in Thunder Black) and premium stereo (a 100-watt system instead of the Elite's 200-watt blaster). It also has a lower price, starting at $24,499.

Both models represent a move toward a more mainstream target, and if they resemble Harley-Davidson baggers more strongly than before, so be it; game on. While Indian executes on styling, the brand stands pat firmly on its strength: the 111ci. Thunderstroke engine, delivering smooth power and gobs of torque. In a daylong tour of San Diego and surrounding countryside, the two Indians performed brilliantly. On a swooping, 10-mile, four-lane uphill grade, both models proved capable of delivering smooth power and precise steering and handling at velocity.

They were just as capable and balanced in low-speed maneuvering. When traffic snarled along the coastline near Del Mar, lowering the electronic windscreen was a thumb's touch. Indian's Ride Command 7-inch infotainment center provides readouts for every detail of the bike's operation, from radio management to route and trip details.

Perhaps the distinctive styling of the standard Chieftain isn't for everyone, and many have thus missed out on the bike's amazing ride qualities. Indian is clearly hoping that these two snappy new Chieftains will entice more of the mainstream crowd to throw a leg over a more visually palatable version and discover all the things that Indian devotees have long known and loved. MCN

KAWASAKI Z900

> By **David Hilgendorf**

The Z900 returns Kawasaki's top naked model to a more raw and refined focus on simplicity and power-to-weight performance.

Kawasaki identified steady sales growth in naked bikes and has put a laserlike focus on offering more performance, lower weight and better handling in the Z series. 2017 models already include the Z125 Pro and Z650 and this all-new addition completes the trilogy. Similar styling cues run throughout the lineup, from the ergonomic layout to the continuation of "sugomi-inspired" bodywork.

The 948cc Z900 is down a notch in displacement from the former top-of-the-line and even more aggressively styled 1043cc Z1000 that it is replacing in the U.S., but it's also $3,200 cheaper. A more direct comparison might be the improvement this new model makes on the 509-pound, 806cc Z800, which is simultaneously being replaced.

Before anyone cries foul of one bike replacing two, they should realize that the 464-pound Z900 is a claimed 46 pounds lighter than the outgoing Z800 and costs only $400 more when comparably fitted with ABS. Riders who want to save more can get the Z900 without ABS for the same suggested retail price as the short-lived Z800 ABS. We are somewhat surprised non-ABS is an option, as the overall platform improvements more than make up the price delta and the bike is a great value for the performance it provides.

We rode the local route out of Kawasaki headquarters, into the local canyons, up the mountain and back to historic San Juan Capistrano, a diverse set of roads on which to discover both the capabilities and possible shortcomings of the bike. The wide handlebars combined with a low seat height and lightweight and narrow chassis made the bike easy to ride aggressively in the twisties, but still very comfortable when upright.

Designed to be "refined raw" (K-marketing), there are no complex technological rider aids like ride-by-wire modes or traction control, but power delivery is also never so overwhelming as to require them. The incredibly smooth throttle response consistently sent exactly the right amount of juice to the rear wheel. The exhaust note is solid, but even better is an aurally engaging intake howl.

An assist and slipper clutch makes for easy bumping through the very short gears and allows quick acceleration. There is a noticeable amount of vibration in the seat, pegs and bars, which reduced to a mild-mannered hum only when cruising in sixth gear, an overdrive for long-distance and high-speed fuel economy. The footpegs are set high, which allows ample cornering clearance, but combined with the low seat results in a more sport-oriented riding positioning that kept my 32-inch inseam folded fairly tightly—not entirely comfortable for long, straight stretches of asphalt. The stock seat height is just over 31 inches and although Kawasaki's accessory seat adds an additional inch of padding, I didn't find it helped much with either leg or butt comfort. Kawasaki reps mentioned that their internal testers were also split evenly on which seat was preferred.

There are many options for bikes under $9,000 and the Z900 ABS looks to be well worth the $1,400 mark-up from the Z650 ABS (MCN 3/17) for riders who desire a back-to-basics performance standard with more legroom, more attitude, more cylinders or more power. We are looking forward to running our full barrage of tests against this bike soon. MCN

DREW RUIZ

LOOKING PAST PARANOIA

AN EX-LAW ENFORCEMENT OFFICER DEFENDS MOTORCYCLE CHECKPOINTS

> By **Jim Halvorsen**

The initial and understandable reaction of many motorcyclists regarding motorcycle-only checkpoints is likely to be, "This is outlandish and downright un-American! Where are my freedoms going? How can this be legal?"

I've been in law enforcement over 30 years, serving with multiple statewide, city and regional agencies. I discovered that none of the traffic-safety grant funding our agency received was earmarked to address the safety of the motorcycling community. Admittedly, we were addressing the causation factors attributed to the most deaths—speeding, alcohol-related crashes and the lack of seat belt use—with great success.

These campaigns used templates of public awareness (education) and enforcement (checkpoints). Total traffic fatality rates dropped year after year. What we didn't notice was that the trend of motorcyclists being killed or injured was rising while overall traffic fatalities were dropping. The trend wasn't addressed until late in 2006, when the lack of motorcycle enforcement was noticed.

Under the Fourth Amendment of the constitution, there is language regarding "unreasonable search and seizure." There is a law that has evolved from this Amendment called, "The Special Needs Doctrine." It is an exception allowing searches without a warrant or probable cause, generally for purposes other than criminal law enforcement, such as airport searches. If the objective is to ensure public safety then, the doctrine applies.

Checkpoints weren't new at the time, we routinely set up sobriety checkpoints for DWI and they were also commonplace for seat belts as well as commercial motor vehicles. A seat belt is a safety device, but motorcycles passing through these checkpoints were waved through. Motorists never cried foul about checkpoint enforcement or brought lawsuits.

Additionally, snowmobiles and boats are routinely stopped because they require special equipment and registrations to operate on public lands and waterways, all without probable cause to make the initial stop. If certain types of vehicles can be stopped without probable cause in the name of public safety and motorcycle fatality and injury statistics are showing an upward trend, then a motorcycle checkpoint is the logical conclusion.

In May 2006, I began to explore ways to address the rising trend of motorcyclists being killed and injured on our highways. Using the template of success from the enforcement of DWI and occupant restraints, we devised a pilot enforcement strategy to determine if our idea could be adopted agencywide. The plan included free inspections of motorcyclist's bikes and gear at rallies, with a gift to the rider for allowing us to check tire pressure, helmets, tread depth, etc. These were nonpunitive ways to have officers mingle with the motorcycle community to address safety.

Additionally, we provided free training to law enforcement, "Taking the Mystery Out of Motorcycle Enforcement," as well as to civic groups, "Your Bike and What Cops Look For," regarding specific laws relating to motorcycles. It was the same presentation and for the first time both sides received the exact same information.

Our pilot program was an overwhelming success. Yet, most of the publicity focused on the checkpoints and a federal lawsuit was filed alleging violation of the Fourth Amendment. The U.S. District Court heard the argument and ruled in favor of law enforcement (Wagner v. Swartz, 1:09-cv-652). On appeal, the U.S. Circuit Court affirmed the lower court's ruling, stating: "In this case, the district court properly found that the motorcycle inspection program satisfies the requirements of the special needs doctrine and is therefore consistent with the Fourth Amendment."

The appellate court, in its brief, further stated, "the program resulted in a significant increase the number of tickets issued for illegal helmets, from 35 in 2007 to 796 in 2008—a 2,175 percent increase. Of those 796 tickets issued for illegal helmets, 365 or 45 percent, were issued at the checkpoints. In addition, … there were 155 motorcycle fatalities in New York in 2009, down from 188 in 2008, a 17 percent decrease."

Motorcycle-only checkpoints may feel discriminatory, but law enforcement agencies say they are legal and correlate with a reduction in accidents and fatalities.

JIM HALVORSEN

As an avid motorcycle rider and law enforcement officer armed with this information and charged with the responsibility to address the alarming trend of motorcyclists being killed or injured in my jurisdiction, checkpoints were the right choice. MCN

DON'T LET YOUR RUMP ROAST

SEAT PADS CAN HELP TO SMOOTH OUT THE RIDE

> Text & photos by **Fred Rau**

There was a time not long ago when the most popular accessory purchased by touring riders was an aftermarket seat.

Motorcycle seats as supplied by the bike manufacturers were woefully inadequate, uncomfortable and downright painful if you sat on them for more than about an hour at a time. For the most part, that has dramatically improved these past couple of decades, as the OEMs wised up and started paying attention to rider ergonomics. In truth, the original problem (at least in the case of larger touring bikes and cruisers) was caused by a sales gimmick: Original equipment seats were built with really cushy, overly-soft padding because when the potential buyer first sat on them in the showroom they felt really good, thus helping to sell the bike.

A too-soft seat will pack down after an hour or so of sitting on it, and also become less comfortable each time you ride. They don't provide the proper support, and as they compress and form to your shape, they also don't allow any shift in your body position. You soon develop pressure points and hot spots, resulting in a phenomenon known among riders as "monkey butt."

When you are seated, two small round bones in your posterior called the "Ischial Tuberosities" are what you are sitting on. They are in fact, known informally as the "sitting bones." If your seat design allows your weight to concentrate too much on these two points, you are going to hurt—period. The trick is to distribute your weight evenly, to support you firmly, and to allow a range of motion without sliding all around when braking or accelerating. It's not as easy as it sounds, but there are a lot of motorcycle seats and aftermarket pads out there that are getting pretty good at it.

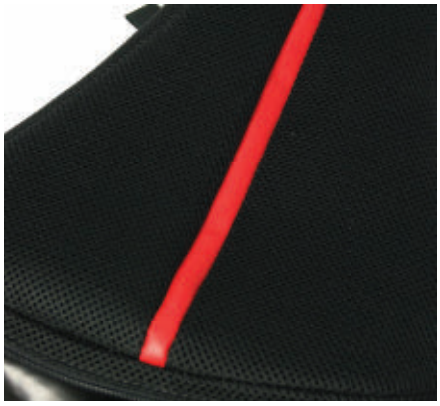
Sheepskin covers are cozy and warm when it's cold and also comfortable when it's hot. Just be sure to get real sheepskin and don't let it get wet. It will stink.

And yet, while seat design has improved dramatically, the truth is that no two butts are exactly alike, and there's a fairly good chance you are going to want or need some kind of modification to your stock unit. Buying a custom-fitted aftermarket seat, designed just for you, is the ultimate solution, but comes at a price—usually $750, or more—making it an option for only the most serious or well-heeled of riders. For most of us, the best option is going to be a seat pad, which come in four basic types: Beaded, gel-filled, sheepskin, and air bladders.

