

MGN

MOTORCYCLE CONSUMER NEWS

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***READY TO
ROAM***

KTM

**1290
SUPER
DUKE GT**



PLUS

**HARLEY-DAVIDSON CVO
PRO STREET BREAKOUT**

BARBER VINTAGE FESTIVAL

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MCN[»]LINEUP

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USA

> MCN challenges you to challenge us.

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THERE'S A PERCEPTION that "Made in the USA" has lost its truth, when the boundaries are simply shifting. While many common products like clothing and consumer electronics are made abroad, the U.S. still manufactures about three-quarters of everything it consumes. In fact, several foreign companies with factories in the U.S. manufacture vehicles with up to 75 percent U.S. origination.

The American Automobile Labeling Act (AALA) of 1994 requires automakers to indicate the percent of the final vehicle made stateside. The law does not apply to motorcycles. Though Harley-Davidson doesn't disclose the percentage of component parts made abroad, it relies on the fact that Americans believe they are buying an authentic, Made in the USA product, and heavily markets the bikes as such. Though the companies share many of the same suppliers, a Polaris-built Indian is allegedly more "American made" than a Harley.

AMF'S POOR MANAGEMENT and a U.S. recession left Harley-Davidson nearly bankrupt in 1981. Investors purchased the Motor Company and immediately began reducing costs by modernizing factories, moving to just-in-time inventory management and sourcing parts abroad. They also improved quality, comfort and performance with rubber-mounted Evolution engines and Softail rear suspension. Defects in H-D products dropped from nearly 50 percent to 2 percent. Demand skyrocketed.

Is a motorcycle made with half globally sourced parts less American than a Chevy built in Korea, a Chrysler made by Fiat, or a 75-percent American Toyota Camry, manufactured in Kentucky?

In 1983, President Ronald Reagan increased import tariffs from 4.4 to 49.4 percent on Japanese motorcycles over 700cc as a protectionist action for the only remaining American motorcycle manufacturer. Oddly, the largest market for motorcycles in the U.S. in 1982 was under 400cc, of which Harley-Davidson built none. Only about 14 percent of the annual one million imported bikes were impacted by the tariff. The response from Japanese brands was an increased production

of smaller, more affordable bikes and additional onshore manufacturing at existing U.S. plants.

A CONSUMER REPORTS survey indicated that eight out of 10 Americans would prefer to purchase products made in the U.S. and 60 percent are willing to pay an additional 10 percent for patriotism. Apple prints on its devices, "Designed by Apple in California. Assembled in China." Harleys are both designed and assembled in America.

The U.S. has been home to hundreds of motorcycle manufacturers during the past century. Most never reached or maintained consumer acceptance or profitability. Perhaps they should have sourced more parts globally and raised prices 10 percent—the Made-in-America tax.

THE MOTORCYCLE INDUSTRY collapsed again with the most recent (2007-2009) recession. Suzuki chose not to import any bikes for an entire year. Other manufacturers reduced the number of updates and new model introductions. Yet, the total number of bikes sold didn't drop dramatically, they merely shifted from new to used.

Ratbikes and garage customs capture the essence of made in America. There's been a resurgence of handcrafted bikes, built in workshops, by enthusiasts, using whatever materials and bikes they can source. OEMs frequently contract these builders to fashion something creative out of their factory models—an attempt to make their homogenized bikes more exciting to Americans.

The next generation of riders is shopping Craigslist instead of a local dealership, content with inexpensive motorcycles as recreation or transportation. Manufacturers are once again wising up to this cyclical shift in demand, and releasing more affordable, smaller and customizable motorcycles. Even Harley-Davidson has a 500cc bike now, and it didn't even require a ridiculous tariff. **MCN**

LETTERS

MCN 3/17 LOW-SIDES:

Page 3, MCN killed Buick, but GM has not yet offed their most elderly brand.

Page 10, The LSL Clubman is powered by a Ducati L-twin, not parallel.

BEFORE TIGHTENING the Hitch Clamp device (MCN 2/17), the hitch pin should be inserted through the receiver and hitch, which was not shown in the image.

The Heavy Duty model appears to allow more space for setscrew tightening behind the lip, if the receiver has room to accept the the bolt.

Also, it appears Hitch Clamp no longer offers the Standard Duty model on its website.

—Tom Formberg

The hitch pin was in place, but not in view. The receiver shown has two holes to allow fore/aft adjustment.

Indeed, since we ordered ours, Hitch Clamp has revised its lineup, adding 1.25 and 2.5-inch versions of the Cross Clamp and subtracting the Standard Duty 2-inch model reviewed.

—Mark Barnes

A RECENT STARTUP named *riders-share.com* is an Airbnb-style sharing service for bikes.

This looks to be a great, cost-effective option to rent a motorcycle anywhere, as long as the concept grows. As this is a fairly new idea, my biggest concerns are surrounding insurance and information security.

—Tony Bar

I met with one of the founders of Riders Share last year and asked many questions. They're still figuring out their business model. My understanding is they do have a valid insurance carrier, but I haven't seen the details. I also didn't get details on business-critical internals like security and funding.

MCN also hasn't tested the service, from either side. We are considering evaluating Riders Share more thor-

TRIKES

I saw an outrigger wheel setup that does not require the removal of the rear tire or any change to the drive system, yet provides the stability of a trike. The wheels are easily removed, returning the motorcycle to stock. The cycle looks a bit odd with three rear tires, but I'd like more information and a test.

—Dave Myers

You saw a DIY Trike+, Trikeman, Trigg, or similar—an inexpensive, bolt-on accessory product that adds two rear wheels.

We've selected several three-wheeled bikes for our upcoming "which trike" comparison later this year. The only non-OEM conversion we'll be testing is Tilting Motorworks. The others are Spyder F3, Slingshot, Ural Gear Up and an H-D Freewheeler.

—David Hilgendorf

oughly and would love to hear about reader experience with the service.

—David Hilgendorf

MY WIFE AND I spent three days at Gary LaPlante's MotoVentures riding school in February 2014. I particularly liked the hard braking exercise, developing feel, skill and judgment to confidently stop at the threshold of front wheel lock-up.

In the summer of 2015, I was riding my F800GS 30 mph in an urban setting. As I approached a crossroad, my eye registered a white blur, which instantly triggered maximum braking, before I even realized a pickup was blowing through a stop sign.

The front brake howled as I quickly calculated that I might narrowly escape or T-bone the truck. The driver saw me at the last moment

and squealed to a stop, leaving just enough room to swerve around him. I realized that my ABS never actuated—the skills learned at MotoVentures burst forth in a split-second reaction that saved me.

I couldn't agree with Gary more: off-road riding skills improve street riding skills. My wife and I give Gary's school the highest recommendation!

—Stephen Middlekauf

FRED COMMENTED on the disparity between use of the Davidson and Harley names (MCN 2/17). For years, I've told people that I ride a "Davidson." I like to point out the inequality and chuckle when they say "a what?" I'd never seen it in print, until now.

If both names applied to the Harley Owners Group (H-DOG), we might have a canine as a mascot, instead of the pig we all rally around.

—Anthony Sarni

WHAT WERE THE sources for Fred's Two Icons (MCN 2/17)? I have been researching H-D's early history, including Herb Wagner's At the Creation, and this was new information.

—Dick Werner

Parts of that article came from notes I've made over the past 40 years, when visiting libraries and museums related to Harley-Davidsons, Evinrude Motors and motorcycling in general, including the Motorcyclepedia and Wheels Through Time museums.

Here are a few books and online sources used to freshen my memory: en.wikipedia.org/wiki/Ole_Evinrude tinyurl.com/Norwegian-History tinyurl.com/WT-history tinyurl.com/Lemelson-MIT tinyurl.com/HD-history madehow.com motorcyclepediamuseum.org Plus several interviews with Dale Walksler, owner and curator of: wheelsthroughtime.com

—Fred Rau

I'M CONCERNED when conservative media describe liberals as opposed to motorsports. Divisive language like this weakens the motorcycling community and alienates non-motorcyclists who otherwise might enjoy our sport.

I once read about a proposed land-closure act in both American Motorcyclist and the Sierra Club magazine. I wrote letters to each organization suggesting a partnership. Public land allocated to mining, timbering, etc. already had compromised ecosystems and outdoor enthusiasts could unite to open those lands for motorized and no motorized recreation, increasing the total land available.

I received an enthusiastic reply from the AMA and a derogatory reply about "those awful motorcyclists" from the Sierra Club. Millions fewer acres of land are open to recreation (motorized or not), because industry provides a unified voice to government, while recreational outdoorspeople continue to squabble over land use.

I asked the local ABATE chapter why they only contacted Republican legislators and recommend Republican candidates: "Because Democrats only care about the rights of minorities."

I also notice a difference in language used to describe Republican versus Democratic legislators and agencies. The photographs of Republicans are always smiling, while the Democrats frequently have unpleasant expressions. Do you feel politicians represent motorcyclist concerns equally?

—Adam Zuckerman

SEND LETTERS TO THE EDITOR

MCN Letters c/o Lumina Media
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With few exceptions, there is a tendency to bucket groups and issues according to a political party. This is an unfair, though not always incorrect, assumption.

Looking through the legislative agenda the MRF has developed, some issues are supported by one party, whereas others align with the opposite party. Here is a quick breakdown, which indicates that motorcycling issues cross party lines regularly and consistently:

Motorcyclists are cautious about the emergence of autonomous vehicles on our nation's roadways. They want to ensure strong regulations, making sure manufacturers of self-driving cars are testing motorcycle recognition and responsiveness. Republicans are against impeding technology development and push for more lax regulations.

Ethanol pulls strong opinions from both parties, largely dependent on where the lawmaker hails from. Republicans from Iowa gladly caucus with the 'green' liberals because they know that ethanol production is critical to their state's success.

The MRF is opposed to federal mandates that require riders to wear specific gear when riding. We believe these decisions belong at the state level and are a choice to be made by adults. Republicans generally support this.

There you have it—three of the MRF's top issues split evenly among parties. While motorcyclists can be political, they don't have to be partisan.

—Megan Ekstrom

I LIKE SPIRITED riding and have been considering downsizing from my Suzuki Bandit 1200 to a 300cc sportbike. The "slow-bike-fast" principle seems to reduce risking life and limb around each blind corner, as I get older and more fearful. My concern is that reviews invariably describe them as "beginner bikes," focusing on how unthreatening they are in power and handling or how low the seat height is. Do you feel they'd be appropriate daily

rides or weekend canyon carvers for experienced riders or would the lack of power become annoying or boring shortly after buying one? Would it also depend on the particular model (i.e., CBR300 vs. RC390)? A buddy re-entered the sport on a Ninja 250 and said it was great around town but he quickly got tired of having it wound up all the time on faster roads and moved on to a 600 a year later.

—Ian Crooks

Small sportbikes are fantastic, be sure to get the ABS. They are light, flickable, and have great fuel economy. Though capable, you'll likely not find them much fun for long distances at freeway speed. Another caveat is having to "wring them out," as they make the most power near redline. The size may also be uncomfortable for tall riders.

I'm excited to see how the new 390 Duke performs. Honda's 500s are also excellent—worth a look if you're shopping small. For a spirited rider, the Kawasaki Z650 (MCN 3/17) is fast and compact, with plenty of power.

I wouldn't recommend these bikes for touring duty, but any are capable of urban and canyon carving, and would even be a blast on a technical track.

If anyone says your 300 is a beginner bike, smoke them in the canyons or at the track, then show them your fuel receipt. It's not what you ride, it's how you ride. Go forth merrily.

—David Hilgendorf

I LOVED MARK'S comments on the TU250X (MCN 1/17). After a 20-year hiatus, I picked up a TU250X for my re-entry to motorcycling. It reminded me of my first bike, a Honda CB350. In the Upper Peninsula of Michigan, its top speed of 70 mph wasn't a problem. If it were a 350 or 450, I would probably never have let it go.

—C. Lebrell

Have a look at the 2017 Yamaha SR400.

—David Hilgendorf

Anemometers and Oscillation

GOT PROBLEMS? MCN DOWNTIME

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or email questions with JPEG images to:
editor@mcnews.com Subject: Downtime

IN RUN SMOOTH (MCN 1/17), Kevin mentions using “anemometers” to measure vacuum pressure. Did he type manometer and auto-correct changed it? Directly measuring pressures as they fluctuate and visually averaging them would be more precise.