BEADED PADS are both the least-expensive and the least-popular of motorcycle seat covers. Probably because the idea of sitting on a bunch of hard beads just seems so weird. And yet they actually do seem to work, and those riders who use them will swear by them.

The rounded beads are usually made from wood, but sometimes from plastic, strung together with cotton or nylon cord. Basically, they lift your butt a half-inch or so off the seat, allowing air to circulate between the beads. This keeps your butt cooler and allows sweat to evaporate, thus greatly reducing the hot spots and chafing that create "monkey butt." The beads also create a sort of massaging effect that improves blood circulation.

Beaded seat covers are cheap and effective, but not a very popular choice.



An air-filled pad is expensive, but the air pressure can be easily adjusted.

Gel foam pads are comfortable, though they can be a bit unstable while turning.

I could never adapt to a beaded cover, but I wouldn't suggest counting them out until you've tried one. They can be found for around $10-$15, so it might be worth the investment to at least give one a try.

SHEEPSKIN PADS tend to keep your butt cool in the summer and warm in the winter, and they wick away moisture while adding a pleasantly comfortable layer of padding. About the only serious drawback I have found is that the thickness needed to get all the benefits also raises your butt about an inch off the seat. If you are inseam-challenged like me (29 inches), and already stretching a bit to reach the ground on your bike, this is going to cause a problem.

Sheepskins come in a wide variety of colors, shapes and sizes, from a simple throw-over for the rider to fully-fitted covers for both front and rear seats. Make sure you get an authentic sheepskin and not some synthetic imitation. Also, never, ever leave your sheepskin uncovered if it looks like rain. A wet sheepskin is a nasty, ugly, smelly thing.

GEL-FILLED PADS are filled with a visco-elastic polymer gel (sometimes injected into a closed-cell foam matrix) that forms to your butt when you sit on it. Think of those "memory foam" mattresses you see being hawked all over television and you've got a pretty close idea of what we're dealing with. They do a great job of distributing your weight evenly, with the drawback that the gel will tend to shift just a bit when your weight shifts, which can cause a somewhat uneasy sensation in aggressive cornering.

The gel is also great at holding its temperature, which can be either a good thing or a bad one, depending on the situation. If for example, you leave it on the bike sitting out in the sun on a summer day, it is going to be hot as hell when you mount and will stay that way for hours on end. Ditto if you let it stay on overnight and get cold. On the other hand, if you take the pad into your hotel room on a cold night and warm it up, it will keep your butt toasty warm for hours into the next morning's ride, and vice-versa for putting it in a refrigerator the night before a hot ride through the desert.

If neither of those situations appeals to you, the temperature factor can be greatly reduced by buying a gel pad with a waterproof and insulated cover, readily available from the manufacturers. Here again, I personally have a problem with how high the gel pad raises my butt off the seat, particularly when used with the aforementioned cover.

AIR-FILLED PADS are, in my opinion, the best of the lot, but they are also the priciest. The technology was originally developed for hospital beds, to prevent bedsores, and consists of a bladder of neoprene rubber shaped into dozens of little square cells, sort of resembling an egg crate. The space between the cells allows for air circulation, while the cells themselves provide the support.

The amount of support can be adjusted simply by blowing more air into the pad through a valve, or letting some out. That way, you can fine-tune the pad to your own personal comfort. The trick is not to inflate the pad too much, but to find a "flotation level," where your butt is barely suspended less than a quarter-inch above the seat. This will provide maximum support and weight distribution without the uncomfortable floating effect received when over-inflated.

The only drawback I have found is that like most inflatable products, sooner or later the pad will develop a leak. But in all honesty, I have had them last for more than 50,000 miles of riding before that happened. A good air pad, like my personal favorite, the Airhawk, will set you back around $120, but in most cases, it is worth every penny.

GOOD TOURING PADS should have firm padding that offers both support and a limited range of movement. They should be sculpted into a shape that provides adequate support for your back and buttocks, narrowed at the front to allow legs to drop more-or-less straight down when at stops. If pads are raised too much on the sides, or have any kind of a hard edge where your thighs cross over, it will restrict the blood flow to your lower extremities. A condition that will become painfully obvious when you step off the bike after riding a few hours and find that your legs and feet have gone numb.

There are myriad combinations and hybrids of the pads described, such as gel pads with air bladders underneath, sheepskin-covered air pads and even gel pads with wooden beaded covers.

Unfortunately, this type of accessory really needs to be ridden on for several hundred miles to determine which solution best suits each rider's particular needs and comfort. MCN

Those who take on the Backcountry Discovery Route in Colorado are treated to incredible vistas, many of which are not available to the four-wheel public.

ROCKY MOUNTAIN HIGH (AND LOWS)

THREE INTREPID WOMEN TAKE ON COLORADO'S BACKCOUNTRY DISCOVERY ROUTE

> Text and Photos by Alisa Clickenger

On most motorcycle trips it, does not take six days to ride 675 miles. Then again, the Colorado Backcountry Discovery Route, or COBDR, is no ordinary trip.

"Road" is a loose term for the collection of forest roads, rutted two-tracks and rocky paths a large portion the BDR traverses across Colorado. The BDR's claim that it sends dual-sport motorcycle riders through some of the "most dramatic and rugged landscapes in Colorado" is no exaggeration. Each of its two-wheeled challenges rewards success with breathtaking scenery, combined with epic bragging rights.

With Pat aboard her KTM 1190 Adventure R, Cindy on her BMW F700GS and me on my 1998 Suzuki DR350 SE, we began our journey well past 11 a.m., due largely to my

A water crossing early in the trip provided an excellent photo opportunity as well as a glimpse of the type of diverse terrain ahead in the 675-mile trip across the Rockies.

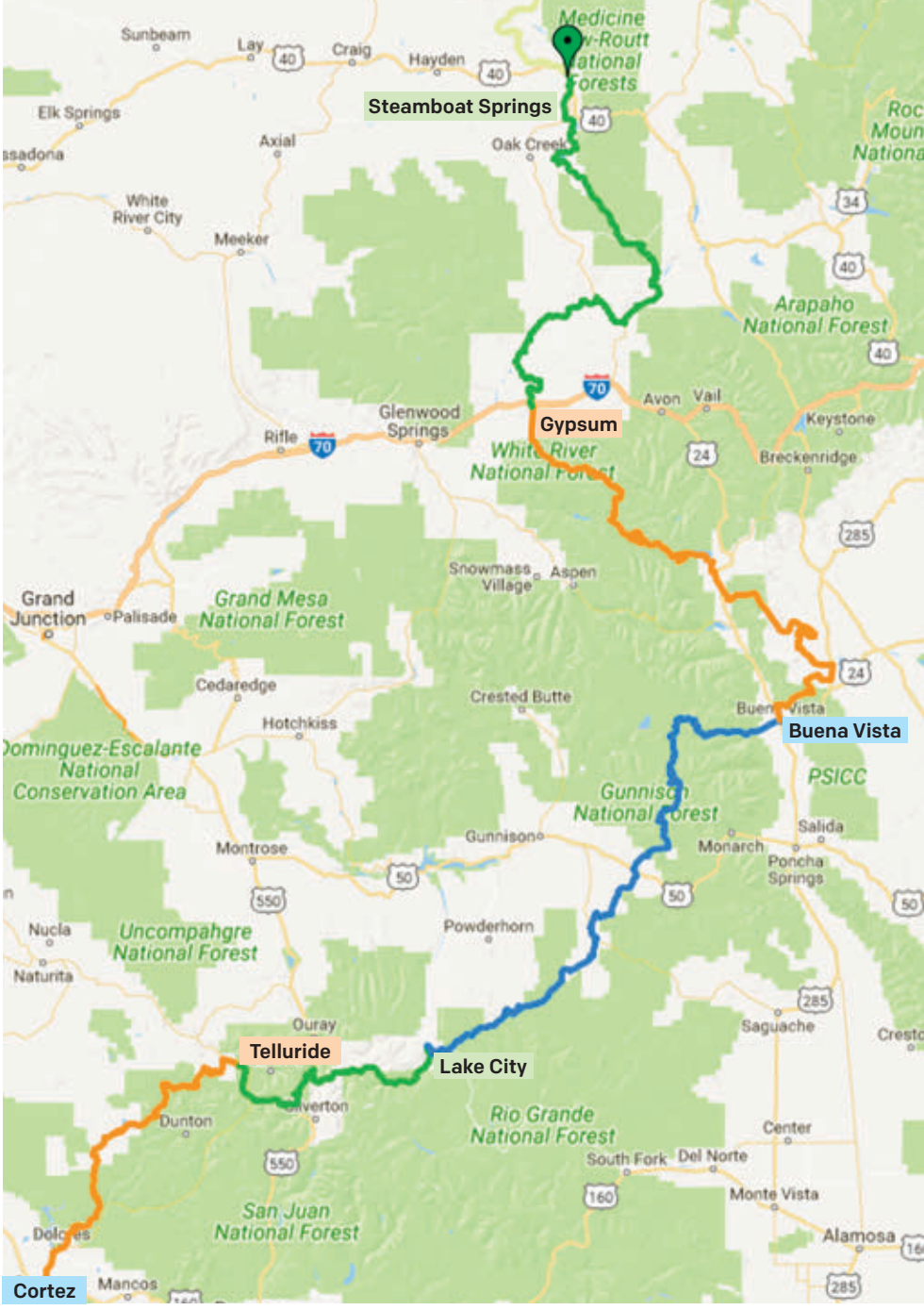
warm-blooded Californian sensitivity to a near-freezing morning. We'd start in Granby, Colorado, rather than at the Wyoming border, where the BDR officially terminates at Highway 70. I'd repacked my duffel bag and done a last-minute oil change on the DR350. My delaying failed to raise the mercury even close to my liking.

An hour down the road, Pat pulled me over to ask if I am comfortable riding more than 50 miles per hour. "Yes I am," I said, knowing my bike's top speed is not even one-third of hers. "Unfortunately, my little thumper screams at me if I go any faster with this current sprocket combination." In order to give my little adventure bike more low-end grunt, I opted for a 14/48 sprocket setup, which effectively annihilates any attempt at posted highway speeds.

I saw Pat digest this unpleasant information. Rather than lose her patience, Pat returned to her house to reload the alternate BDR tracks on her GPS while I moseyed on down the road, with Cindy for company. I soon forgot all about the sprocket issue. Reaching the far side of the first major mountain pass, my bike began to sputter for lack of fuel. We pulled over and let the backed-up traffic whiz by while troubleshooting the problem.