—John Stokes

Good catch! I used the term intentionally to describe a vintage tool—commonly used to sync dual carbs on VW—which measures airflow rather than pressure. It’s a simple mechanical vane type anemometer set with a rubber cone to force air through a restriction (and seal) in order to show flow in kg/h.

It was fairly accurate, but inappropriate for some applications, so I didn’t replace mine when it was permanently borrowed. Search for “snail type synchrometer” (correct spelling), and compare to “mechanical vane anemometer.”

—Kevin O’Shaughnessy

THE HANDLEBARS on my 2014 Yamaha Bolt oscillate when I take my hands off the bars with the cruise control set between 30 to 70 mph, but is steady at 70 to 90 mph. I’ve checked the steering head, wheel bearings and tire balance. Could the center tread be causing the problem? Would another tire or a steering damper help, or should I just keep my hands on the bars?

—Michael Derrickson

Shakes, shimmies and oscillations are common concerns—all related to harmonics. Think of frequency as the tone a guitar string makes and amplitude as volume. Your Bolt is experiencing

a frequency (tone) with moderate amplitude (volume), enough to feel. Frequencies stem from various internal sources such as the engine, transmission and drivetrain, outside stimuli such as wind friction and road surface, and rider input from turning, accelerating and braking.

Handlebars are a pivot point and a natural place for the energy to create unwanted movement. Some frequencies are dampened naturally and others actively, whatever is left creates a party of freeriding waves. When they combine, they may increase the amplitude or frequency. The right combination of frequency and amplitude will cause your handlebars to oscillate, sometimes enough to cause a tank slapper. The suspension is designed to dampen energy, so these frequencies are often short-lived and most riders don’t notice them.

Manufacturers design bikes to use the rider as an integral part of steering damping. We correct for steering input constantly without thinking about it. Humans make great dampers for subtle frequencies, but a steering damper is better for violent ones. Without subtle body damping, the energy takes the least path of resistance and wobbles become apparent at the steering head, so keep your hands on the bars if it helps.

First, check your tire pressures with an accurate pressure gauge with the tires at ambient temperatures. There are horrible inconsistencies with cheap gauges. I recommend the very accurate Intercomp 0-60 psi oil-filled gauge for about \$60. Using nitrogen pressure does not improve your ride, give better fuel economy or magically fix handling problems—all gasses expand at the same rate with heat (Boyle’s law).

Check wheel and steering bearings and rear axle alignment—all can

cause problems. If maintenance is good, try a different tire. OEM recommended tires are usually best, but sometimes another model may do the trick. If all else fails, you could invest in a steering damper, but they tend to change the direction of the energy rather than dampen it.

There are tread patterns that can induce wobble, especially on a road surface it can grab, such as a road siped in an angled pattern for rain drainage or the crosshatch of a metal bridge grating. You should notice a reduction of oscillation on a flat surface. Wobble is more a matter of damping qualities of the tire than the actual tread, which is very difficult to quantify.

Most tread issues come from tire cupping, caused by braking pressures rubbing off the leading edge of the raised portion of a tire. This naturally occurs over time and is hastened by low tire pressures and soft compounds. The tire develops a lower leading edge and a higher trailing edge, essentially a ramp. If the tire grooving is offset, (and nearly all are) you’ll end up with a high spot on one side of the tire and a low spot on the other side. This causes changes to the contact angle or pressure creating a pulse at the front tire. You will feel it in steering as a shudder on smooth pavement. This can translate to frequency wobbles as it travels through the vehicle.

Frequency problems are a combination of parts reacting to one another. After an OEM builds a bike dozens of tire configurations are tested to find the best combination of ride quality, damping and price. When necessary, the OEM will perform further tests to isolate aberrant frequencies and figure out how to dampen them. OEMs can’t account for every rider’s body position, weight and accessory added to the bike, so some

riders may have a problem, while others don't.

—Kevin O'Shaughnessy

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

MY SON COMMUTES to work in a downtown area that feels relatively secure. He parked his KLX400 at his office, which is an upscale converted manufacturing building with other tenants. He spotted someone making off with the KLX, gave chase and fortunately kept the bike. Home is a small neighborhood rural road and bikes are hidden behind a heavy locked wooden gate under covers, without issue. What are effective theft deterrents he should practice in an urban setting?

—Stephen Durham

There are two kinds of thieves. The opportunistic thief happens across an easy mark and is more likely to ride or roll away with the bike. The targeted thief is looking for models to part out for profit and is more likely to load the bike and drive away with it.

If a skilled thief wants a bike bad enough, very little will stop him. The best deterrent is to encourage thieves to look elsewhere and leave your bike alone. You can apply many of the same strategies used at your rural location when parking in the city:

> Chain the bike to something immobile. Make it 30 seconds and one tool harder for someone to grab.

> Park in a heavily pedestrian-trafficked area, where thieves can't park a truck alongside your bike.

> Park in a parking structure. The bike is less visible and harder to

load or escape with. Structures often offer motorcycle spaces free or at reduced rates.

> Ride a cheap bike. Expensive bikes are easier to part out. The KLX should be a good choice.

> Park near other bikes. Yours is no longer the nicest bike (see above).

> Cover the bike. It's harder to identify or roll away with.

A GPS tracking system may help police recover your bike once stolen, though it probably won't be returned in one piece. An alarm system may draw attention, but you're relying on other humans to intervene when it sounds.

I don't put much faith in GPS and alarms because targeted thieves know how to bypass electronics. Once the bike is gone, recovery rates are minimal. Plan to keep it in place.

—David Hilgendorf



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MCN MOTORCYCLE
CONSUMER
NEWS

Pipeline

> Edited by **Russell Evans**

» **WITH ITS NEWEST** entry to its Multistrada family available in the U.S., Ducati makes its bid for the ultimate bike. The Multistrada 950 was designed with comfort, style and performance in mind, and its \$13,995 MSRP makes it as approachable as it is versatile.

Equipped with the Italian brand's Testastretta 937cc engine and a 19" front wheel, the Multistrada 950 delivers a comfortable balance for long-distance and off-road touring, excellent city riding and daily commuting, thanks in part to low fuel consumption, affordable ownership costs, and an upright seating position. The L-Twin engine produces 113 horsepower, 71 lb.-ft. of torque and is coupled with a six-speed transmission, plus standard ABS, traction control and Ducati's four distinct riding modes.

The new 950 is an extension of the Multistrada lineup of the 1200 S, 1200 Enduro and 1200 S Pikes Peak.

Owners of the 950 will find that most accessories available for current Mul-



tistrada models—designed to enhance each of the distinct Multistrada riding modes—will also be available for the new Multistrada 950:

Touring: Color-matched panniers, center stand and heated grips.

Sport: Ducati performance exhaust by Termignoni, billet aluminum frame plugs and billet aluminum front brake

reservoir cap.

Urban: Top case, tank bag and USB hub to charge electronic devices.

Enduro: Supplementary LED driving lights, engine crash bars, aluminum radiator guard, aluminum sump guard, off-road pegs, tubeless spoked wheels and aluminum panniers by Touratech.

ducati.com

» **KNOWN PRIMARILY FOR** its wide range of add-on Bluetooth communication devices, Sena's logical next step was to offer helmets with factory pre-installed systems.

After establishing a leading position in the motorcycle Bluetooth market, the announcement of the Intelligent Noise Cancelling motorcycle helmet came in late 2015 to signal the company's introduction to this new market.

While continuing development on its flagship full-face lid, Sena introduced the Cavalry, the first motorcycle half-helmet with an integrated communi-

cation system. The Cavalry incorporates a discrete, pre-wired Bluetooth setup, featuring Sena's patented technologies.

The Cavalry is a typical half-shell motorcycle helmet, built with a composite fiberglass outer shell, removable peak visor and double D-ring retention system. The communication

system has most of the same components used in the

Smart helmet for cyclists—minus the action camera, which is not available as a built-in option for the Cavalry.



The waterproof communicator is compatible with Bluetooth 4.1 and can support up to four connections within a maximum range of a half-mile on open terrain. Its Li-ion battery powers up to 10 hours of talk time and will require another three for a full charge.

The helmet's inner shell houses the built-in microphone above the forehead area, while two HD speakers are positioned above the ears.

The microphone, which employs Sena's noise control technology, sits several inches above the rider's mouth. Ear cups that are ordered separately provide some noise-cancelling services at higher speeds.

Available in matte black or glossy black with a \$349 MSRP. ***sena.com***



» **A ROAD KING** with almost no chrome? Sounds almost un-American. Powered by the new Milwaukee-Eight 107 engine, Harley-Davidson's new Road King Special pushes the company's touring line in a dramatic styling direction, expressing a contemporary perspective on the classic Road King model.

"The Road King has always reflected the purity of the Harley-Davidson FL riding experience," said Brad Richards, Harley-Davidson Vice-President of Styling and Design. "By exchanging chrome surfaces for black and lowering the bike's profile, we've moved the

traditional Road King into a new space that's very current in the custom bagger scene."

A dark front end topped by a massive gloss-black headlamp nacelle is the signature styling element of the Road King Special. A new 9-inch-tall, 1.25-inch-diameter mini-ape handlebar puts the rider in an aggressive posture on the bike that's also comfortable for long runs on the open road.

"Chrome was retained on only some key engine components," said Harley-Davidson Designer-Stylist Dais Nagao.

harleydavidson.com



» **PHILADELPHIA-BASED CHRISTINI** announced the launch of its All-Wheel-Drive Motorcycles' II-Track Snow Bike system, which will utilize the All-Wheel-Drive technology of the Christini AWD Motorcycle platform to power both the front and rear of the machine via a patent pending front track system. The front track system will enable the already versatile Christini AWD Motorcycle to be used as a year-round machine able to find traction in various conditions.

The system, which may be used only on Christini motorcycles, uses a small snow track centered between a split ski to assist in flotation. The track between the front forks is driven from the front hub, which is powered by the AWD drive system. The Christini AWD has a standard dirt bike swing arm configuration which makes it compatible with standard snow track systems and allows them to work in conjunction with the Christini II-Track. Christini AWD's start at \$8,395 MSRP. christini.com

LATEST RECALLS

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
Component: Hydraulic, brakes
NHTSA #: 16V854000

Make: KTM
Model: 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

Make: Yamaha
Model: 2014-2016 WR 250R
Component: Clutch Seal
NHTSA #: 16V800000

Make: Zero Motorcycles Inc.
Model: 2015 SR, S, DS, and FX
Component: ABS
NHTSA #: 16V610000

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

BANDIT9

AVA

With an alien aesthetic that could have come from H.R. Giger's own sketchbook, Bandit9's AVA motorcycle reflects a highly polished approach to minimalism. The Vietnam-based builder Daryl Villanueva and his team construct the limited-edition model from a 1967 Honda Supersport (with a 125 cc engine) and then handcraft the distinctive steel unibody tank and X cowl, as well as customize the front suspension, steel exhaust, brake light, speedometer, leather seat and reflective chrome finish. Also onboard are a sand-casted, deer-leg swing arm and dual-shock rear suspension.

Bandit9 plans to produce only nine examples upon order, each priced at \$10,950. banditnine.com



MV AGUSTA

Italian manufacturer MV Agusta announced plans to increase its presence and brand awareness in the United States and Canada. A partnership between MV Agusta and Urban Motor Group Pty Ltd. aims to create a new brand strategy in the U.S., as a significant part of MV Agusta's future growth.

MV Agusta USA LLC—currently responsible for sales of MV Agusta motorcycles in the U.S. market—will be led by Urban Motor Group through a dedicated business unit.

CEO, Joseph Elasmir will lead the U.S. team to develop and reinforce the focus on building brand awareness and quality customer service.

mvagusta.com

Strategy

» ADVENTURE BY GREGORY W. FRAZIER

When Living on a Shoestring, Don't Lose Your Assets

The loss of a motorcyclist's wallet can make the most avid adventure seeker cry like a spoiled baby on a hot afternoon wearing a well-soiled diaper. A slick leather or textile wallet can easily slide out of a jacket or pants pocket while the rider is doing jumping jacks on the foot pegs over rocks and potholes. It can just as easily be left behind in the rumpled sheets of a motel bed, or on top of a gas pump after tanking up while harried, trying to beat the clock to some checkpoint.

Compounding the problem of the dark, slippery wallet going walkabout, there is always the chance of meeting one of the sticky-fingered professionals known as pickpockets.