Disconnecting the fuel line, I discovered that I was getting no fuel from the petcock, unless it was on reserve. So, we continued down the road on reserve hoping fuel would continue to flow freely. I called Pat on the telephone. She would have extra fuel when we met again in Steamboat Springs, just in case.

I should probably confess that we chose to ride the COBDR in highly unusual fashion; reverse, north to south. We were also planning to lead a group of ladies over this course next summer, so we actually traversed the route three times. The first pass on the main route, then returning to the starting point and riding the "Alternate Easier Route," as indicated on the BDR map. This made for some long days in the saddle, and effectively tripled our daily mileage from what was indicated on the map.



SECTION 5:
STEAMBOAT SPRINGS TO GYPSUM

Pat met us in Steamboat Springs. We gassed up and finally got on the trail, hours later than we knew we should. The trail took us down some mellow dirt roads, the three of us still dialing in for a week's rhythm of riding together. In short order, the route threw a fun water crossing at us, and we played in the axle-deep water, photographing each other as we crossed.

Pumped for our adventure and now damp, we wound up and over Gore Pass, spreading out and going fast. We dropped down at State Bridge, where we took a 5 p.m. munchies break, then remounted, following the mellow dirt roads and a little bit of pavement, as dictated on the map. There's a choice at Trail Gulch: Turn left off the highway and follow the unpaved main route or ride 25 paved miles to Gypsum. There was still some light, so we opted for the adventure.

The first 2 miles were easy two-track, but suddenly we were engulfed in a silt-storm. Cindy heroically followed Pat, slowly losing speed as the powder, as well as the night, conspired to keep those trailing from seeing anything. I was in the rear, with the fine talcum

Even when pounding out the miles at higher speeds on smooth, maintained roads, there was always a risk of running into cattle, moose or other wildlife.

powder invading every available orifice in my helmet and open vent in my riding suit. I was no longer having fun on my 350. Then I imagined how much worse it was for my friends on bikes that weigh many more hundreds of pounds, so I muscled through it.

The dark, moonless night had set in. It's surreal riding the severely rutted course in darkness, with only inefficient OEM headlights to guide us between the ruts and through the billowing clouds of powder. Pat was way ahead, giving us a reprieve from her cloud-inducing KTM, so she didn't see Cindy go down once, then twice, but she did witness the third time.

Cold, tired and with exaggerated politeness, because it would be easy to get upset, Pat offered to ride ahead and ascertain just how much of this stuff we still need to traverse. Cindy and I waited with our bikes in the dark until she returned. The good news was we were finally beyond the silt. The bad news was ruts were just beginning, and continued for at least the 5 miles Pat had scouted ahead.

It was slow going, but we finally made it to easier terrain—two-track transitioning to regular gravel roads, which led us down the mountain and into Gypsum. We didn't see any hotels, so we took the highway 10 miles up the road to Eagle, where the first order of business was food. The waitress informed us they were cleaning and we could not eat inside, even though they didn't close for nearly a half-hour. We made it clear that we will, in fact, eat indoors, instead of outside in the cold parking lot. This required a full measure of dirt-laden, badass-in-boots charm. Afterward, fixing my plugged petcock didn't merit discussion, as we checked into the hotel after 10 p.m.

The following day, I realized the destination was named Gypsum, which made perfect sense in daylight.

SECTION 4: GYPSUM TO BUENA VISTA

I ran out of gas a mile from the gas station. Luckily, my aftermarket tank has its own type of reserve. I leaned it way over and let the fuel slosh from right to left—voila! I added 10 miles of range. Refueled and knowing that Hagerman Pass was on the day's agenda, we chose pavement over the silt road back to where the route divided.

It was an interesting morning of narrow logging roads and forest trails, most of which are severely rutted. I was having a blast on the small bike, knowing that if I'd opted for my KTM 950 on this trip I would not be quite so cheery about it. We passed several hunting camps deep in the forest, as well as a small group of people winching a four-wheel drive up a steep hillside. On the narrow road, we got around a tow truck headed to help with another disaster, then roared through the rest of the forest on easy gravel roads.

We parted ways with Cindy at Sylvan Lake State Park. She'd take the long way around on pavement and meet up with us in Leadville while Pat and I summit Hagerman Pass. As I bounced up the steep path of embedded baby head boulders, which alternates with loose scree, it became more of an effort to cajole my jetted-for-sea-level DR350 up the mountain. I gave up on good riding form and just hung on and hoped my bike would make it up and over. At the top of the pass, we met a group of riders headed in the opposite direction. They marveled at Pat's choice of motorcycle. She laughed. She handled the 1190R better than I did the 350.

We descended the mountain in the late afternoon, counting our blessings that we were lucky enough to not meet an afternoon thunderstorm. We rolled into the historic mining town of Leadville too late to continue on to Buena Vista. Cindy arrived shortly after and she and Pat headed off for dinner. I did some scouting around town, sourced a hotel, texted the address and ate dinner next door, alone.

Tuesday morning, it was too cold to ride. So, we used the time to troubleshoot the fueling issue on my DR350. I parked the bike in the sun behind the hotel and removed the fuel tank. The plan was to drain and strain the fuel, clean the petcock and cross our fingers that it would resolve the starvation.

The solitude was both cleansing and, at times, a little spooky. Some stretches were like riding on the moon.

I discovered there was one essential wrench I failed to bring. Pat saved the day with her tool kit.

We rode up Independence Pass, which was paved, so we spread out and tacitly agreed to regroup somewhere down the road, enabling each of us to soak up the beauty of Colorado at our own pace. At 12,095 feet above sea level, I glanced in the mirror, immediately whipping out my camera to snap a shot behind me. In all of my adventures, it's the only time I have held up an RV.

On the other side of Independence Pass, we were back on two-track again. We moved fast on wide gravel roads through the White River and Pike-San Isabel National Forests. I selected a pit stop with an immense view, and the ladies rode on ahead. Later, I met a moose, directly in front of a moose crossing sign. I feared I couldn't stop fast enough to capture the magical moose moment, so I continued with the memory and without the photograph.

We were concerned about a sandy and difficult OHV area outside Buena Vista, but, in a testament to how varied conditions can be in these parts, we had no difficulty at all. At the Twin Lakes General Store, we split up for a few hours. Cindy and I heard hot springs calling, while Pat opted for riding a mapped trail that has continually bewitched her.

We headed straight to Cottonwood Hot Springs, where we scored the last available room and got to relax and soak. A big hot springs fan, I thoroughly discharged the last few days of stress and travel. A good Samaritan brought us dinner from town so we wouldn't have to suit up and ride again. It wasn't until well past dark and raining that Pat found us. She had an epic day of adventure and exploration, but still had not found the elusive trail she sought and had to backtrack her entire route.

When the sun is warm and the road is smooth, you're reminded why you made the trip. Then, sometimes, there's catastrophe. A pothole bent the rim beyond repair on Cindy's BMW, ending her ride.

SECTION 3: BUENA VISTA TO LAKE CITY

From Buena Vista, we deviated from the COBDR route and chose our own adventure. We needed to find an acceptable alternate route for our group, as Cottonwood Pass was scheduled to be paved the following summer.

We took the highway south for a bit, then turned off to ride the gravel roads over Old Monarch Pass. Here, we met up with six riders. Pat and Cindy wanted to chat, but I wanted to ride. I took off before the others and went it alone, hard and fast. Cindy eventually caught up and

Nearing the end of the journey, we cut across Ophir Pass, watching for falling rock on the right and avoiding a dangerous dropoff on the left.

pulled me over to view the Saguache to Lake City Toll Road sign, which marks a tolled wagon road from 1875.

We lunched at Donough Reservoir and enjoyed the simple luxury of sitting at a picnic table. We eventually rolled into Lake City with enough time to do some scouting and have dinner at a normal hour. However, breakfast the next morning was a problem. Lake City has 10 great choices for dinner, but only two for breakfast, narrowed down to one for those who don't want takeout. Every tourist on earth was in line ahead of us. Yet again, we got on the road later than we'd have liked.

SECTION 2: LAKE CITY TO TELLURIDE

Travel was fast and easy on the gravel roads leaving Lake City, and we took the opportunity to try to reel in some lost time. But alas, Cindy hit a sizable pothole and the cast aluminum front wheel on her F700 GS was damaged beyond repair. Cindy's time riding with us was over. Cindy transferred her SPOT tracker and GPS to me, making me the 'lead' rather than the 'follow.' Pat and Cindy said goodbye and rode back to Lake City with a dance of pump air and pray. Once Cindy was settled, Pat would figure out her next move.

I suspected Pat would make sure Cindy was safe, then haul ass to catch up with me. She was hoping to ride fast the entire trip and Cindy and I had been holding her back.

It seems on every group trip, there is a period of time when I am left to my own devices, and I don't mind. I was overjoyed that I was able ride on my own, at my own tempo, without a care in the world other than staying on the GPS track. I confess to rather liking challenges in which one cannot see the outcome, but can be confident everything will work out. The best part was that the day's ride plan covered the trifecta of Cinnamon Pass, Monarch Pass and California Pass.

I had ridden these passes several years ago, the same summer I rode both the Trans-America Trail and the Continental Divide Trail. I was on a DR350 back then too, but eight years prior, I was new to dual-sport riding and these passes were quite a challenge. This time, I was relaxed and confident. I enjoyed the scenery and filled my SD card with photos.

At the top of Corkscrew Pass, Pat caught up with me, and we discovered the downhill turns were slick and treacherous from prior rain. I eventually got into the rhythm of the switch-

backs, though became a bit dizzy from intense concentration and altitude.

We were directed to the Million Dollar Highway. The GPS tracks we followed led us onto dirt bypasses. We saw many travelers, groups of two to five bikes, a veritable superhighway of BDR riders using the same GPS tracks, but headed in the opposite direction.

We had been talking about the spectacular Ophir Pass, and weighing the optional and monumental go-around that the alternate route follows. There is a mile of road cut straight across a steep, rocky mountain slope, with only two tracks. The right, uphill side is strewn with rocks that have rolled down the steep slope. The left track has less debris but skirts the ledge. I feared a slip of the front tire and the resulting thousand-foot drop. All went well and I lived to ride the rest of the pass which, in retrospect, seems remarkably easy.

Telluride was hopping with a summer music festival, and lodging was scarce. Our singular option was to rent an overpriced, posh condo in the Mountain Village, with a gondola whizzing by every minute or so.