In both cases, reducing the risk of loss can be as simple as a shoelace. My preference has been for long shoelaces with both ends sewn to my wallet, making a loop big enough to slip over my head while wearing a motorcycle helmet. I choose a screaming Hi-Viz green color.

When my wallet has been set down I can usually see the green cord. While driving a motorcycle, I can loop the shoelace over my head and let the wallet hang from my neck until I can secure it in an inside pocket or slide it down the front of my T-shirt. The shoelace can also be tied to a belt or belt loop, similar to the dog collar chain popular with certain segments of our motorcycling population; but the shoelace is much less heavy and costly.

As for the sticky-fingered professionals, unless they are carrying a pair of scissors or a knife, if they are able to slide the wallet out of a pocket while I am leaning on a bar sipping a glass of



A brightly colored shoelace is easy to spot and wraps comfortably around one's neck. This is a good option to one's pocket, out of which a wallet may slide or be stolen.

spring water while lying to the bartender or another patron, the slipped wallet will come to the end of its rope within a foot or a bit more, and I should feel a tug that shouldn't be a tug. If feeling the tug fast enough, a courageous wallet owner might even end up a hero for catching a thief—usually good for another round of spring water by supportive patrons.

TIPS: An added deterrent to a slippery wallet (or passport) sliding up, or sideways out of a pocket, is to have it wrapped reasonably tightly by a thick rubber band. Ms. Sticky Fingers will have a harder time carefully sliding the wallet out of its holding place, as the rubber snags on the pocket material. Rather than using office supply rubber bands, I cut my own rubber bands from old inner tubes, giving me a rubber band ranging from the

size of the inner tubes and any width I like.

Usually, I carry a second or “dummy” wallet in a separate pocket. In it are business cards, dead telephone cards and usually some small money—less than \$100. Out of that wallet, I pay for gas (when using cash), drinks and tolls, not letting a sharp-eyed, sticky-fingered professional see where my real wallet is tied and stashed. I refresh the cash pool in the fake or throw-down wallet each day. If the adventurous thief is good enough to steal it, they have had a highly risky adventure while I have had a pretty good laugh, mostly at myself for not being careful.

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

Skirting Recalls Not in Manufacturers' Best Interests

Dear Harry:

Do you know much about how the NHTSA handles recalls? I heard that manufacturers are purposefully (or perhaps illegally) avoiding issuing defect recalls and authorizing warranty work for what appear to be common, and thanks to the Internet, well-documented issues. I have personally run into this problem on both cars and bikes and just chalked it up to "no one wants to pay for failure." I assume the resistance is because mechanical failures are expensive, and recalling them all even more so.

— Frustrated rider

NHTSA (National Highway Traffic Safety Administration) recalls are based on safety-related defects. NHTSA says, "A recall is issued when a manufacturer or NHTSA determines that a vehicle, equipment, car seat, or tire creates an unreasonable safety risk or fails to meet minimum safety standards." NHTSA recalls include motorcycles and motorcycle equipment that may pose a risk to safety (helmets, for example).

Some recalls may be initiated under warranty, but not related to NHTSA. If a mechanical (or other) problem does not compromise safety, NHTSA does not

have jurisdiction.

Particularly with motorcycles, it is important for each of us to submit a report immediately whenever we become aware of a safety-related problem or concern. The form for complaint submission is available online (Google "NHTSA complaint form") and is easy to complete. A single report, or even several reports, might not result in an investigation and recall. NHTSA staff review and consider the complaints along with other information in deciding whether to open an investigation.

When an investigation is concluded, the agency either notifies the manufacturer of recall recommendations or closes the investigation if no safety-related defect is identified. When a recall is issued, the manufacturer can either repair the defect or replace the defective equipment (free of charge to the consumer). In some instances, there might be a refund option (possibly subtracting for depreciation). The manufacturer must notify all purchasers and subsequent owners of the motorcycle.

Manufacturers prefer to avoid recall. Without the recall, the owner may never find out that the problem was a defect (as opposed to being a failure based on ordinary wear and tear). Also, the recall

may increase the manufacturer's exposure to liability in the event that the defect results in injury. Unfortunately, it is fairly routine in the corporate culture to put cost concerns ahead of safety concerns. That culture provides incentive for the company to quietly authorize some repairs under warranty or simply deny that the problem is the fault of the manufacturer.

As to serious safety issues, the manufacturer's incentive to promptly comply with the recall may go beyond the threat of government fines or other sanctions. Because the recall does not insulate the manufacturer from liability for injuries or death caused by the defective part or product, it becomes in the seller's best interest to move expeditiously and fix the problem before more people get hurt. In most state and federal courts, it would be difficult for a manufacturer to defend against a lawsuit arising from an injury that was caused by a motorcycle equipment defect which was so clear that a recall was issued.

Note: This information is not to be considered professional legal advice.

Harry Deitzler is a partner in law firm Hill, Peterson, Carper, Bee and Deitzler, PLLC. Submit inquiries at motorcyclejustice.com



» STREET BY DAVID L. HOUGH

Be on the Lookout For Dumb Stunts

You're enjoying a pleasant ride in the mountains. Traffic is light, the weather is warm and sunny, and the pavement is clean and dry. The curvy road invites you to enjoy it at a "good clip." Suddenly, rounding a blind left-hander, you realize there's a motor home blocking both lanes.

You immediately transition to the brakes,

DAVID L. HOUGH

Use Front Brake for Maximum Stopping Power

The ability to ride a dirt bike proficiently requires learning how to turn while riding standing up and how to maximize the front brake's incredible stopping power. If you haven't mastered these two key skills your dirt riding capabilities will plateau. You will be fundamentally deficient and have limits to where you can ride or how fast you can ride. The solution is to get professional training and practice perfectly and repeatedly on a dirt bike until your brain is programed correctly, your judgment is spot-on, and your control feel is delicate. There is no better training tool than a dirt bike for overcoming motorcycle riding skills plateaus.

One skills plateau occurs when riders fail to shift their bodies from side to side when turning while standing up. This deficiency rears its ugly head in low-speed, tight trail turns and during mid-speed turns in sand washes, hillclimbs, single track trails, and downhill rain ruts.

One problem riders have is they don't know how to counter-balance and are dependent on either turning the handlebars or sliding the bike sideways to turn, instead of simply leaning it. The solution for low-speed, tight turns is to practice counter-balancing or shifting your hips opposite the bike's lean to keep your



balance and not fall over. The solution for mid-speed turns is to practice riding in third gear through a five-cone slalom, down a sand wash, up a hillclimb, or in first gear down a long six-inch wide board. Ride standing up, but instead of turning the handlebars, simply lean the bike, each time shifting your hips in the other direction, ultimately steering the bike by leaning it with your legs and foot peg pressure.

Another skills plateau comes when riders improperly use the front brake.

You will notice this deficiency in the dirt on steep downhill or on the street when a car suddenly pulls out in front of you. The problem is many riders haven't practiced emergency braking, are using the brakes incorrectly, or avoid using the front brake at all! These riders fear steep downhill and are ill-prepared for street riding, where lack of this skill can be highly consequential. Motorcycle riders must be able to confidently use the front brake at the threshold of lockup, where the most stopping power is. That requires practicing until you become "unconsciously competent," or you react correctly every time without thinking about it.

One solution is to get an appropriately-sized dirt bike and locate a flat, smooth, firm, dirt straightaway. Designate a point where you want to stop, and accelerate through 4th gear toward it while sitting down, then apply both brakes gradually and develop good braking feel. Couple that precise feel with great judgment until you confidently and fully utilize the front brake to stop where you want to stop every time.

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

and barely manage a stop just short of a collision. The driver just shrugs at you and takes off. You were fortunate that it wasn't a blind right turn, where your sight distance would have been much shorter. You can't believe anyone would try a dumb stunt like turning around on a busy highway.

Sometimes it's hard to comprehend the over-optimistic but improbable maneuvers other drivers will attempt. Apparently, this guy needed to make a U-turn, and didn't see any problem with doing it in the middle of the highway.

He was unfamiliar with how much room that would take for his rental vehicle, and had to do some backing and filling.

To survive such dumb stunts, you need to keep your head in the ride, and think way ahead of your machine. It's not that you should predict some nimrod like this blocking the road around every blind corner. More to the point, when you are rounding any corner where your sight distance is limited, think about what hazards might be hidden from view. While you still have distance to maneuver, transition to braking. When

you are surprised by some hazard, your evasive action will be determined by your habits.

So, when cornering on a road with limited views, it's a good habit to transition from throttle to brake, to build the "muscle memory" to brake automatically when needed. And, of course, it will help if you periodically practice quick stops away from traffic.

David L. Hough has written *Street Strategy* for more than 20 years, offering hundreds of tips. This is his final submission to MCN.

REVIEWS

INNOVATION

» ReadyRamp BED EXTENDER

The ReadyRamp bed extender encloses a lowered tailgate for increased truck bed carrying capacity, uniquely transforming into a loading ramp as well as folding nearly flat for easy storage.

Recently redesigned to be 15 percent lighter than the 15-year-old original, the ramp is made from light, but sturdy, 6061 T6 aluminum. Weighing only 19 (compact) or 21 pounds (full size), it supports loading of bikes up to 600 pounds. Mounting is accomplished via the truck's tailgate latches (no bed drilling is required), though this makes it less than ideal to use as an in-bed cargo hold with the tailgate closed.

The ramp comes only partially assembled, requiring the installation of the crossbar rungs, which use tri-sided self-tapping Torx buttonhead screws and an included Torx driver bit—to reduce the possibility of stripping a



head. The extrusions are made for the exact screw and the galvanic response to the dissimilar metals ensures they will stay in place. Self-tapping means that the holes aren't threaded and the screws must cut into the metal—they are quite difficult to drive in.

I stripped two Torx bits while powering the ReadyRamp together with a drill—it would be nearly impossible to assemble with hand tools. The included directions aren't comprehensive, but it's relatively straightforward and there is an assembly video on the website. The design choices are a series of intelligent compromises—weight versus strength



versus cost, sold unassembled to reduce oversized shipping charges. We'd suggest alternately offering the ReadyRamp pre-assembled, it would be worth the substantial extra assembly and shipping cost for some buyers.

ReadyRamp is a simple, attractive, affordable, multi-purpose aluminum or satin black bed extender that doubles as a loading ramp and we highly recommend it for its versatility. \$200 for small trucks and \$230 for full-size beds.

—David Hilgendorf



ReadyRamp,
readyramp.com

» Scorpion Sports EXO-GT3000

Scorpion's EXO-GT3000 is a solid performer in the increasingly competitive field of midline modular helmets, boasting several unique features that many more expensive brands don't offer. Chief among them are the "Airfit" cheek pads, which can be rapidly inflated via a large red air pump button, and instantaneously deflated via a release valve, all located on the neck roll. The end result is a truly individual fit which is quick and easy to adjust, even with gloves on.

The rest of the interior is quite posh as well. The KwickWick III anti-microbial liner is soft and luxurious, and the crown, cheek pads, and neck roll are all easily dismantled and fully washable. A removable "aero skirt" is also included to effectively block wind from blowing up into the chin area, for more comfortable cold weather riding. (As an added bonus, it also cuts down significantly on the inherent noisiness of the modular configuration.) Generous speaker cutouts beneath the helmet liner can be removed for more room if desired.

The exterior is equally well designed. The shell itself is constructed of a five ply "TCT-Ultra" shell, which consists of fiberglass, aramid and organic poly-resin fiber blends sandwiched between

glass fiber mats. A two-position chin vent aims airflow either at the shield (to help prevent fogging) or directly to the face when fully opened, while two more vents at the front peak channel the airflow over the head before exhausting it through two more passive vents just under the spoiler on the helmet's rear. The standard clear face shield is scratch resistant, 100 percent UV blocking, and anti-fog coated. MSRP starts at \$359.95 for solid colors, or \$379.95 for multi-color models.



—Moshe K. Levy



Scorpion Sports, Inc., **scorpionusa.com**

DAVID HILGENDORF, MOSHE K. LEVY

» Wolfman Luggage

WOLFY ESCAPE PAK

Wolfman's Wolfy Escape Pak offers riders valuable storage and hydration, in a well-constructed package that includes many moto-specific features.

The rugged 1680 denier ballistic nylon exterior shell measures approximately 18" high x 12" wide x 6" deep and offers 0.5 cubic foot capacity, or more than enough to swallow a day ride's worth of food and sundries. Commuters will easily be able to store most midsize laptops, full size tablets, and the usual paperwork with room to spare between the main storage compartment and the single exterior zipped pocket. Six internal subpockets help to keep smaller items organized, while integrated holsters on each side of the main shell are perfect for storing water bottles. Even more storage can be added with the included "Rolie Patch," an 8.5-in. high x 6-in. wide rubberized slotted section on the bag's main face, onto which Wolfman's optional "Rolie" storage bags and "Wolfy" bottle holders can be quick-attached using extra straps. We did not test these optional items. All zippers are oversized YKK units, and the main compartment has a yellow tether on its #10 zipper, so it's easier to locate in low-light conditions.

Behind the main storage compartment facing the rider's back, another foam-lined compartment houses a 100 oz. HydraPak fluid reservoir. Useful hose length is a very generous 30 inches, and multiple nylon loops on both right and left shoulder straps allow the rider to route the hose on either side. The hose terminates in a lockable bite valve, and the whole hose assembly can be quick-detached from the reservoir for easy cleaning and refilling.

The fitment system consists of two breathable mesh main shoulder straps, a single sternum strap, and a beefy waist belt. These various straps all provide more than enough adjustment capability to fit comfortably over any jacket, from thinnest summer mesh to the bulkiest winter gear.

The Wolfy Escape Pak proved to be a supremely functional, all-day comfortable, and extremely rugged companion. The waist belt worked wonders in distributing the Pak's weight over my entire back, dramatically reducing stress on my shoulders during longer rides. The hydration hose held tight with the included nylon loops on the shoulder straps, with no flopping around at speed, nor did the bite valve leak. The "Reflex" reflective stripes on the Pak's rear, sides, and front straps really popped at night when hit with headlights. MSRP, \$189.99

—Moshe K. Levy



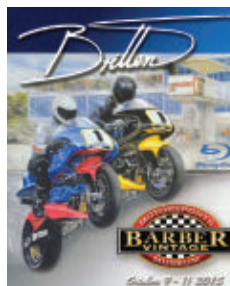
Wolfman Luggage, wolfmanluggage.com

» Documentary

BRITTENS AT BARBER

Seeking a special attraction for the Barber Vintage Festival, organizers reached out to the "caretakers" of the 10 existing Britten V1000s. John Britten's hand-designed, blue and pink bikes were manufactured in his garage in New Zealand in the early 90s. "The Britten" won podiums against factory motorcycles at Battle of the Twins, recording the fastest top speed at Isle of Man TT and four world speed records. John died before the bike made it to market.

The video is about nine owners from around the globe shipping their bikes in for the Barber Vintage Festival. We would have enjoyed an even deeper dive into how the Barber staff handles such priceless machines. It's fun to watch Brittens being bump-started and five are taken on the track for a few slow-paced laps. Unfortunately, the amazing aural bliss coming from the bikes is overlaid with loud rock music.



Built in beautiful Christchurch, New Zealand, the video only briefly covers a pair of earthquakes there that nearly destroyed three of the bikes. In the early 90s, someone had the incredible foresight to document the production process of the Britten, released in 1995 as the documentary *One Man's Dream* (out of print). Barber should acquire the rights and re-release both documentaries together with additional focus on the speech by Kirsteen Britten, inspiring people to follow their dreams, and an expansion on the extremely brief coverage of how and why individual components were designed. A video breakdown of Britten's innovations would be a must-have for any motorcyclist.

The limited video from the 1990s is low resolution and there's an unnecessary segment on the auction dinner and posing with the bikes for photography. However, for Britten fans, this is a worthwhile addition to your collection. Those curious about Britten history will be better served hunting for a copy of *One Man's Dream*.

Receive a free Blu-ray of Brittens at Barber with membership in the Barber Museum Turn 9 Club (\$80, purchase or renewal) by entering "BRITTEN" in the comments section of your online order.

—David Hilgendorf

barbermuseum.org/the-museum/become-a-member





The KTM 1290 Super Duke GT sport tourer makes great power, corners like a racebike and is all-day comfortable. About the only thing it can't do is go off road.

A POWERFUL PURSUIT OF PERFECTION

KTM 1290 SUPER DUKE GT HAS A LOT TO LIKE, FEW FLAWS

> Text by **David Hilgendorf**
Photos by **Gina Cioli**

The LC8 platform includes the 950, 990 and 1190 engines used in the Adventure and RC8 sportbike.

When KTM unleashed the beast, aka the 1290 Super Duke R, Motojournalists raved, including us (MCN 3/14). The GT modifies the hooligan R, adding additional touring-friendly features.

ENGINE

The liquid-cooled, 1301cc 75-degree V-twin engine has only a slight horsepower and torque reduction from the R, maintaining more than 75 lb.-ft. of torque from 3,700 to the 9,800 rpm limiter and ramping linearly to a peak of 145 hp at redline. The engine pulls hard, everywhere. KTM updated the cylinder heads and timing with narrower intake ports, reshaped combustion chambers and mapping, required to



meet Euro4 and designed to maintain sport performance with smooth throttle response—no easy task. With 9,300 mile service intervals, maintenance shouldn't be overwhelming. A new under-engine exhaust system and a stainless steel muffler with a seven-map internal flap-per valve moderate noise in every gear.

Three ride-by-wire throttle modes include Rain, which cuts power by a third. Street offers a less than one-to-one ratio of throttle, which means more twisting is necessary to achieve the same results of Sport mode—where we spent most of our time. Throttle response is so perfect, there's little need to dial it back.

If throttle control isn't optimal, the bike still has you covered. Multimode, lean-angle sensitive traction control (MTC) offers three levels of engagement, tied directly to the ride modes, and allows limited rear tire slip and front wheel lift in Sport mode. MTC hampers wheelies, so it can be disabled.

Performance settings are maintained through a power-cycle, with the exception of ABS and MTC reactivating if they were disabled—smart. The GT's available options will fit most rider's needs.

TRANSMISSION

Gears shift near flawlessly, exhibiting an occasional stubbornness shifting to neutral. Sixth gear at 65 mph feels like it's choking, fifth gear is more comfortable—so is riding faster. The mechanical slipper clutch can be assisted by an optional electronically managed Motor Slip Regulator (MSR), which monitors torque from the engine and matches engine speed with wheel speed for smoother downshifts and reduction in wheel hop. The quickshifter only upshifts, almost as smoothly, but certainly quicker than engaging the clutch.

BRAKES & WHEELS

Combined-ABS (C-ABS) ensures the rear brakes are engaged when squeezing only the front brake lever (not vice-versa), and prevents wheel lock.



SUSPENSION

The GT includes a three-mode semi-active Suspension Control Unit (SCU), originally on the 1290 Super Adventure. Comfort mode is soft, but firms slightly when the bike leans. Street offers tighter handling and maintains comfort mode's anti-dive programming, which keeps the front end level when braking. Sport mode allows the suspension to dive under braking, enabling quicker turn-in. All modes are dynamically adjusted within milliseconds; depending on various active electronic measurements.

The 48mm WP USD fork offers 4.9 inches travel. A steering damper keeps the front wheel tracking straight when things get light up front, which is easy to do. The single rear WP shock offers up 6.1 inches of travel. Rear preload can be set electronically when stopped to adapt to various load configurations.



Selectable modes include Supermoto, which allows locking the rear wheel, and disabled. The Bosch Motorcycle Stability Control (MSC) module, monitors lean angle so traction control and ABS engage in appropriate quantities, whether leaned over or vertical—overriding limits that skilled riders have trained for years never to test.

Brembo's stellar M50 monoblocks are capable of bringing the bike to a halt rapidly, but ABS performance was a bit inconsistent when trying to achieve the shortest possible stop. The best stops required numerous attempts at threshold of wheel lock, not simply grabbing a handful of ABS and letting the computer work its magic—unlike the other technology. A Hill Hold Control option (\$225), keeps the brakes engaged for five seconds after the front brake is released or until the machine moves forward.

ERGONOMICS & HANDLING

A longer aluminum rear subframe allows a larger passenger seat and adds integrated mount points for the cleverly engineered 8-gallon hard bags. The bags include key positions for locked, unlocked and one-handed removal. To reduce weight, they are made entirely of plastic, which isn't molded perfectly, leaving gaps toward the front. They also require attention to latching sounds and mounting points to prevent a mishap, where perhaps the latch or bag comes undone (it happened). Mid-sized helmets may fit inside either bag, snugly.

Cockpit ergonomics were improved for touring by lowering the rider and passenger footpegs and adding a 1-inch wider and 3/8-inch higher handlebars. The four-way adjustable handlebar riser is reversible; bringing the bar ends 1/2-inch closer. Rotation in the clamp allows even further customization.

The new 32.9-inch high seat is larger and more padded. Our test mule came with the optional comfort seat which measured at 33.75 inches. The narrow profile of the bike and remarkably low



and well-balanced weight made for comfortable tiptoeing or one-leg-down stops, with a 32-inch inseam. The adjustable windscreen is easily manipulated single handed and offers modest coverage. Touring riders will likely opt for something more robust.

INSTRUMENTS & CONTROLS

The shifter and brake pedal offer three positions each and both hand levers are reach adjustable and require moderate pull. Self-canceling turn signals switch off after 10 seconds or 500 feet in motion. KTM's cruise control is activated by a button on the right cluster and can be engaged in third gear or higher, up to 125 mph. A tire pressure monitoring system alerts when pressure is low. There is also an rpm adjustable upshift indicator. A four-way directional pad enables easy access to configuration settings. Though heated grips are standard, there is no dedicated button, so adjustment requires thumbing through the menus. Fortunately, it's easy to set menu favorites for frequently used selections.

The primary instrument cluster includes an analog tachometer and an LCD display for the speedometer, clock, gear indicator, engine temperature, fuel level and icons for the selected ride and suspension modes.

The instrument cluster and hand-adjustable headlight are attached to the frame-mounted fairing. The fairing also includes integrated LED cornering lights (three per side)

that engage one at a time, depending on how far the bike is leaned. The cornering lights fill in the gaps below the forward-firing headlight, up to about 20 feet, noticeable on the road, but also illuminating the forks. A 6-gallon tank provides a range of approximately 200 miles, even when ridden hard.

ATTENTION TO DETAIL

Adjustability is a key element of the design, though we didn't find it necessary to adjust anything. There is little to fault with the GT, only a few minor gripes. The right switchgear is gigantic, despite engaging only four functions. Short mudguards allow the wheels to quickly dirty the bike. Pannier lids don't close flush, leaving a gap along the front edge. The simple adjustable screen offers six heights, though the top and bottom positions would likely be enough.

VALUE

The Super Duke GT is feature-priced competitively with the Ducati Multistrada 1200, Yamaha FJR 1300ES, Honda ST1300 and BMW R1200RT. Deciding factors at this price are often rider height, styling and brand loyalty.

Anyone shopping sport or touring bikes, should double-check their sanity if they don't put the GT on the short list. It's really everything everyone says it is. **MCN**



TESTERS LOG

I've been looking forward to riding the GT since it was announced early last year. What I didn't expect is how much I would like it. If I were looking for a comfortable, sporty, street and track friendly bike with a reasonable luggage capacity for day-to-day use, there is no bike I would rather own. About the only things that might preclude anyone from considering this motorcycle are the required length of inseam, lack of dirt capability or sticker shock. It does so many things right, including fixing stupid rider errors, that seeking faults merely gives owners an excuse to customize it further to their whims and desires. Highly impressed.

—David Hilgendorf

This is definitely a contender for best bike on the road. It's not the power, though it will smoke anything short of a dedicated race bike. It's more about the way a rider can use all that power so precisely. The power is exhilarating, intoxicating, yet manageable and usable. It corners like a sportbike, yet is comfortable enough to ride all day with its upright seating. Electronically adjustable suspension, ride modes, traction control, heated grips, large storage bags—this is the go-anywhere, do-anything motorcycle. Well, no dirt. But zip around and through rush-hour traffic, then pack the bags and head out for a weekend destination.

—Russell Evans

» QUICK HITS

MSRP: \$19,999

Category: Sport Touring

Displacement: 1,301cc

Engine Type: 2-cylinder, 4-stroke, 75° V-twin

Warranty: 24 months

GVWR: 1,005 lbs.