SECTION 1: TELLURIDE TO CORTEZ

My chain was loose—flopping, skipping and derailing—so the first order of business was to tighten it. That was when I discovered that I had packed an axle socket for the 950, not the 350. The new first order of business became getting myself to a hardware store to buy the right tool. We detoured to Ridgway to make the repairs.

Pat and I then headed back to ride the alternate route around Ophir Pass. We rode roughly 150 miles—twice—just to see what the alternate routes looked like. Owl Creek Pass was one of the loveliest roads I've ever ridden. Though Big Cinnamon has lots of loose gravel, we were able to maintain a constant speed at about 50 mph.

We skipped an expensive second night in Telluride and instead detoured even farther north, to Montrose, where one of Pat's friends hosted us for the night. He is remarkably knowledgeable about riding every inch of the Colorado backcountry, and the evening was delightful. We went to bed very late, got up very early, and once again headed to Ridgway, where I had to tighten my chain yet again. Once there, we met up with another of Pat's friends, who would ride with us all day.

Realizing this was my last day riding with Pat, who happens to be a motorcycle instructor, I asked her to step up my riding lessons. Riding through the San Juan National Forest is alternately open and narrow, and was a good place to cement my new skills. Pat drilled me on slow, tight turns on gravel. It is a skill I rarely practice, but handy to have mastery of.

As we came to the end of the Dolores-Norwood road, we saw a large felled tree smoking from being part of a bonfire. A quick survey of beer bottles, stray clothing and a baggie of marijuana painted a clearer picture. Knowing we're at the edge of civilization, we used the last of our water to staunch the fire as best we could, but the tree smoldered on.

We marked the spot on my GPS, and after entering Dolores, we headed straight to the Ranger office to report the fire. We gave the rangers the GPS coordinates, along with the rest of the goods found on-site. We also alerted them to folks in a Ford Fiesta who would most likely be in need of rescue services very soon—not BDR worthy.

From there it was pavement to Cortez and beyond, to Four Corners, where the COBDR officially starts—or ends, depending on your direction of travel. The states of Arizona, Colorado, New Mexico and Utah come together at this point, and the Navajo Nation maintains the monument as a tourist attraction. If you weren't convinced that conquering some of the most rugged and spectacular mountain passes in Colorado has earned you plenty of bragging rights, this iconic landmark is one last photo op.

Or, you can fill up your tank, turn your motorcycle around and set out on a new Backcountry Discovery Route. There are several that run north and south, through eight Mountain States in the U.S. MCN

WHEN YOU'RE READY TO GO

Free information, including interactive maps and GPS downloads for all of the Backcountry Discovery Routes, is located at *ridebdr.com*. Butler Maps sells an essential waterproof, tear resistant physical map for $14.95, along with an informative DVD for $24.95.

The maps are loaded with information such as notes on each day's routes as well as packing and travel tips. You can purchase your well-deserved post-BDR bragging rights memorabilia, such as T-shirts and pannier stickers at *Touratech-USA.com*.

SAFETY TIPS

The ideal time to ride the COBDR is June-September. Thunderstorms are a very real threat in this part of the country, so get your riding done in the mornings so you're off the high peaks in the afternoons.

The COBDR hits elevations of over 12,500 feet, so be mindful of altitude sickness, which is very real and affects each person differently. We recommend carrying a Benchmark Road & Recreation Atlas for granular detail on alternate routes, in addition to official BDR maps.

People ride in from all over the country—even from outside the country—to take in Allan and Debbie Johncock's Lone Star Motorcycle Museum in south Texas, home of 60 bikes of historic interest or emotional attachment.

SHINING STAR

LONE STAR MUSEUM IS A MOM AND POP BIKE HISTORY SHOP

> By **Giles P. Lambertson**

The Lone Star Motorcycle Museum is not really an official museum. It is actually a big room where Allan Johncock has parked 60 of his favorite vintage two-wheelers and has invited friends over to see them. There are no roped-off display areas or piped-in melodies, and visitors are free to touch. They stroll the black-and-white checkerboard floor, feeling the leather on old Indians, testing the spring of an Ariel, gauging a 100-year-old Royal Enfield—while a racing video plays on a nearby screen.

Allan Johncock has ridden most of the bikes in the room and raced three of them. A wall photo shows him leaning through a Daytona turn in 1999 on a 500cc Matchless G50. For a decade, he was a regular Top-5 finisher in races, never a champion but always a contender, his last race coming in 2007, at age 65.

Allan and Debbie Johncock have been married for 47 years, but have a love for motorcycles that goes back even further.

With a welcoming front porch and relaxed atmosphere, the more apt description of Johncock's museum might be "showroom." How the Lone Star showroom came to be in Hill Country west of San Antonio, Texas, is an international story. Johncock left his native South Australia at 22 and went to Houston to seek his fortune.

He was already a motorcycle rider and had owned several bikes. He broke his leg on one. In Texas, he first pursued a career as an electronic control systems technician and then went after a 19-year-old Texas girl named Debbie. He was successful in both pursuits: Johncock and wife Debbie this year celebrate 47 years of marriage—including many days together on a motorcycle.

In 1998, the couple moved to a 130-acre property in Hill Country between the unincorporated hamlet of Vander-

LONE STAR MOTORCYCLE MUSEUM

pool and the entranceway to Lost Maples State Park. The Sabinal River flows past their back door and one of the fabled hills rises on the stream's far side. Two years after moving in, they erected a low-roofed steel building on a corner of the property to store his motorcycles. In 2002, they turned the building into a weekends-only museum, a la Field of Dreams—if they built it, the bikers would come.

"They come from everywhere," Johncock said. "They find it on the internet. We had a couple the other day from Ireland. We've met a lot of interesting people." Riders from Mexico are not uncommon.

"We have tons of friends around the world," Debbie Johncock said. For a decade, she nourished those friendships in her museum café. Her specialty: Australian meat pies. When she finally tired of weekend work and closed the café, hungry bikers were disappointed, but kept coming. On a recent day, nine motorcycles from Houston rumbled up at 10 a.m. Riders waited for the gatekeeper and then rolled through the gateway, swung around to park in front of the porch that is topped by a lone red, white and blue star. They removed their helmets, and strolled into motorcycling nirvana.

Local highways, dubbed "ranch roads," mosey up and around the hills in spectacular fashion. Roadways are marked by 15-mph switchbacks, sunken low-water crossings, rollercoaster hillocks, sweeping climbs and swooping descents.

The Johncocks have ridden these roads, of course. They may not be more memorable to than other rides across the U.S., Mexico, Europe and New Zealand, but the Hill Country roadways are legend to Texas riders. Since 2002, the Lone Star has enhanced the legend.

Many of the museum's motorcycles come with stories. For example, that 1954 Vincent Black Shadow over there? Debbie Johncock rode many a mile behind her husband on that bike, which was billed as the most durable and fastest production motorcycle in the world. It boasted an engine suspended from above rather than bolted below and aluminum-alloyed framework. Johncock personally attests that the hand-assembled British cycle would reach 100 mph in third gear.

He put 36,000 miles on the museum's 1948 Vincent, 880 miles of it on a daylight "Summer Solstice" run (with Debbie following behind in a pickup). On that endurance ride, Johncock broke the monotony by riding sidesaddle, 100 miles this side, 100 miles that side, not something he recommends to a new biker. "Or an old one," he said.

What about that 1938 Brough Superior, another English bike? Johncock bought it at auction 30 years ago. It was on a Brough that T.E. Lawrence, otherwise known as Lawrence of Arabia, died in 1935 in a riding accident. (Check the 1962 film to see if moviemakers used the correct model in the opening scene.)

The 770cc V-twin 1916 Royal Enfield is with sidecar. Next to it sits what appears to be a small snow blower, but is a Royal Enfield-produced lawn mower from the 1930s. A museum visitor one day offered Johncock the lawn mower as a companion piece to the exhibited Enfield cycle.

Johncock's curating philosophy is that many motorcycles are interesting but not all are worthy of display. The Aussie is British-centric in his collecting and he picked up a third of the bikes in Australia years after emigrating. The Enfield, though, was acquired in England. He has just one Honda on the floor—and it isn't the Goldwing on which he and Debbie clocked 60,000 miles.

Inside the Lone Star, visitors are free to touch the bikes on display and do it with a natural respect for such a pristine collection.

Johncock looks around the room and counts four Triumphs, four Vincents, four Indians, three Harley-Davidsons, two BMWs, 10 Nortons, and eight BSAs. A stroll around the room also reveals several Ducatis, a 1961 Velocette "Venom," a 1958 Ariel, a 1920 Douglas, the Daytona-raced Matchless and a French Soyer. Also on display are a couple of classics Debbie personally coveted—a 1960 Cushman Eagle scooter and a two-wheeler for which the turn "motorbike" truly fits, a Whizzer.

Each machine was either restored or tuned up to runnable condition in a windowed shop area at the rear of the museum floor, where Johncock and several volunteers still work one day a week. Another volunteer opens the museum on weekends. "I have all the help I need," Johncock said.

The museum is a viable concern now, but Johncock is uncertain what will become of it. He can't imagine selling the bikes. When the Johncocks are ready to give it up, several acquaintances have offered to operate it intact. That is good news for the museum's 700 holders of lifetime memberships and the groups of bikers who annually roll into the graveled parking lot.

Johncock has been slowed in recent years by amyotrophic lateral sclerosis—a debilitating muscular condition, but still rides a motorcycle with a sidecar. In early October, the couple headed off with friends on a traditional long-distance ride, a continuation of a lifelong pleasure.

"We always have been motorcyclists, not baggers," Johncock said. "We just ride." MCN

LONE STAR MOTORCYCLE MUSEUM; RUSSELL EVANS

DEBBIE EVANS

OPENING THE DOOR FOR STUNTWOMEN

Debbie Evans' performing career began as a sideshow act at Supercross events, above. She went on to Hollywood fame and won seven Taurus World Stunt Awards, below.

Top, Evans was inducted into the AMA Hall of Fame in 2003. She doubled, unhelmeted, for Trinity in "The Matrix Reloaded."

> Text by **Joe Michaud**

It seems that Debbie Evans Leavitt, one of Hollywood's foremost female stunt performers, was destined for motorcycle greatness. Her father, Dave Evans—who appeared in the movie "On Any Sunday" doing a mile-long wheelie down a dirt road—was a sponsored District 37 enduro rider for Ossa and Montesa in California and got young Debbie riding at age 6. She learned well enough to earn a third place Trials trophy at 9. The family rode every weekend, and Debbie worked her way up through the Amateur classes, earning a Yamaha sponsorship at 15, then turning Expert at 17. She broke into show business travelling the country, performing exhibitions at Supercross and Camel Pro Series events. She built a reputation as a girl with excellent bike control.