Wet Weight: 515 lbs.

Carry Capacity: 490

Seat Height: 32.9 in.

Colors: Orange; Anthracite

» SPECIFICATIONS

Valvetrain: DOHC, 4 valves/cylinder

Bore & Stroke: 4.25 in. x 2.8 in.

Compression Ratio: 13.1:1

Transmission: 6-speed claw gears

Final Drive: Chain 17/38

Fueling: Keihin EFI

Tank Capacity: 6.1 gallons

Fuel Grade: 91 octane

Exhaust: 2-into-1

Ground Clearance: 4.75 in.

Wheelbase: 58.3 in.

Rake & Trail: 25° / 4.2 in.

Tires: Pirelli Angel GT

120/70 ZR17 front; 190/55 ZR17 rear

Brakes: ABS, 4-piston, Brembo mono-bloc M50 dual 320mm front; 2-piston single 240mm Brembo rear.

Suspension: WP semi-active 4.92 in. travel, front; WP semi-active mono-shock, 6.1 in. travel, rear

» ELECTRICS

Battery: 12V, 11.2Ah

Ignition: Digital Electronic

Alternator Output: 14V, 448W

Headlight: 12V, 60/55W

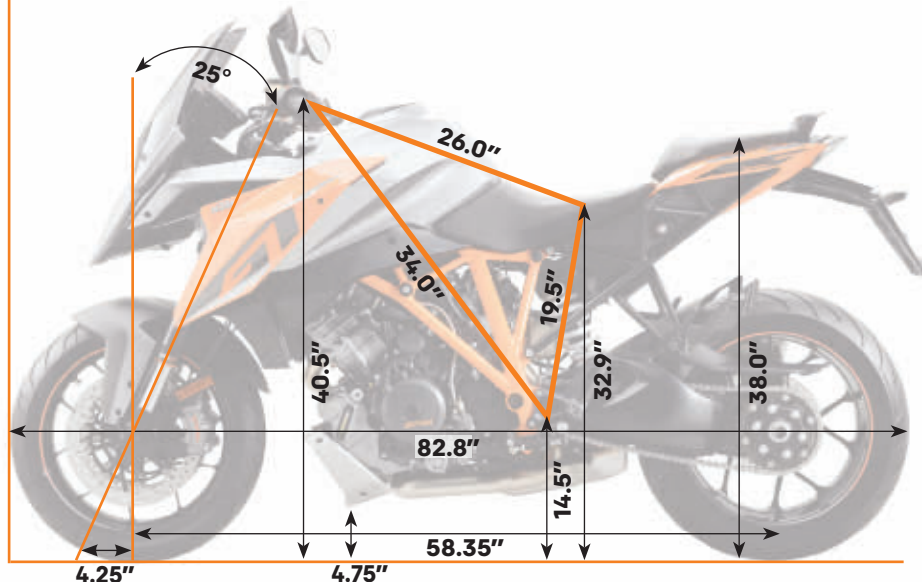
Instruments: (digital) speedo, clock, fuel, trip, mpg, load, drive mode, gear, settings, heated grips; (analog) tach

Indicators: High-beam, neutral, oil, signals, engine, security, shift, safety warning, ECU, TC, ABS, low fuel, cruise

» MAINTENANCE (estimated)

(\$100/hr.)	Miles	Labor	Parts	Total
Routine:	9,300	\$280	\$125	\$405
Valves:	18,600	\$250	\$30	\$280

» GEOMETRY



» PERFORMANCE

Fuel Economy (MPG)

High: 40; **Low:** 32; **Avg:** 33

Est. Range: 200 mi.

60-0 mph: 120.52 feet

0-60 mph: 3.63 seconds

1/4-mile: 11.7 sec. @

126.72mph

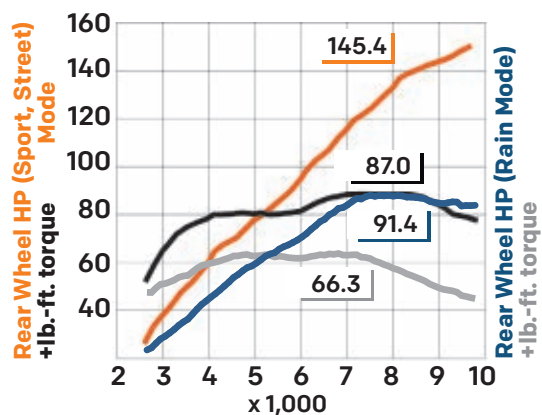
Power to Weight: 1:3.55

Speed @ 65 mph: 64

RPM @ 65 mph: 3,900

RPM @ limit: 9,800

» HORSEPOWER & TORQUE



SMILES

1. Incredible power
2. Functional technology
3. Light and nimble

FROWNS

1. Tall seat
2. Gets dirty easily
3. Pricey

» EVALUATION

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

MODEL

EVALUATION

2017 HARLEY-DAVIDSON CVO PRO STREET BREAKOUT

Long, lean and mean, the Harley-Davidson CVO Pro Street Breakout packs a strong styling punch with its high-end paint and blacked out features.



IF LOOKS COULD KILL

H-D CVO PRO STREET BREAKOUT IS A FEAST FOR THE EYES

> Text by **Russell Evans**
Photos by **Gina Cioli**

There are motorcycles with more power, more torque, better handling and comfort. But when it comes to looks, just stop-you-in-your-tracks, snap-your-head-around and drop-your-jaw looks, Harley-Davidson's

CVO Pro Street Breakout is near the top of the chart.

The Custom Vehicle Operation version is a \$6,400 upgrade to the sub-\$20,000 drag racing-inspired Breakout platform. Long, low and a little bit loud, with extremely raked inverted forks, a 19-inch front hoop and a massive 240mm rear, the Breakout is quintessential Harley-Davidson.

The drool-worthy CVO is awash in refinement, most noticeably in its aesthetics. Our test bike was clad in a new Scorched Apple and Starfire Black color scheme that included the frame and some hand-painted brand graphics. This gives the bike a striking custom paint shop appearance. It also sets the tone for a very dark profile, including black, 5-spoke wheels and a "smoked

satin" chrome finish on exhaust pipes and engine components. Basically, any place there would normally be chrome on a Harley there is instead a gorgeous bronze tone. The race-inspired seat, handlebar, headlight-surround speed screen and chin spoiler all integrate with the overall dynamics.

Even with all of its show bike looks and fancy finishes, the CVO Pro Street Breakout isn't just crotch candy. There are significant performance upgrades as well that make this a serious street machine, one likely to be coveted by those who appreciate lots of straight-line American muscle.

TRANSMISSION

Shifting is far from buttery-smooth; in fact, it's a bit clunky at the stoplight, which one might expect from a big-bore American V-twin. But once underway, there's no trouble finding the gears, and we didn't miss a single shift in transit. The 6-speed "Cruise Drive" with high performance assist & slip clutch with hydraulic actuation facilitates a smooth transition, and neutral is easy enough to find.

There was no sign of the clutch master cylinder problems that prompted a recall of more than 27,000 Harley-Davidsons in 2016. One of the maladies was a clutch with too much free play. Our test bike had no such issue; in fact, engaging the clutch required a powerful left hand squeeze.

Shifting presented an awkward reach



ENGINE

The Screamin' Eagle Twin Cam 110B engine is a sizable upgrade from the standard Breakout's 103 ci. motor. Our dyno proved the CVO to be a true torque monster, as advertised, brushing up against a century with a max output of 98.56 lb.-ft.

This engine lives in the low revs, and short shifting is appreciated. Despite its drag racing influence, riders are in no danger of having arms jerked out of sockets; the engine pulls through each of six gears with deep, satisfying power.

Intake from the blacked-out Heavy Breather Elite air cleaner feeds four pushrod-operated, overhead valves per cylinder, with hydraulic, self-adjusting lifters, outputting an maximum 74.40 hp. Electronic Sequential Port Fuel Injection handles fueling.

The rear brake is actuated through a reduced reach pedal, a CVO feature.

The black, five-spoke Aggressor wheels (19-in. x 3.5-in. front, 18-in. x 8-in. rear) are a decided departure from the multi-spoke chrome wheels of the standard Breakout. They're sporty, although one long-time Harley owner—who loved the overall look—opined that they appear to be on backward.

SUSPENSION

This was such a pleasant surprise. The 43mm inverted forks stemming from a new triple clamp design provide nearly 5 inches (125mm) of travel. They do a wonderful job of soaking up the bumps. Out back is a hidden, horizontal-mounted coil-over spring with 3.6 inches (92mm) of travel. The damping feels just right, creating a smooth and stable feel on long sweeping turns. Even the tubular steel frame (rectangular on the backbone) and swingarm are color matched with the rest of the bike. Functional, and a nice touch.

INSTRUMENTS & CONTROLS

A single canister mounted on the tank side of the bar houses a digital speedometer and analog tachometer. There's also digital readout for fuel level (decreasing LCD bars) and gear selection. High beam, neutral and turn signal indicators take up minimal space, located in a narrow horizontal panel just above the speedo.



because of the forward and elevated positioning of the shift lever. Not a problem for those with a size 16 foot; the rest of us have to slide the left heel forward or even up off the peg to kick the lever.

BRAKES & WHEELS

The four-piston caliper, dual 300mm disc front brakes with ABS do an ample job of slowing and stopping this 727-pound bike, aided by a twin caliper, single 292mm floating rotor setup on the rear.



TESTERS LOG



As a former Victory Hammer owner, this bike had a familiar

feel. Both bikes get crazy style points and are bitchin' to stare at. I had to ask myself the same old question: What is this bike best suited for?

The answer is short hops, along sweeping curves, atop smooth asphalt, between lemonade stands. Park it and let others get an eye full.

Commuting? Cross-country? No. But a Saturday cruise with friends to strut your stuff and show off your rolling work of art? Oh, yeah.

One speed shop proprietor who is also a Harley-Davidson owner said that with a pipe and fuel mapping, this bike would have more snap and run better. For \$25,699 it shouldn't need anything.

—Russell Evans

My love-hate relationship with Harley continues. I love the sound, feel and thrust of this amplified engine, never longing for a higher rev-limiter.

The brakes are unbelievably fantastic—consistently stopping nearly half a ton (with rider) in less than 120 feet. The suspension actually works! If Harley built all of its bikes this well and priced them competitively, they would stop forfeiting market share.

On the flip side, the seating position is horrid and lean angle non-existent (see picture above). I quickly wore down the pegs and my boots, after which the engine case was a traction leverage point. A 26-inch seat height is irrelevant if legs don't reach the pegs and you grind right off the road.

—David Hilgendorf



Turn signal buttons are on their respective ends of the handlebar. Other buttons, such as lights, high beam, power and start are within reach; still long fingers are a big plus. A palm-size electronic fob arms and disarms the alarm and needs to be in the vicinity to start the bike. It has a pop-out tubular key for the fork lock.

ERGONOMICS & HANDLING

Ergonomics? Sorry, this bike was built to look cool, not jibe with the human skeletal structure. That meant something had to give and that something was comfort. The drag-style handlebar and forward foot controls are touted in marketing to promote an aggressive riding position. Indeed, the Breakout's forward grips, controls and pegs are completely manageable for larger riders, say, 6-feet-4, or those with inordinately long limbs (including fingers and toes). But even they must ride with rigid posture to avoid an aching back after only about an hour in the saddle. Unless they sit on the tank, those of shorter stature may find themselves bent like a horseshoe.

Once a workable position is found, the CVO Breakout handles OK; just take it slow on that first hairpin. One tester, who loves a good turn, kicked up plenty of sparks during leans thanks to the paltry, 4.5-inch ground clearance. In the end, we found that extending the heel of a boot from the low pegs and skimming the pavement served as a simple and effective feeler for approaching maximum lean angle (24.8 degrees right, 25.5 degrees left).

The tapered, knurled grips are excellent, maybe the best we've grabbed onto. They're something like circular rubberized pistol grip panels, with half-inch gaps in-between, around the circumference. The tapering is a nice touch (literally) and the feel is that of a subtle cone shape.

ATTENTION TO DETAIL

The custom paint scheme with hand-applied graphics is what the CVO Pro Street Breakout is all about. From the blacked-out Screamin' Eagle engine finish to the Heavy Breather Elite performance air cleaner, custom mirrors, staggered blunt cut mufflers, LED headlights and chopped fenders, this bike is a work of art. Even the exposed chrome braided fuel lines add to the texture and bold aesthetic. There is no ugly gas tank cap to mess things up, either. Instead, the black plastic plug is spring-loaded and sunk into the tank, loosened and tightened with a two-finger pressure downward turn.