As a college student, Evans got a chance to do some stunt work for the film industry and found she loved it. Competition took a back seat and her new career was formed. Her stunt work has been seen in more than 300 films and TV shows, including "*The Matrix Reloaded*" and the "*Fast and Furious*" franchise.

She was inducted into the AMA Hall of Fame in 2003 and has won seven Taurus World Stunt Awards. She paved the way, along with her sister Donna—also a stunt performer—for women to enter the male-dominated stunt world.

At age 59, Evans is still working, still taking a tumble on camera for Hollywood starlets. Seems it's a role she was born to play. **MCN**

DEBBIE EVANS LEAVITT COLLECTION

Q&A

WITH **DEBBIE EVANS**

Q: When you started, there was no class for women in National Trials. Was it difficult to gain respect or even compete equally against the guys?

A: If you're a competitor, you don't think of yourself as different. I rode against the best when we were in the kid's class. I beat Bernie Schreiber (the only American World Champion), Danny LaPorte, Jeff Ward and Brian Myerscough. I beat them all. My dad tells a story about me passing some guys who were riding slowly on a difficult single-track enduro called the "Little Toughie." I passed them all by riding off the track in the rocks. Dad said one guy threatened to sell his bike after being passed by a girl.

Q: Riding requires maintenance, especially on dirt bikes. How are you as a wrench?

A: Early on, my Dad put me to work on my own bikes. My first bike was a basket-case Honda 55cc step-through. I was out there in the garage putting that thing together when I was 8 years old. I always carried a plug wrench to clean out my own plugs. My dad always said, 'Anything a boy can do, my girls can do.' And we could.

Q: What about the stunt work? What got you started in that?

A: I saw a TV show with some stunt work being done by a "woman" although obviously it was a guy. I figured I could do it better, but it's difficult without connections or a Screen Actors Guild card. I got my first break at 19 from Gene Hartline, an ex-flat track racer and stunt coordinator. Gene needed a girl to jump a 30-foot ravine for "Death Sport," a B-film by Roger Corman. Well, Gene was a friend of Art Barda, another flat track racer who happened to be my father's sponsor at Montesa USA. Art knew what I could do and told Gene to call me. I did the jump and got to work on that film for several months. That got me started.

Q: Stunt work is dangerous. Have you had many injuries or close calls?

A: Well, I always broke the stunt work down into sections, much like a trials section requires. If you plan ahead, have some inborn skills and can react quickly, it's fun. Planning and safety aspects are well thought out but mistakes can happen. I got hit by one of the cars in "The Matrix Reloaded" freeway scenes. I was burned crashing my motorcycle through a wall of fire in "The Jerk," a Steve Martin film. I got hit by a car while riding a motor scooter doubling Zooey Deschanel in "Yes Man," in 2007. It took a year to recover.

DEBBIE EVANS LEAVITT COLLECTION

Left, Evans placed eighth out of 42 entrants in the 1998 "unofficial" Women's World Trials Competition. Below, 15-year-old Debbie, and father Dave on a pair of Ossa trials bikes, circa 1973.

Q: Do you still ride? Do you miss competition?

A: We used a Ducati 996 for "The Matrix Reloaded," and after the film was done, the directors of the film gave me a new 996. Between my husband and me we have probably 30 bikes. I like the new Triumphs, I have a 2006 Bonneville and (husband) Lane (Levitt) has a 2014 Thruxton. I got a new GasGas Trials bike for the 1998 "unofficial" Woman's World Trials Competition. I placed 8th out 42 entrants from 12 countries. If you doubled the winner's age, she was still younger than me.

Q: What are your plans for the future?

A: As long as my reflexes are good, I'll keep going. As long as I love what I'm doing and people keep calling.

The classic example of motorcycle customization: the chopper, immortalized in the 1969 film "Easy Rider." It reflected a revolt against the establishment—both government and commercial.

BONHAMS

PERSONALIZATION OR EXCESS?

THERE'S MONEY TO BE MADE IN CUSTOMS, ACCESSORIES

> By **Glynn Kerr**

The title that naturally suggested itself for this article was 'Customization.' But for those of us who grew up with the image of Peter Fonda and Dennis Hopper crossing the United States to do whatever it was they crossed the U.S. to do, that word carries some immediate connotations. Wildly extended forks, banana seats and peanut tanks have been irrevocably burned into the brain cells whenever the word 'custom' crops up. But that's just one genre. Across the spectrum of categories, the desire to personalize our rides is a natural phenomenon, whether that's to improve its function or looks, or just to put our individual stamp on it.

This desire has been increasingly recognized by manufacturers as a lucrative sideline, to the point where some bikes are developed for that very purpose. A sort of self-propelled Christmas tree, on which to hang all those attractive baubles. Whether in chrome, carbon fiber (either real or in 'carbon-look'), or billet aluminum, we just can't stop ourselves from lavishing our two-wheel mistresses with all those off-the-shelf goodies. And the manufacturers, along with after-market suppliers, are more than happy to take

our cash to feed our addiction. Rumor was that Harley-Davidson made higher profits from its merchandizing than its motorcycles, although if so, it probably depends on the year in question. Either way, aftermarket sales are now a major part of many manufacturers' balance sheets.

A reader wrote asking for some general design pointers on modifying motorcycles. While there is a general consensus of opinion as to what constitutes beauty—without which I and the editor of Playboy would be out of work—individualization is quite the opposite. When beauty is in the eye of the beholder, or in this case, the builder, whether others see them as inspired or certifiable is irrelevant.

Our freedom to modify our vehicles feels a basic right, although the ability to do so depends on where we live. In Germany, any modifications have to meet with TÜV approval, be registered for that particular vehicle, and entered on its title, all of which tends to discourage one-offs. It's not impossible to get hand-built vehicles registered there, but it takes a lot of perseverance and a healthy bank account. In California, there are plenty of regulations too, but they are generally overlooked. Some of the road-going vehicles here would have the owner arrested on the spot in Germany.

Taking the subject objectively (if that isn't a contradiction in terms), it seems personalization can be addressed in three ways. First, there's the add-on philosophy. Gold Wings and Electra Glides are typically the magnets for this school of thought, being heavy and complex enough to take a few dozen extra lights, and whatever chrome embellishments the owner fancies, without grossly affecting the performance or handling. This tends to be an American thing, although not entirely. In England, the Mods covered scooters with as many mirrors as they could fit. It was a statement of cult membership and group rebellion against established values. They did it because they could, which is fine. But there's absolutely no advice a designer can give to this whole group. "Try not to overdo it" might be the logical recommendation,

SOTHEBY'S

Individualization spread to Great Britain, with the scooter accessorization craze.

except that overdoing it seems to be the whole point.

Then there's the replacement mindset. Here, stock parts, however adequate for the job, are just not as refined as some of the trick, over-the-counter alternatives. Sometimes deliberately so. The range of upgrades on display at the Milan EICMA for Triumphs and BMWs was mind-boggling. But this isn't limited to European models. The first thing most Harley owners do right after purchase is swap out their exhaust system, preferably for something louder. Some of these actually produce poorer performance over the stock items, but try telling that to the owner who's just shelled out 10 percent of his bike's value to throw away a perfectly good exhaust system. Hey, if it's louder, it has to be faster, right? Design advice here is, again, minimal. Just keep track of the total spending, as it quickly mounts up, and you're unlikely to see a dime back on the resale value. The person who buys it next may not share your tastes.

Finally, there's the minimalist, 'less is more' school of thought. Anything that doesn't have a function, and some parts that do, are slung in the dumpster in the name of weight reduction, and an illegal-looking, pared-down appearance. Racers did it for power-to-weight ratio, and bobbers did it to full-dress tourers because it looked cool—and created the whole custom craze in the process.

Design tips? Not many. If you're into this direction, there's not much you can do wrong (unless you live in Germany, in which case having a good lawyer might be prudent). If we're talking scramblers or cafe racers, keep the visual weight in the center, and minimize any overhangs. This means headlights and any fairings should be small and light-looking, Same at the rear with mudguards and lights. Shorter seats look better than long ones for the same reason, but that's a compromise on function. If you carry a pillion (or four and a box of live chickens in India or China), a short seat is going to be challenging.

Coloring is important too. Mudguards and other components painted body color will extend the perceived length of the bodywork. In black, silver or chrome, they become mechanical parts. This can be deliberately manipulated to give sports bikes a frontal emphasis (coloring towards the front) and custom bikes a rear emphasis (coloring towards the rear). For the classic British look, no coloring at all gives a strong, mechanical impression. Nothing looks better than a polished alloy tank.

Being something of a purist, I like to keep my bikes fairly stock. That may be partly down to Scottish ancestry, who aren't known for having a spendthrift attitude. But more likely, it's from my day job. When you spend months, if not years, battling against the odds and the corporate bean counters to get a design as perfect as possible, it can seem a sacrilege when an owner decides to paint stripes all over it, or add an ugly fairing. And as a hobby-restorer, the goal is to return a bike to its absolute original state. Many of my fellow Californians have a different slant on that, but older vehicles are also pieces of history, and I feel that preservation is obligatory. Escalating values for historic vehicles are pushing the argument in my direction, but then what is highly collectible today was often perceived as just old junk at some point, with little concern for preservation.

Then again, I've always fancied taking a Guzzi T3 and building a cafe racer out of it. So maybe I'll catch the bug too—and start behaving like a real Californian. MCN

FINAL DRIVE 101 PART 3

SHAFTS: THEY'RE NEARLY MAINTENANCE-FREE, BUT NOT QUITE

> Text and photos by **Kevin O'Shaughnessy**

Shafts are most often found on long-range, touring-type motorcycles and have several advantages, such as durability and low maintenance.

Shaft drives have been around on motorcycles since the 1920s, at which point BMW began use of an exposed shaft drive on the R32. Later, this was replaced with an encased shaft and evolved into linked dual lever systems.

The drive shaft on a motorcycle is directly mounted to one side of the wheel hub. On these systems, the output shaft of the transmission faces back toward the wheel. The shaft connects to one or two U-joints and supplies rotational force to the final gearbox. The gearbox consists of a pinion gear and ring gear to change the direction of rotation and gear ratio. There are various configurations, but the BMW linked dual lever and Japanese single lever variations are the most common.