VALUE

So, who will pay at least \$25,699 for a short-distance cruiser that doesn't turn all that well and is mostly uncomfortable to ride? Indeed, it is a limited edition, with limited capabilities and, presumably, limited interest.

With the dynamite looks of the new Scorched Apple theme and better than average performance, this bike might be just the thing for tooling around town and showing off. The lifestyle upon which Harley-Davidson has created its iconic culture. **MCN**

2017 HARLEY-DAVIDSON CVO PRO STREET BREAKOUT

CycleStats™

» QUICK HITS

MSRP: \$25,699

Category: Cruiser

Displacement: 110 ci. (1,801cc)

Engine Type: Screamin' Eagle®

Air-cooled, Twin Cam 110BTM

Warranty: 24 months

GVWR: 1,175 lbs.

Wet Weight: 727 lbs.

Carry Capacity: 448

Seat Height: 26 in.

Colors: White Gold Pearl/Starfire
Black, Scorched Apple/Starfire Black

» SPECIFICATIONS

Valvetrain: Pushrod OHV, hydraulic,
self-adjusting lifters; 4 valves/cylinder

Bore & Stroke: 4 x 4.374 in.

Comp. Ratio: 10.2:1, 9.2:1 (APC)

Transmission: 6-Speed Cruise Drive

Final Drive: Belt, 32/66 ratio

Fueling: Electronic Sequential Port
Fuel Injection (ESPFI)

Tank Capacity: 5.0 gal.

Fuel Grade: 91 octane

Exhaust: 2-into-2

Ground Clearance: 4.5 in.

Wheelbase: 66.1 in.

Length: 92.5 in.

Rake & Trail: 35° / 7.7 in.

Tires: Dunlop, D408F 130/60B19 61H
front; D407 240/40R18 79V rear

Brakes: ABS, 4-piston, fixed caliper,
dual 300mm, front; 2-piston, floating,
single 292mm rear.

Suspension: 4.92 in. travel, USD front;
3.6 in. travel, dual shocks rear

» ELECTRICS

Battery: 12V, 19Ah, 405 cca

Ignition: Electronic

Alternator Output: 625W

Headlight: Multi-LED 24W/26W (each)

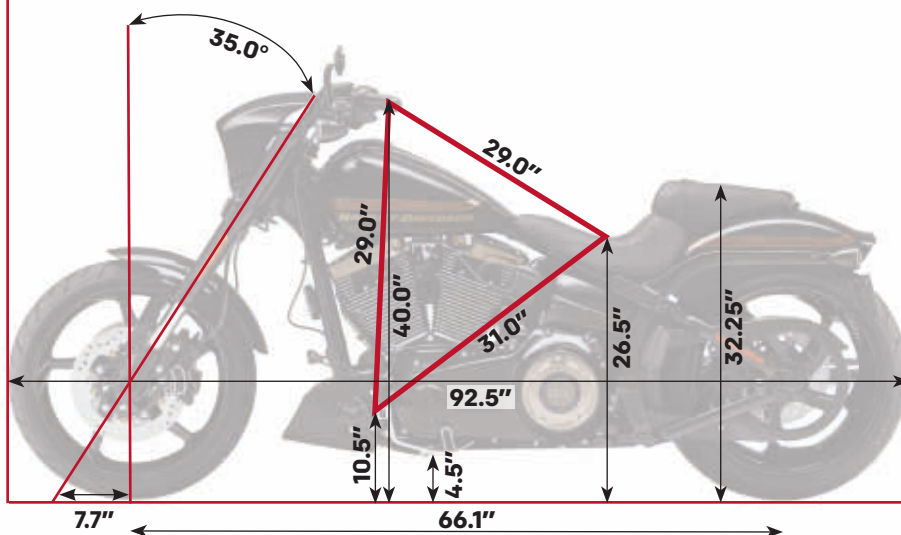
Instruments: (digital) speedo, clock,
fuel, trip, mpg (analog), tach

Indicators: High-beam, neutral, oil,
signals, engine, security, low fuel,
cruise, ABS

» MAINTENANCE

(\$100/hr.)	Miles	Labor	Parts	Total
Routine:	5,000	\$340	\$75	\$415
Valves:	N/A	N/A	N/A	N/A

» GEOMETRY



» PERFORMANCE

Fuel Economy (MPG)

High: 39; **Low:** 32; **Avg:** 35

Estimated Range: 175 mi.

60-0 mph: 117.84 feet

0-60 mph: 4.73 seconds

1/4 mile: 13.75sec.

@ 97.49 mph

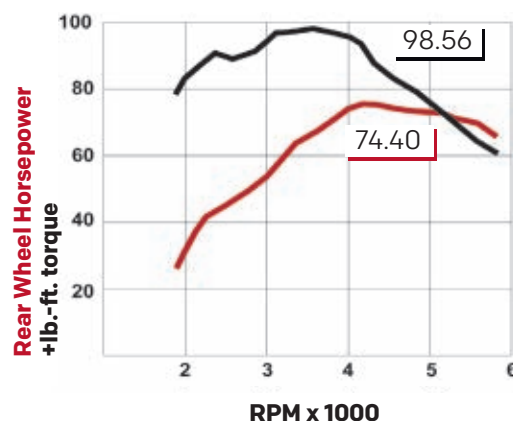
Power to Weight: 1:9.77

Speed @ 65 mph: 63 mph

RPM @ 65 mph: 2,350

RPM @ limit: 5,800

» HORSEPOWER & TORQUE



SMILES

1. Drop-dead gorgeous
2. Screamin' Eagle power
3. Brakes and suspension

FROWNS

1. Ergonomics
2. Scraping hard parts
3. A bit pricey

» EVALUATION

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

RETIREMENT IS THE Last Word

MCN'S LONGTIME 'PROFICIENT' WRITER DAVID HOUGH WRITES FINAL COLUMN, BIDS FAREWELL TO MOTORCYCLE JOURNALISM

► By **David L. Hough**

On April 25, 2017, I'll have been around for 80 years, of which I've been a motorcyclist for 50-something. I've decided that it's time to wobble down off the soapbox and give others the opportunity to offer counsel on the fine points of driving a motorcycle.

I had "retired" once before, but when Dave Searle asked me to fill in temporarily to allow Ken Condon to move over to *Motorcyclist*, I agreed.

Let me be clear that my "retirement" from MCN is not a result of personality conflicts or editorial pressure or negative reader comments. It's just time to pull in my horns a bit, downsize, and focus more on personal issues, such as my vintage body.

In my opinion, the primary reason for the existence of MCN is to bring to subscribers topics that other commercial magazines don't dare cover. Magazines kept afloat by advertisements can't afford to say anything that might offend the motorcycle industry. MCN is the only commercial magazine with the chutzpah and means to tell the story without retribution from the industry.

I had generated a few years of "Safety" columns for Road Rider magazine, which had been created by the late Roger Hull. The Proficient Motorcycling column got started back when Bob Carpenter was editor. Bob had been my mentor, and gave me more help and latitude than I deserved.



Through his career, David Hough educated thousands of motorcyclists about riding smarter, safer and more proficiently. A best selling author and contributor to MCN for more than 20 years, Hough was inducted into the AMA Hall of Fame in 2009.

As Road Rider was morphing into Motorcycle Consumer News, I had generated a half-dozen new columns about riding skills, which Bob intended to run every other month. With the pile of columns on the table, Bob and I sat down to discuss a new title that would be appropriate. “Safety” was out. We brainstormed and tossed a few names back and forth. It was probably Bob who blurted, “Proficient Motorcycling?”

That hit the nail on the head, because it meant getting better rather than trying to be less unsafe. Bob suggested I start turning the crank a little faster so he could publish one every month. Over the ensuing years I generated a long series of monthly Proficient Motorcycling columns, many of which eventually found their way into my books, published originally by MCN’s parent company, Bowtie Press.

Book royalties helped cover my travel expenses as I visited other countries, where I attended rallies and conducted seminars on riding skills. It was during this stretch that I also shamelessly adopted an idea from Fred Rau. Fred would have morning “Coffee With Fred” sessions at Americade. He would simply arrange for a big urn of coffee and people could sit with the famous journalist and discuss whatever was on their minds. I started doing Friday and Saturday morning “Coffee With Dave” sessions at the big international BMW rallies, which eventually grew to large rooms packed with rally-goers.

Street Strategies started out as an April Fools’ Day joke. I had written some tips under contract to the Motorcycle Safety Foundation. Some of those tips went into the Instructor Guide for the MSF Experienced RiderCourse. I knew that some of the staff at MSF read MCN. I thought it would be a clever joke to generate an additional tip in the same style, knowing that staff—especially the late Peter Fassnacht—would immediately begin paging furiously through the ERC IG, to find its source. I got it to Fred Rau in time for the April issue, but Mur-



DAVID HOUGH

For more than 20 years, best selling author David L. Hough has written a regular feature in MCN to help readers ride better, learn what to look for and avoid crashes. Hough followed up his first book, **“Proficient Motorcycling: The Ultimate Guide to Riding Well,”** with three more that expanded on his riding concepts, teachings and observations.

Hough has received two **“Excellence in Motorcycle Journalism”** awards from the Motorcycle Safety Foundation, and in 2009, he was inducted into the **American Motorcycle Association Hall of Fame**. He has educated legislators on the realities of motorcycle safety and has helped launch safety programs in the United States and Canada.

phy’s law intervened. Space was tight in the April issue, so the surreptitious Street Strategy got bumped to May. Then, the MSF fired half of the staff, including Fassnacht. I should have known better than to try to joke with the MSF.

Nonetheless, Fred liked the idea of Street Strategies enough that he encouraged me to keep writing them, and the half-page column appeared in every

issue for many years. Then, one June, just before rushing off to the Americade at Lake George, New York, Fred opened the file drawer to get a fresh Street Strategy, and found the file empty. When I bumped into Fred a few days later, he mentioned that over the years no one had ever said anything about the column—nothing negative; nothing positive; nothing. Fred suggested that if there was so little interest, MCN could use the space for something else. I agreed, since I had plenty of other tasks to accomplish, including a full-time job at The Boeing Company in Seattle.

When I got home, there was a frantic call from Fred. Apparently, the results of an MCN reader survey had just come in, and the number two reason for subscribing to the magazine was Street Strategies. Fred pleaded with me to get that SS file filled up. I chuckle to myself at the SS story, because it’s a reminder that we never know how our actions are going to turn out. An April Fools’ Day joke was turned into a feature that persists to this day. The joke was on me when I recognized the serious value of Street Strategies in developing situational awareness, which is critical to getting through traffic unscathed.

I think it was in 1999 that I mentioned to (then MCN editor) Lee Parks that I was approaching age 65, and it was probably time to retire. Lee explained that the way to get out of a job is to train your replacement. That June, I again headed to Lake George to attend Americade and, by chance, bumped into Ken Condon, who expressed an interest in breaking into motorcycle journalism.

A month later, Ken and I sat at a picnic table in front of the Motor Company’s engine plant in Milwaukee, scribbling diagrams on Harley-Davidson napkins. Not long after, Ken took over Proficient Motorcycling and Street Strategies columns. Having Ken assume responsibility for PM and SS didn’t mean I could saunter out to pasture entirely. I squandered attention elsewhere, including the Between the Ears column

FOND FAREWELLS



FRED RAU
MCN EDITOR
1991-1995

I first became acquainted with David's work sometime around 1978 (yes, nearly 40 years ago!) when, as a fairly new motorcyclist, I subscribed to Road Rider magazine.

Hough's early articles on safety and riding techniques were totally unique in the industry at that time. An incredible resource to myself and, I'm sure, thousands of other novice riders.

About 12 years later I had wormed my way into the RR offices as Managing Editor, by which time David, much to my dismay, had "retired."

When we started Motorcycle Consumer News in 1991 and I be-

came Editor in Chief, I made it my first priority to drag David back into harness, penning the new "Proficient Motorcycling" series. This, in turn, gave birth to his first book, then a second, third and so on.

David has always been a reluctant author, and has consistently refused to believe that there was much interest in what he wrote. Despite his prodigious output of incredibly cogent material, two books that broke records for sales in their genre, and eventually his induction into the very highest ranks of honor at the AMA Hall Of Fame, David has remained humble to a fault.

To say that David's work has saved thousands, if not tens of thousands of lives through the decades would not be an overstatement.

I count my friendship with David as one of the most fortunate and cherished happenstances of my career.



LEE PARKS
MCN EDITOR
1995-2000

I always loved the way David would describe how to pronounce his name. He'd say, "It rhymes with rough and tough."

Hough has been the most impactful influence on my career as a rider education professional. There are countless Hough contributions to the Motorcycle Safety Foundation's and Evergreen Safety Council's curricula.

Perhaps his greatest legacy is yet to be written. In the first year of my heavily Hough-influenced beginner riding curriculum (known as the CMSP Motorcyclist Training Course in California), there were 60 fewer motorcycle fatalities in the state than the year before. This at a time when

total California traffic fatalities went up 4 percent and motorcycle fatalities went up 10 percent nationwide. I can't help but think that, because of David Hough's interminable commitment to motorcycle safety, 60 additional families in the Golden State still have their loved ones with them. Put a price on that.

In 2010, while attending a motorcycle rally in the northwest, we temporarily traded vehicles. He ended up flying over the handlebars and totaling my brand-new Triumph Street Triple R when he applied too much brake to keep from hitting a slowing truck. When I turned around to ask if he was hurt, his no-nonsense response was, "How embarrassing!"

I think Hough's humility, candor and care for his fellow riders will always inspire me as much as his seemingly inexhaustible knowledge and wisdom. Enjoy your retirement David. You more than deserve it!



DAVE SEARLE
MCN EDITOR
2000-2015

An excellent writer, cartoonist, illustrator and photographer, Hough had been with Road Rider for a long time before I began freelancing for Bob Carpenter in 1988. I quickly discovered that we share a deep interest in technical matters.

When Hough tried to retire the first time, back in 2004, he had generously prepared Ken Condon to take over his Proficient Motorcycling franchise, yet Hough continued to pen Street Strategy for an additional six years.

When Condon called at the end of 2014 to say he was leaving, I called Hough right away, doing my best to persuade him to return, and reminding him that no other editor would have published his earlier exposés on the Motorcycle Safety Foundation. Thankfully, even after writing several best-selling books, he still had more to say. David meant to write only a few columns, but continued with MCN for another two years.

Although I worried that tales of crashing and danger might subconsciously reinforce fear, the effectiveness of Hough's lessons is undeniable. Every rider remembers the first riding technique that became routine strategy.

While corresponding with readers was always among the most gratifying parts of being editor, none of those letters could compare to the sincere thanks addressed to Hough, saying his column had saved someone's life!

David, I hope you enjoy your retirement. We'll never forget your dedication to our safety.

for BMWMOA Owners News, and skills articles for various other magazines.

In 2003, Fred Rau asked me to look into rumors about a conflict brewing between state safety programs and the motorcycle industry's training arm, the Motorcycle Safety Foundation. As a former MSF instructor, I had rudimentary knowledge of the system and a number of contacts.

As I investigated the rumors, I was startled to realize how the industry had carefully crafted a system of absolute domination of rider training. For instance, industry lobbyists had persuaded some states to use MSF terminology in laws. When the wording of the law states "training must be MSF Basic RiderCourse or equivalent," there are no possible equivalents.

Further, if a state didn't toe the MSF line, the organization could assess serious penalties, such as snatching back training bikes—on loan from the industry. I heard about training sites suddenly losing certification, and veteran instructors excluded from teaching further classes.

The essence of the rumors was that states were getting fed up with the crude, insensitive, domineering treatment by the MSF. But the real story became clear: The industry's ulterior motive was to get more butts on more bikes, and "training" served that purpose. The lesson I took away was that managing the dangers of motorcycling requires an understanding of how national program agendas affect the outcomes—not simply how one motorcyclist survives the ride.

In July 2004, Fred Rau joined me for the trip to Spokane, Washington, to attend the BMW Motorcycle Owners Association's International rally. He borrowed my vintage BMW 750 "toaster", and I drove my swoopy BMW K1/EZS



Second editions of David Hough's book, "Driving A Sidecar Outfit," are still in print. He donated the publication to the Sidecar Safety Program.

sidecar rig. "Coffee With Dave and Fred" was scheduled at 7:30 a.m. Friday, in a cattle barn at the fairgrounds. When we arrived at about 6:30, we were shocked to find the barn dark and no indication that the promised coffee was on the way. Fred quickly sized things up. "Do you have any idea of the riot that could take place if 200 people show up for coffee and there isn't any?" he said.

We eventually found a box of coffee grounds and a percolator hidden under the bleachers. I'm no stranger to how these things go, so I had brought along a lengthy extension cord and a water jug, and picked up a cheap coffee maker and some pastries the night before. We furiously got the percolators filled and powered up. Fred volunteered to keep the coffee brewing, freeing me to deal with the crowd. The coffee stampede was only a few minutes late.

The first "Trouble in Training" article had been published in MCN that spring. I hadn't considered that the article would be brought up at a BMW rally, but the very first question from the audience was, "Are you going to talk about the 'Trouble in Training' situation?" That set the tone for a serious discussion of national training issues.

After an hour or so, I thanked everyone for coming and closed the session, but I noticed someone lurking in the shadows, waiting for everyone else to leave. He wanted to tell me about the nastiness that was happening in his state, but he didn't want to be seen talking to me, lest word get back to the industry. We literally sneaked around behind the barn where he could secretly spill the beans about the industry intimidation.

That experience gave me confidence that my articles were on the right track. And it substantiated the rumors that "dissidents" can and

do get punished by the industry. That's a dark side of the story that I've been able to bring to light, based on direct information from people who have been involved. When I have written about such things, I have often been accused of an anti-MSF bias, but I have only attempted to reveal the truth.

OK, I'm "retiring" but I'm not crawling into a cave. I'll still keep my ear to the ground. From time to time, I might have another story I feel MCN readers would find interesting. My books, including *Proficient Motorcycling* and *Street Rider's Guide*, can still be found in both paper and e-book versions. *The Good Rider*, published by Mixed Media, is my explanation of what makes a "good" motorcyclist. *Driving A Sidecar Outfit* was donated to the Sidecar Safety Program, and the second edition is still in print.

I am indeed fortunate to have had the opportunity to write for the readers of Motorcycle Consumer News, and I'm pleased that I could bring up issues over the past two years that I felt were important to motorcycling. It has been quite a trip.

And, in case you were wondering, this is NOT an April Fools' Day joke.

DESTINATIONS

A GLORIOUS RIDE THROUGH HISTORY

BARBER VINTAGE FESTIVAL IS TWO WHEEL WONDERLAND

>Text and photos
by Mark Barnes

While Hurricane Matthew battered the southeastern coast on the weekend of Oct. 7, 2016, central Alabama enjoyed absolutely sublime weather—dry, mild and sunny, with gusty breezes merely hinting at the storm raging farther east. This idyllic atmosphere welcomed throngs of motorcycle enthusiasts (73,541, to be exact) gathering for the 12th Annual Vintage Festival at Barber Motorsports Park in Birmingham, Alabama.

It's hard to imagine a more diverse crowd or a more eclectic event. Certainly, the festival attracts a multitude of fans and machines you'd expect at a celebration of vintage motorcycling. But all ages of people and bikes were well represented, and anyone interested in motorcycles and their history—if only their very recent history—would find plenty to intrigue and entertain them. Warning: middle-aged folks who reflexively dismiss such fare as “old” and personally irrelevant will have to confront the reality that the bikes they rode as teenagers are currently—gasp!—antiques. So, take a deep breath, relax into this fact, and enjoy a broader swath of motorcycle-related pleasures.

Unfortunately, circumstances conspired to limit my sampling of this year's Vintage Festival activities to Saturday only. My hurried tour hit just some of the high points, but it would actually be impossible for anyone to see everything offered, even if attending all three days; there is so much going on simultaneously. Study the facility map



The Barber Vintage Motorsports Museum is one of the world's foremost collections of historic, meticulously restored vehicles—nearly 700 of them motorcycles, on five floors.

and attraction schedules in advance, then prioritize and plan your days accordingly. Although the sprawling 830-acre layout is well designed and free trams run continuously around the perimeter to make foot travel more efficient, events are widely spaced on the grounds and closely on the clock.

The Barber Vintage Motorsports Museum greets visitors near the park's entrance. It is a hulking structure, where about half the world's largest motorcycle collection is on display at any given time. Some gorgeous old racecars, including a special set of Lotuses, round out the assortment. The museum is truly an event in itself, and would have completely justified the trip to Birmingham, even without the Vintage Festival going on behind it. While it is open year-round, the museum can be accessed only by ticket-holders during events.

For a mere \$15, museum visitors can feast for hours, perhaps days, on a staggering array of motorcycles. From century-old treasures to modern masterpieces of every conceivable stripe, most look more pristine than the new machines on your local dealership's floor. I had seen lots of pictures and heard people rave about Barber museum for years, but I was still astonished at the spectacle of nearly 700 motorcycles spread over five floors, hanging from walls, and stacked on towering shelves that stretched the height of the central atrium. Nothing could have prepared me for my first live viewing of the Grand Canyon; the same was true of this place.

Really.

It was exhilarating to see hardware in real life that, for me, had previously existed only in book or magazine photos. There were also countless fascinating bikes I'd never before encountered, or even imagined. There was also something very special about walking up to showroom-condition examples of bikes I'd previously owned and loved. I found most of the 25 motorcycles that have passed through my garage since the early 1970s, along with many I lusted after but couldn't acquire. It



If you have a favorite brand, model or era of motorcycle, chances are good you'll find plenty at which to marvel inside the Barber Museum. Admission is \$15.

was a surprisingly emotional ride down memory lane. My cheeks actually ached from constant grinning by the time I tore myself away to explore elsewhere.

Barber's roadrace course is a 2.38-mile, 17-turn beauty, with lots of natural elevation changes and great viewing options. Opened for business in 2003, it is home to North America's only official Porsche Sport Driving School and the Honda Indy Grand Prix of Alabama. Motorsport enthusiast website Jalopnik counted this facility among the "10 Prettiest Racetracks in the World" in 2013, and it's easy to see why as you survey the manicured lawns and spy the tasteful artwork in unexpected places.

Throughout this three-day weekend, the American Historic Racing Motorcycle Association (AHRMA) conducts more than 30 road racing classes, so the sweet music of internal



Outside during the festival, there is a swap meet featuring vintage bikes, such as this Honda Trail 70 and Yamaha 60 Mini-Enduro from the early 1970s. There are parts for sale as well.

combustion is almost always playing in the background as you move around the park. Given the tremendous variety of engine designs in operation (often in a single race), it's great fun trying to identify the configurations responsible for various roars, drones and whines; listening to their glorious cacophony all together is simply mesmerizing.

And, even if you're not following a particular race, being able to watch the competition while traveling between other events is a big visual bonus. This year, two-time World Superbike champion Colin Edwards II served as the Grand Marshal and ran exhibition laps daily during the lunch break. And, each year, the track hosts the Century Parade, wherein bikes at least 100 years old circulate "at speed."

As if there wasn't enough racing happening on the tarmac, Barber's off-road courses were active, too. AHRMA ran numerous classes of competition in observed trials, outdoor motocross and cross country, mostly for vintage machines (and plenty of vintage riders). I'll bet you've forgotten how loud the two-strokes of your youth actually were! Strolling through the dirt bike paddock provided myriad nostalgia-laden treats for eyes, ears—and noses. Enjoyed a cloud of burned premix lately? While many of the old machines in view were working race bikes, with all the associated grunge and scars, there were lots of impeccably restored/preserved examples of classic off-roaders sitting out, too.

For those craving even more opportunities to examine the handiwork of restoration masters, the Vintage



One of the festival's most cherished events is the Century Parade, in which motorcycles at least 100 years old run Barber's 2.38-mile track.

Japanese Motorcycle Club and the Antique Motorcycle Club of America had their respective wide-ranging collections on display in adjacent fields.

Whereas the VJMC's show contained mostly familiar hardware in very unfamiliar (extraordinarily good) condition, the AMCA featured bikes of exquisitely rare pedigree that would have been at home among the more exotic relics in Barber's museum. Personally, I found both sets of motorcycles enthralling for different reasons. The Japanese bikes evoked sentimental memories of riding and reading about the machines I'd grown up with, while the older motorcycles captured my imagination with their shockingly diverse approaches to mechanical challenges—I might as well have been sifting through evidence of "ancient astronauts."