The BMW Paralever and Kawasaki's Concours 14 use a pair of linked levers designed to reduce a common problem on shaft drives where the suspension extends under throttle. This is known as "shaft jacking." The dual lever design is the smoothest and most consistent shaft drive but the components are buried in parts making them expensive to service and produce.

BMW has gotten a bad rap for failures compared to the single lever Japanese versions, but you have to consider the applications. It is not uncommon to find a BMW GS with 100,000 miles of road and off-road riding. I find less than half that mileage on Japanese cruisers and they normally stay on paved roads.

While lower mileage and road conditions may seem to indicate that Japanese shaft drives seem to last longer than BMWs, it is important to keep maintenance relative to riding conditions. More abuse, dirt and load means more servicing and inspections. Nothing on a machine is designed to wear forever.

The BMW final drive has a male transmission output shaft that connects directly to the drive shaft assembly. The drive shaft has U-joints on both sides and acts as a slip joint. The lower U-joint connects to the male gearbox splines. This is the lowest point and has the most issues. Moisture here can cause corrosion, which can cause seals to fail, splines to strip and U-joints to fail.

Single lever final drives typically

found on Japanese cruisers are similar but don't have a linkage setup. These systems are prone to shaft jacking under throttle. They also give the impression of pulling to one side under hard throttle as the centrifugal force is literally trying to twist the bike around the shaft.

Since these are used primarily on short travel cruisers and muscle bikes, they need only a single U-joint to work at a reasonable operating angle. Angle is important to U-joints because they accelerate and decelerate as they change angle. The higher the angle, the more they change speed, which increases noise and wear. This is why raised trucks tend to go through drive shafts like candy. The engine is raised; the gearbox stays put. The increased working angle ultimately overloads the U-joint.

With the low operating angle of most Japanese cruisers and high positioning, the U-joints have very few failures. As with the BMWs, the problem I find on the single lever is moisture collecting in the lower area of the drive shaft, by the wheel. This causes the splines to rust out and can even work past the seals and damage the ring and pinion gears. This is usually caused by water passing by the boot when washing with pressurized water.

DRIVE SHAFT MAINTENANCE

Drive shafts require very little maintenance but I would stop short of calling them maintenance-free. Start with an inspection. Since the shaft is covered by the swingarm you can't really see what's going on inside unless there is a leak or physical damage to the tube or gearbox. You can listen for problems with the shaft by putting the bike in gear and pushing the vehicle forward and back to lock both ways on the gear. Listen for any slipping, knocking or chattering from the rear. It should stop in both directions. If it doesn't and you hear noise from the final, there is a good chance you have a problem and may get off with only an $800 bill for a shaft and labor.

Regular lubrication and maintenance of the pinion/ring gear could end up saving the bike owner replacement costs of $1,000-$1,500 for a new gearbox.

Most customers bring their bike in at the point when they try to drive forward and only hear ratcheting of the splines as they happily grind away on the pinion gear. At this point, the damage is not just to the shaft, but to the gearbox as well. This means another $400 for the pinion/shaft/bearing and labor for re-shimming the gears.

This male shaft spline shows the result of not having enough grease, which is a drive shaft's worst enemy. Here, moisture has caused rust and excessive wear.

Unfortunately, sometimes the gear is not available separately and you'll have to buy an entire gearbox. These can run between $1,000-$1,500 as an assembly. My point: Get your splines inspected and greased periodically. You can have the shop add this to a tire replacement since the wheel is being removed anyway.

The No. 1 killer on these units is lack of grease. Grease is a base oil with an additive package and thickener, usually polymers, which stabilize it into a tacky substance. We want the grease to be very tacky and keep a thick viscosity so it sticks to the metal. Over time, and with heat changes, the oil will separate from the grease and leave heavy paraffins, polymers and additives behind. This turns into a waxy paste and reduces the tackiness. In this form, it easily slides off parts and migrates away from high load areas, thus exposing the parts to oxidation and premature wear.

Use a high-quality synthetic moly grease with high shear properties and water resistance. I've found the AMSOIL synthetic water-resistant grease was still good after 15,000 miles on the splines of my single lever, shaft drive application, even with moisture buildup. It was designed for marine stern drives, so it should excel in this environment. Coat the male and female splines thoroughly and lightly coat the metal parts around it as well.

Gearbox fluid lasts a long time, but not forever. Ring and pinions require fluids with high amounts of sacrificial additives. These additives compress during shearing loads and create a physical barrier between gears. This prevents metal-to-metal contact and extends gear life, but eventually they require replacement.

These fluids contain high amounts of phosphorous and sulphur, which gives it an unpleasant smell, especially after use. Drain the old fluid and look for metal debris indicating damage. Fill the fluid to the recommended level and you're good to go for many miles. This is usually a quick and easy service most people can perform themselves. MCN

CYCLE ANALYSIS > By **Mark Barnes, Ph.D.**

Timing Adjustment

VIRTUALLY EVERY MECHANICAL project I have undertaken has taken longer than expected. How can this be? Haven't I learned anything in 45 years of turning wrenches?

Obviously, I have learned something. I've accumulated technical knowledge and skill. But I haven't learned how to accurately estimate the time required for even familiar tasks, much less unfamiliar ones. More importantly, I haven't learned that I haven't learned! I keep underestimating, and keep getting frustrated and bewildered by time overruns.

It was a small relief to realize this doesn't just happen in my garage; it's a regular occurrence with chores elsewhere. It was a bigger relief to realize it's ubiquitous among human beings. When was the last time a construction project in your area was completed on schedule, or a repairman arrived at your house on time? Maybe those standard time allotments for service procedures at dealerships aren't just institutionalized theft, after all.

FOLLOWING MY LATEST fiasco, squeezing what I thought would be a quick bit of routine moto-maintenance (20 minutes predicted, 3 hours required) into an already packed Saturday schedule, I investigated this phenomenon. Turns out there's plenty written about it; it's been a source of great consternation for a great many people.

Take Hofstadler's Law (that's right, it's a law, like gravity): It always takes longer than you expect, even when you take into account Hofstadler's Law. What? Even when I try to correct for my bias, I'll still be biased? Yes, and not just because Hofstadler said so, but because that's what the undeniable evidence indicates throughout my own first-hand experience. Regardless of any insight I might possess, it's still me—a human being—doing the thinking, and that's apparently problematic.

Then there's Parkinson's Law: Work expands to fill the time available for its completion. I'm all too familiar with this principle, too. Fixing, replacing or servicing something on my motorcycle is taking hours instead of minutes, and there's an immutable deadline, like my buddies are departing with or without me at the appointed time.

With uncanny precision and regularity, I finish at the absolute last possible moment. Was I inefficient earlier, thinking I had plenty of time? Did I add unnecessary sub-tasks that weren't in the original plan for the same reason? Was the adrenaline rush of having it all come down to the wire required to get my brain firing on all cylinders and my body into high gear? These and other self-imposed causes have undoubtedly applied at different times, all with the same result.

SO, NO NEFARIOUS cosmic force is to blame. Instead, our minds are perpetually vulnerable to something called The Planning Fallacy (coined by Kahneman and Tversky), a sort of "hope springs eternal" glitch in our temporal forecasting. We naturally assume an unrealistically optimistic stance, despite countless experiences to the contrary.

Part of the explanation is our tendency to externalize responsibility for problems, rather than assign blame to ourselves. We reflexively construe unexpected difficulties as obstacles the universe threw in our way, instead of considering them evidence that our assessments were incomplete. "But I couldn't possibly have known that bolt was ready to break!" Such arguments defend our pride, but they actually make the very point they supposedly refute. It's true, there was no way I could have known. But that's reason to consider my judgment inherently limited, not feel persecuted by some injustice.

Unanticipated problems "shouldn't" have happened, according to our notions about how the world works (even when we pay lip service to Murphy's Law). Since we insist they shouldn't have happened in the past, we discount the potential for similar interference in the future. Hence, we always start with a clean slate of expectations, wherein everything will go as imagined.

The reality is that unexpected events will occur the vast majority of the time, simply because our capacity for predicting them is so terribly limited. And the impact of those events is highly asymmetrical; good surprises are rare (given the optimism with which we begin) and almost never yield as much in time savings as bad surprises cost in time losses.

WHAT'S A POOR home mechanic, ride planner or anyone else to do? First, humbly admit your distorted perspective. Hofstadler's Law notwithstanding, accept that tasks really do take the time spent on them previously and adjust predictions accordingly, regardless of the improbability of re-encountering the exact same snags.

Oddly, the planning fallacy works backward when predicting how long jobs will take someone else; then we tend to overestimate. So, imagine what another person (whom you're not paying by the hour) would require. Finally, to address Parkinson's Law, set a firm time goal, preferably for each segment of the operation (more likely underestimated when lumped together).

Just don't get too excited about fixing this; we're still human and they're still laws. MCN

Mark Barnes is a clinical psychologist, in private practice since 1992. He has written extensively for MCN for more than 20 years..

Surviving A Broken Collarbone

IN MANY FRACTURE registries, the collarbone, or clavicle, is the most commonly broken bone in the body. The fracture most frequently occurs with a downward force on the point of the shoulder. For this reason, a highside or over-the-handlebar fall often results in this injury. At ground impact, the rider's helmet is pushed to the side while the shoulder impacting the ground is forced downward. This bending force creates compression on the lower surface of the clavicle and tension on the upper surface. These forces combine to cause, as mechanical engineers would say, a catastrophic failure of the bone structure.

The clavicle is the only boney attachment of the entire upper extremity to the body. The medial end of the clavicle is attached to the sternum (breast bone) located in the middle and front of the chest. The collarbone is the strut that spaces the shoulder out from the center of the body. In essence, shoulder width is dependent on clavicular length. The scapula or shoulder blade floats on the rib cage of the chest ensheathed in muscle layers.

When the clavicle is broken, the weight of the arm pulls the shoulder downward, the neck muscles that attach to the clavicle pull the medial part upward, and the pectoralis muscles, among others, cause the clavicle to shorten.

Clavicle fractures are classified according to location. The most common clavicle fracture occurs in the middle third of the bone and is called a Type I fracture. Type II fractures occur in the region of the conoid and trapezoid ligaments and sometimes into the AC joint. Ligament tears are an important feature of lateral fractures and these are more likely to require surgery. In growing children, a Type II variant is a tear of the sleeve around the bone called the periosteum. In these cases, the conoid and trapezoid remain attached to the sleeve.

IN RECENT YEARS, there has been a shift toward surgical management of Type I middle third clavicular fractures: the very fracture the motorcyclist is most likely to experience. The logic behind that trend was to try to improve shoulder performance by re-establishing clavicular length, and hence the normal operating length of all of the shoulder muscles.

For many years, clavicle fractures of the middle third were treated non-operatively. It is not absolutely clear that surgical management of Type I clavicular fractures results in superior shoulder performance. In a study presented at the Orthopedic Trauma Association in 2016, 160 patients across the Netherlands were randomized to treatment in a sling versus surgery. There was a superior rate of fracture healing in the surgical group, but a significant number also required secondary surgery to remove the plates and screws used to fix the fracture. Shoulder function scores were no different at 1 year, post-injury, in either group. In another study, there were no detrimental effects seen in patients who first tried a sling for two to four months, and then, if the bone failed to heal, underwent surgery.

For racers, as with all athletes, sometimes fracture treatment may be dictated by timing and the need to be able to race as soon as possible. Surgery may have an advantage in this setting. MCN

Dr. Cary Tanner is a surgeon, chairman of the board at Fresno Surgical Hospital and medical director of Summit Surgery Center.

TYPICAL COLLARBONE REHABILITATION

> By Rick Lembo, A.T.C.

First, two definitions that athletic trainers and physical therapist use:

Isometric Exercise: Resistance work done without the part moving, such as pushing against an unmovable body

Isotonic Exercise: Resistance work done with a single weight throughout the range of motion (ROM). Lifting a dumbbell would be an example.

Survival Keys

1. Use a sling for comfort, except when exercising, for at least the first three weeks
2. Sleep in a recliner until comfortable lying flat.
3. Hug a pillow with coughing or sneezing and at night to keep the shoulder away from the body.
4. Maintain your aerobic fitness. Try to use a stationary bicycle.

Week 1: Restrict elevation of arm to less than 75 degrees. Pendulum exercises. Lean forward, letting the arm drift away from the body by gravity. The shoulder is rotated by swinging the body such that the arm moves in a circle from rotation at the glenohumeral joint. This helps keep the shoulder from becoming stiff.

Weeks 2-4: Gentle ROM exercises, using the other arm to assist. Broomsticks or overhead pulleys may be used. This helps the shoulder regain motion without over-stressing the fracture. Light isometrics.

Weeks 4-8: Isotonic exercises are added. The goal is to achieve full passive ROM by four weeks after surgery (the trainer moves limb for you), and full active ROM (the patient moves the limb under his or her own power) by Week 8.

Weeks 8-12: Focus shifts to functional strength. Sport-specific exercise is added (Riding!) Off-road riders begin with fire roads or similar smooth terrain. Regaining timing and coordination is sought before returning to more challenging surfaces.

TOTAL CONTROL > By **Lee Parks**

In The Turns, 'SPAT' Spells Success

ONE OF THE challenges in the rider training field is describing incredibly complex phenomena in simple terms. For instance, you might hear someone say, "When in doubt, gas it!" There are times when that is useful information but there are also times when that advice can get you killed. The cornering process is one of those areas where the level of granularity desired can lead to very different results.

For instance, in our Total Control Advanced Riding Clinics we teach a process known as "The 10 Steps to Proper Cornering." It provides a level of detail that would be overwhelming to a new rider, and does not include braking as part of the process. This is to isolate cornering skills from braking skills, which are taught separately and later integrated into the curriculum.

Similarly, the Motorcycle Safety Foundation teaches a four-step cornering process known as Slow-Look-Press-Roll. The Idaho, Oregon and Ohio state programs teach a variation of this that goes Slow-Look-Roll-Press. In both of those instances you have a physical, linear process that works well in some corners (i.e., those on a training range) but not necessarily in others. Take turning from a stop as an example. You can't start by slowing when you're already at 0 mph. The same thing goes for multiple, linked turns. That process may or may not work well depending on things like uphills, downhills, decreasing radius, etc.

WHILE DEVELOPING THE beginner program we provide to the state of California, I did my best to look at everything with a fresh set of eyes and not be afraid to slay some sacred cows that had outlived their usefulness. In the words of Zen master Basho, "Do not follow in the footsteps of the men of old. Seek what they sought."

First, I noticed that the word "press," no matter where in the cornering process it was placed, didn't seem like the right word to me to describe what riders did to the bars during a turn.

TO ILLUSTRATE, LET'S look at something we can all relate to: a computer keyboard. It even requires our bodies to be in a fairly similar position to when we're on our bikes, as we reach for the handlebars. If I asked you to first press your keyboard, then to push your keyboard, which motion best replicates what we do to initiate countersteering on a motorcycle?

When I asked a lot of instructors why they thought the word "press" was used, none of them seemed to have a satisfactory answer for me. OK, so I knew that I didn't want to use that word, but was there a better one? The more I searched the more I realized that the problem wasn't so much semantics, but operational and philosophical. This led me to start describing a process that was as much mental as physical, as cornering requires so many decisions to be made on the fly, not just physical actions to be performed. I also wanted a process which could work for virtually any corner, in any situation. While considering names, concepts, ideas and acronyms, it was the wife of one of my best instructors who first shouted out "SPAT!"

"What's SPAT," I asked?

"That what you just spelled with your cornering process," she replied.

SHE WAS RIGHT. *SPAT* stands for the steps we came up with: *Speed-Position-Aim-Turn*. Unlike Slow-Look-Press-Roll, SPAT is a dynamic, cyclical process that repeats itself over and over, just like when we're riding on the street. Walking through the steps:

Speed means we check and adjust our speed. That may mean we need to accelerate, decelerate or use maintenance throttle. After our speed is set, we move on to Position.

Position means we adjust our body and lane position for the upcoming turn. We also may need to adjust our position within traffic to stay out of blind spots or our position within a group if we're riding with others. Once our positions are set, we move on to Aim.

Aim is more than simply looking—it implies intention. Just as you need to aim a gun to hit a target, we need to aim our bikes toward the exit of the turn. Aiming includes looking, planning our path of travel (line) and what we call connecting the dots. That means drawing a line in our minds connecting the turn point to the apex to the exit point of our turn. Once we've aimed our bikes, we Turn them.

Turn is what happens when the unique combination of steering and leaning makes a particular bike-rider-speed combination change direction. As soon as the bike is leaned into the turn the process goes back to Speed, etc.

By getting properly trained and continuously cycling through the SPAT process, riders will be able to adjust to any type of turn on any motorcycle. MCN

Lee Parks (MCN editor '95-'00) is author of Total Control Performance Street Riding and proprietor of Total Control Training.

They Might Have Gone Too Far

I APOLOGIZE FOR the untimeliness of this column. Work requires me to be in New Zealand for a couple of months this year and I had to get several months ahead on my writing. Thus I am writing this on January 9, which is important to note as it is three days after an unveiling by Honda at the giant Consumer Electronics Show in Las Vegas. I must admit that though I am fascinated by the world of gadgets, the one thing I certainly did not expect to see at the CES was a Honda motorcycle rolling out onto center stage—without a rider.

I suppose it was inevitable, and should have even been expected in this time when we are being bombarded with press reports on the new driverless cars, but for some reason, I just couldn't wrap my head around it. Now granted, though the bike rolled out by itself, Honda wasn't really trying to portray it as a self-riding vehicle. What they were demonstrating was simply that the bike could balance itself, with or without a rider.

The system borrows its balancing technology from Honda's Uni-Cub, a prototype "personal transporter" with a wheel that can travel in any direction without turning, which in turn was based on their famous ASIMO robot. When a rider sits on the bike while it is either moving very slowly or even completely stopped, the bike makes minor steering adjustments and even moves slightly forward or back, much like a tightrope walker, to keep the bike upright. It is quite fascinating to watch.

THE MOST SURPRISING thing about this system is that it appears to be relatively easy and inexpensive to adapt to current motorcycles. The prototype shown merely had a new front end attached to an existing bike model. Everything needed was built into the front end assembly, and the

Honda's self-balancing motorcycle uses what the company calls "Riding Assist" system, using technology from its robotics research program.

Honda representatives stressed that from the handlebars back, this was an ordinary production bike. Yet despite all that, they admitted there are no current plans for actually building such machines—yet. And personally I have a lot of unanswered questions, such as what to do about leaning into turns, when the system is designed to stop the bike from leaning?

THE WHOLE SITUATION really got me thinking, and in the end I began to realize I was taking a position as devil's advocate, fighting against myself! You see, for a number of years now, I have engaged in numerous serious debates with one of my best friends about the application of advanced technologies to motorcycles, especially those technologies that are for the most part safety-related. Or as my friend calls them, "nanny systems."

I have to leave his name out of this as he is employed by a major motorcycle manufacturer, but let's just say his knowledge of how bikes work and how to ride them correctly would probably place him in the top one percent of everyone in the industry. I highly value his opinion, and yet we disagree almost completely on things like antilock brake systems.

While I believe they have saved my life and should be mandatory on virtually every street-legal motorcycle, he in turn believes they have contributed to the loss of basic braking skills by the majority of riders, who no longer see a need to be trained or practiced in proper braking. Naturally, he feels even more strongly about new and upcoming things like active accident avoidance systems, "smart highways" and such. And though I have always argued against him on these things, I think the new Honda system is about to push me over the line into his camp.

WHEN I STARTED riding, disc brakes and ABS did not exist. We didn't have halogen headlights, fuel injection, radial tires or, for that matter, tubeless tires. Motorcycling was considerably more dangerous than what it is today, and required that a rider learn and practice considerably greater skills if they meant to stay alive.

Many lessons were learned the hard way, because it was the only way. As the years passed and technology gave me new tools that made it safer to ride, I embraced them. But now I begin to wonder if my old friend isn't right. Are we raising a new generation without the requisite skills to be good riders, simply because they can rely on the nanny systems to save them?

Certainly there isn't anything we can do to reverse the trend; it is going to happen whether we like it or not. Before too much longer, our cars and even our bikes will require zero interaction from us, and no skills beyond just telling the vehicle where you want to go. It will be safer, and more efficient. And I will either be dead, or very, very sad. MCN

Fred Rau (MCN editor '91-'95) is author of *Motorcycle Touring Bible* and proprietor of Fred Rau Adventure Tours - FredRau.com.

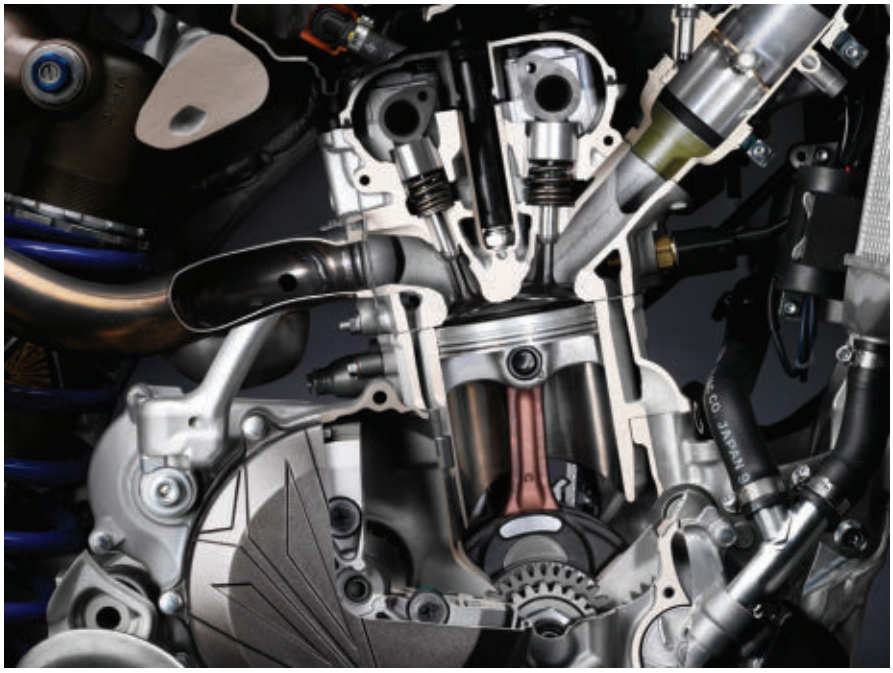
> By **Dave Searle**

Friction Reduction

EXCESS FRICTION COSTS precious horsepower, so the search for more power invariably requires reducing friction as much as possible. We're told approximately a third of our fuel energy is used just to overcome friction in engines, transmissions, tires and brakes. And despite claims from the automotive world that engine friction has been reduced by nearly 40 percent since 1990, much more can be done, and we've seen that motorcycle engines have been at the forefront of many new developments. Further friction reductions have the potential to save huge amounts of fuel and greatly reduce emissions worldwide, and both are goals the OEMs must meet, so we can expect the rapid utilization of techniques once thought to be too exotic for production.

Inside the engine, friction between the pistons and cylinders is the major source, constituting between 43 percent and 50 percent of the total. Most of us remember when cylinders invariably used iron liners and when piston wear was rapid. The transition to variations of Nikasil-plated bores (nickel-silicon-carbide), allowed tighter clearances, less wear and better heat conductivity, not to mention considerable weight savings. Yet innovation continues, and the latest bore surface treatment from Mercedes is called Nanoslide, in which the cylinders are first sprayed with molten iron-carbon alloy, for an extremely hard surface just two to three-thousandths of an inch thick, and then super finished. First used on the 2006 AMG 6.3-liter V-8, claimed fuel consumption reductions of 3 percent suggest the process must radically cut friction.

High-tech coatings on piston skirts, already employed on many high-performance motorcycle engines, are sure to become more common, and thin, low-tension piston rings are now virtually standard as well. Rarely measuring more than a millimeter in thickness, such rings reduce sliding friction significantly, although we've also heard plenty of complaints that they don't always seat during break-in, creating excessive blow-by and carbon buildup in top ends. A fascinating new development for reducing piston ring friction is currently creating a lot of buzz—laser surface texturing—creating a pattern of dimples on the ring's face that work to retain the oil film, trap debris and reduce surface area. Experiments have shown that a dimple size of 10 microns covering 5 percent the face area is effective at reducing friction by 38 percent, fuel consumption by 4 percent and wear by 72 percent! And Chrysler is now experimenting with using the same technique on cylinder walls, perhaps eliminating the need for traditional honed cross-hatching.



Yamaha's 2010 YZ450F broke the mold with a reverse-facing cylinder head and an offset cylinder to reduce piston thrust friction, among other innovations.

OFFSET CYLINDERS IS another method of reducing piston/cylinder friction. Pioneered in production motorcycles by Yamaha on its reverse-facing YZ450F motocross engines in 2010, the offset—shifting the

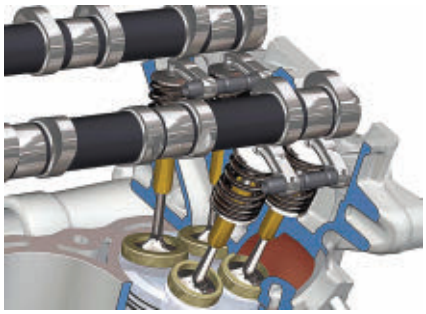
Illustrating the latest friction reduction strategies, this aluminum piston from Wiseco uses lightweight forged construction, a short wrist pin, anti-friction coatings on the skirts and very narrow low-tension rings.

centerline of the cylinder so it's no longer directly in-line with the crankshaft center—is designed to keep the connecting rod vertical at the point of highest combustion pressure, which reduces thrust friction as well as piston slap, helping to promote oil film development and reduced skirt contact.

Lightweight pistons and connecting rods also work to reduce piston/cylinder wall friction and, although we rarely get to see inside, these pieces get lighter all the time, thanks to computer finite element analysis. The big Indian 111's remarkably slender rods are a perfect example. But progress continues, and ultra light, heat-resistant ceramic and graphite engine components continue to tantalize with their possibilities. It's calculated that graphite pistons will be 40 percent lighter than the best forged aluminum types, for instance.

FRICTION IN THE top end is the next most significant source. The rubbing of cam lobes on buckets or rocker followers typically constitutes as much as 85 percent of the total, and it can be greatly reduced by employing either roller or finger cam followers. American hot-rodders learned to fit roller cams and roller-tipped lifters to pushrod V-8s a long time ago, and these have naturally become popular on OHV Harley-Davidsons for the same reasons. Finger followers, pivoting levers interposed between the cam and valve, are now standard in Formula One and have been used by both KTM (the RC8) and BMW (S1000RR, etc.) for many years now. Coating the fingers with Diamond Like Carbon further reduces the friction.

Consider that valve spring pressures must be strong enough to cope with the engine's highest allowable rpm to resist float, but at any rpm below the maximum will create higher than needed pressures that make cam/lifter lubrication very difficult. Therefore, anything that can be done to reduce the weight of the valve components, smaller diameter valve stems, Ti keepers and spring retainers,



BMW's S1000RR followed Formula One practice by using finger followers to reduce friction between the cam lobes and the valves and claimed to eliminate valve float issues.

barrel-shaped single valve springs, small diameter adjusting shims, etc., will reduce the required spring pressures, relieving friction and wear—creating a cascade of benefits. In motorcycling, titanium valves are becoming much more common on high-performance engines, and in Formula One, even lighter titanium/aluminum alloys were employed until rules changes eliminated such materials after 2008. And, to further lighten valves made of these exotic materials, both their stems and valve heads were hollow.

Ducati is the only production and racing constructor that doesn't rely on coiled metal or pneumatic springs to close its valves. If you haven't ridden one, the signature Desmodromic system, which uses rocker arms to positively close the valves as well as open them, feels vastly different from any other engine type due to the absence of top end friction.

Because almost any surface will reveal roughness at sufficient magnification, improving production surface finishes by techniques like micro polishing and hard chrome plating have also been employed by professional engine builders for a long time. Honed cylinders, in effect deliberately roughened to retain an oil film, have been treated to what's called "plateau honing" to reduce the sharp peaks of asperities that would otherwise cause excess friction. As a secondary honing step that's sometimes done with a flexible ball-type hone in the reverse direction of standard honing stones, it both reduces wear and speeds break-in. Honda now employs plateau honing on its cars to improve fuel mileage.

OF COURSE, GOING to extraordinary lengths to insure perfectly cylindrical bores is also very important. While "torque plates" that duplicate the stresses caused by cylinder head bolts have long been used by professional engine builders to reduce bore distortion, GP engine machinists will take that technique to the next level, going so far as to run hot coolant through the cylinders during boring and honing, for instance. And, without very true cylinders, tricks like low tension piston rings and reduced clearances that allow lighter, less viscous oils, won't work.

Lubrication developments naturally play a big part in friction reduction as well. Ever lighter engine oils are now specified in automobiles to improve mileage, and reduced bearing journal areas add to the gains. A possible breakthrough in lubrication is promised by what are called "ionic liquids." Described as room-temperature molten salts, they may soon replace traditional anti-wear additives in engine oil. Investigated since 2001, they have a chemical structure that bonds to metal surfaces to produce a thin, protective film under boundary layer lubrication conditions, particularly when fluorine, boron and phosphorous atoms are present in the metal components, and have been shown to create remarkably stable wear protection under high pressures and temperatures and to reduce friction by as much as 25–50 percent!

Clearly, the potential for reduced friction to improve performance, mileage and extend engine life have engineers excited about the future, and we should be equally excited to see and ride the fruits of their labors. MCN

Dave Searle (MCN editor '00-'16) started freelancing for Road Rider in 1988 and became the technical editor of MCN in 1996.

MCN Next Month

» Three-Wheeler Comparison
» Two-Wheeled Camping

Vintage

Heavyweight Contender

1936 Indian Chief

RUSSELL EVANS

This beautiful 1936 Indian Chief is part of the "Bikes & Bombers" exhibit, on display at Lyon Air Museum in Santa Ana, Calif.

The chain-driven 3-speed is powered by a carbureted 74-ci. flathead V-twin with a bore and stroke of 3.3 inches x 4.4 inches, and it uses a dry sump oiling system. The front suspension is telescopic, with plunger-type on the rear. Expanding brake drums are used both front and rear. It was the first year that a combination tail/stop light came as standard equipment.

The Chief was Indian's heavyweight challenger to Harley-Davidson. The flathead motor was available in the Chief through 1950.

The Lyon Museum has a few motorcycles from Steve McQueen's collection. It was mentioned that this '36 Chief might have been owned by the Hollywood heartthrob, but the museum could not confirm that. Bonhams auction house placed a black, McQueen-owned 1936 Chief for sale in early 2015, with an expected sale price of $80,000-$100,000. The sale literature states that McQueen owned several dozen Indians among his collection of 150 motorcycles.

A 1936 Chief in Concours-caliber condition could be expected to fetch as much as $75,000 at auction. Excellent grade models might still go for near $60,000. Even 'Fair' condition '36 Chiefs could pull in up to $45,000, according to estimates.