Resources for those breathing life back into vintage equipment were present in several forms. For starters (pun intended), the Vintage Festival is home to a huge swap meet. About 500 spaces—the majority of which appeared to be occupied—were nestled in a large section of the park crisscrossed by paved lanes. Sellers and traders set up shop with their wares spread out in the grass, under pop-up canopies and on trailers. From complete motorcycles that appeared to have just been uncrated to individual parts that looked every bit their age, vintage hardware was available from a mind-boggling smorgasbord of categories.

A determined shopper might well find the most obscure piece required for his restoration project back home. However, in the absence of any system



Barber's 2.38-mile racetrack was rated one of the "10 Prettiest Racetracks in the World" by motorsport enthusiast website Jalopnik.

of organization for the conglomeration of stuff available, that happy purchase could take many hours of rummaging.

Of course, the hunt is part of the fun, and has no doubt produced delightful discoveries. For every person taking home a part for a bike they were already putting together, there may be another person taking home the first piece of a bike they hadn't known would be in their future.

Parts are not much good without the knowledge required to assemble them. Motorcycle Classics magazine put on a series of seminars (in addition to its own vintage motorcycle show) designed to educate would-be restorers in the technology and dark arts of such endeavors. The VJMC held a couple of educational workshops, as well.

For those in search of professional assistance, a number of suspension experts, fabricators, metal specialists and the like had their services featured in the park section devoted to vendors. This little tent city also gave event-goers a chance to check out the latest helmets, gear, tools, accessories and motorcycles from an assortment of well-known manufacturers, along with others that are far from mainstream.

Sure, you're familiar with the Vintage Festival's "presenter," Triumph, but you may have never seen a magnificent Motus in real life. The latter is built right there in Birmingham, so it got a prime spot. Janus motorcycles presented modern interpretations of vintage classics, while Confederate Motors displayed otherworldly visions from the opposite end of the hand-crafted spectrum.

Speaking of opposite ends, the Vintage Festival even had disparate extremes from the world of stunt riding. Monster Energy sponsored frequent shows by Keith Sayers Freestyle Motocross, with riders on modern freestyle bikes launching themselves up to 70 feet into the sky, where they amazed spectators with incredible aerial acrobatics. Nearby, daredevils from a bygone era thrilled audiences on the Wall of Death, a wood-slat "bowl" with 15-foot high vertical walls. Onlookers



Make Your Arrangements Early For The Next Barber Vintage Festival

The next Vintage Festival is scheduled for October 6-8, 2017. Make arrangements for lodging as early as possible. On-site camping and RV spaces can fill up months in advance, and local hotels don't lag far behind. Limited car parking is available within the facility for additional fees, but also disappears quickly (free car parking is available off-site, with free shuttle service into the park). Motorcycles get to enter, roam and park in many areas

for free throughout the event. Buying admission tickets (wristbands, actually) and having them sent to you ahead of time will let you skip lines at the gate. This year, general admission pricing was \$35 per day or \$60 for a three-day pass, with kids 15 years old and younger admitted free when accompanied by a ticketed adult. Go to barbermuseum.org and barbermotorsports.com for more information about this and other upcoming events.

lined the top, peering down on helmetless riders tearing around the inside on antique Indian and Harley Davidson motorcycles. If you think operating an ancient hand-shift bike would be daunting, consider doing it at speeds sufficient to hold you perpendicular to a (trembling) vertical surface. Now take your hands off the bars and stand up. Now sit sidesaddle.

Once you've warmed up with the KSFMX and Wall of Death, you're ready for the even more aptly named Globe of Death. Operated by the Urias family since 1912, this 16-foot-diameter spherical steel cage showcases the talent/insanity of riders racing around its interior on mid-sized dirt bikes in every direction, including upside down while traversing its uppermost arc. One rider doing this is impressive. Two at the same time is astounding, and three is unbelievable. To have a fourth person standing in the middle of all this action defies superlatives. At least these riders were

helmets, though I'm not sure I'd really want to survive a crash in that thing.

The Globe of Death was the perfect finale for my whirlwind day at Barber. I never made it to the road course paddock or Ace Corner (\$10 access fee)—a special hilltop vantage point above the track's final turn that has custom bike shows, live music, beer and burgers. Ace Cafe is sort of a Hard Rock Cafe, but for cafe racers. I didn't take advantage of the test rides available from KTM, or check the water temperature in the campground showers or rent a golf cart.

I did enjoy some excellent barbecue from Rusty's, and appreciated the numerous other concession stands set up around the park (I may or may not have consumed a deep-fried Snickers bar and a local pale ale called Naked Pig). I've been to events at a dozen other racetracks, but I'm hard-pressed to recall any as comprehensive or as well run as this one. I recommend it highly. **MCN**



Nick Auger, Anthony Bucci and Matt Kull launched RevZilla in 2007 and have built it into a \$100 million company.

RETAIL REVOLUTION

REVZILLA HAS BECOME A DOMINANT INTERNET FORCE

> text by **Arthur J. Treff**

It's a common scenario. You meet a buddy for a ride and notice his cool touring boots.

You've got to have a pair.

But none of the local shops sells them. An internet search hits a reseller with a bizarre name, *RevZilla.com*. There, in a world of brilliant orange, you not

only see the boots you want, but there's a description of all their features, plus a video review. One click and you're face to face with an olive-skinned, fast-talking bodybuilder of a dude: "Hey! This is Anthony from RevZilla TV, where you can watch, decide and ride! Today, I'll be giving you a detailed breakdown of

Gore-Tex touring boots."

Anthony is quite a live wire and he sure knows his boots—like, everything about them. He speaks quickly, yet in-depth, about the leather, the buckles, the armor, how Gore-Tex works. He's got a number rating for the amount of sole flex and even mentions the durometer

PHOTOS: REVZILLA



Bucci, left, has largely been the face of RevZilla, appearing on the company's YouTube channel rating and hawking products.

(hardness) rating of the soles.

He'll also point out what he'd change to make the product better. At the end of the video, he states that orders over \$39 ship for free, that return shipping for size changes is free and that there is never a restocking fee.

Is this digital moto nirvana?

The website also comes with a phone number, so customers can talk to a 'gear geek,' if, say, their foot is difficult to fit. Here, a 'geek' might point out that the wider toe box on the TCX boot would allow one to go down a full size from normal. Most likely, the geek-speak is right on the money.

The RevZilla online shopping experience some regard as the best-decorated, best-staffed, best-stocked motorcycle shop ever is a success. After 78,000 reviews on *resellerratings.com*, RevZilla has compiled an average rating of 9.86 on a 10-point scale.

NERDVANTAGE

Anthony's full name is Anthony Bucci, and he is one of the company founders. A self-described 'late bloomer,' he was a nerdy kid who began computer programming when he was 13, and wrote code for extra cash while still in high school.



**Industry: E-commerce,
Motorsports**

Founded: 2007

**Founders: Nick Auger,
Anthony Bucci,
Matthew Kull**

Headquarters: Philadelphia

Number of employees: 230

Website: www.revzilla.com

**Annual Sales: \$100 million
(Approximate)**

In 2007, three years out of college, with a degree in computer science, Bucci was working at a national agency helping established companies improve their web outreach.

Then motorcycling came into his life.

But frustration hunting online for a motorcycle and all the associated gear seriously dampened Bucci's enthusiasm. Obviously, there was room for improvement. Bucci understood the technology and went to work building an over-the-

top online marketplace.

In a true entrepreneurial plunge, he persuaded two other motorcycle-riding programmers, Nick Auger and Matt Kull, to join him in the new venture. They pooled their money, moved in together and went to work to create the company's data backbone. They didn't secure loans to pay for advertising, or hire IT and e-commerce consultants; their mission was to provide a top-of-the-food-chain digital customer experience. They concentrated on building the digital platform that would become not only the new company's foundation, but its product as well. After four months of 20-hour workdays (and two maxed-out credit cards), RevZilla.com went live in November 2007.

"We're a technical company that caters to motorcyclists, as opposed to a motorcycle company that's trying to do digital," Bucci said. This important distinction is what he calls Nerdvantage.

Within 90 days, the three were cash-flow-positive. Twelve months later, they hit \$1.8 million in sales—all founder-funded—without a cent spent on advertising. Quite a journey for the three roommates in backward baseball caps practicing ramen profitability.

The company's headquarters, situated in Philadelphia's trendy Naval Shipyard, is completely modern and hip. Most of the employees are motorcyclists.



Call it 'Millennial 2.0.'

Nine years later, the company now does approximately \$100 million in annual sales, aided by 230 employees headquartered in Philadelphia's hipster, upscale Navy Yard.

COMMUNITY TV

Low prices and order taking wasn't the RevZilla mission. The goal was to provide customers with in-depth product knowledge on a great website backed by a knowledgeable staff. The secret sauce would be customer service.

With the website running, Kull, Auger and Bucci answered customer phone calls and emails. The website showcased product details well, and a phone call to a RevZilla gear expert was icing on the cake. However, such dedicated customer service is time-consuming.

So, the trio decided to put some informational videos up on YouTube with Bucci volunteering to be front-man. The early pieces were rough, but the feedback was positive, so they kept going. The founding RevZillans were happy to discover that the gear reviews answered 95 percent of buyers' questions, lightening the phone work. They saw them as a motorcycling version of Consumer Reports magazine—jour-

nalism that strives for excellence in accuracy as well as honesty.

Video is also a great way to inject some fun into the consumer conversation; spoof gear reviews and the lampooning of some current moto memes also compliment the gear reviews.

The company has produced more than 5,000 videos, all still available on their YouTube channel, RevZilla TV. Subscriptions to the feeds numbered 285,000 at the end of 2016. According to management, they now produce an average of two videos per day and spend more than \$1 million annually on what is clearly their bread-and-butter. It's all about building trust and community around their brand. The millennials love it.

DIGITAL MAGAZINE

RevZilla's marketing goes beyond YouTube and social media, with publication of a weekly e-zine called 'Common Tread,' which gets an average of 1,104,000 views monthly. It's a professionally edited, well-rounded blend of industry news, training, DIY wrenching lessons, humor and motorcycle reviews, augmented by videos.

Another facet of the greater ZLA community is the customer product reviews. They are plentiful, well written

and provide the kind of details that buyers on the fence want to know; what goes around comes around.

The heartbeat of all of the website, YouTube, E-zine and social media, is the technology. It all works. Searches yield results, videos load, and the site doesn't freeze up. This is the essence of nerdvantage. If something doesn't work, any one of the founders (who now occupy the boardroom) knows how to remove the fairing, take a look and fix it himself.

NERDVANTAGE SPINS BRANDVANTAGE

The Zillans have created a buzz in the worldwide retail marketing industry beyond the motorcycle realm. Their website bulges with accolades about the company's brand creation and momentum from notables such as Finch Brands and the National Retail Foundation (NRF). Fortune magazine ranked RevZilla No. 1 in Best Medium Sized Retailer Workplaces for 2016, and later the same year, ranked the company one of the Top 10 Best Places to Work for Millennials—which compose 85 percent of the company's workforce.

Zillans enjoy a real living wage and full health insurance for employee and spouse. The company also provides

REVZILLA

a catered lunch for employees one day each week and subsidizes costs of mass transit for those with lengthy commutes. The majority of employees ride, so the parking lot is filled with motorcycles. Zillans are encouraged to test the products they sell, so there is a deep loaner sample pool to dip into for weekend rides.

DON'T SELL A TIRE IF A TUBE WILL DO

RevZilla's gear geeks are on the front lines, answering phone and customer emails. They are not paid commissions. Candidates for the position cannot field customer questions until they've finished a lengthy training period, during which they are saturated with product knowledge. Once trained and on the job, the geeks ask customers questions, listen carefully and then make product suggestions based strictly on a customer's needs, not profit margin.

Theorists might call this value-selling or consultative-selling; RevZilla management simply refers to it as reducing a customer's pain. The ethos came into focus when Nick, Matt and Anthony were still fielding phone calls. A customer bargain shopping for a tire, was eager to take an upcoming trip, but was in a panic that time and funds

were in short supply. Bucci asked him a few questions about his bike and the condition of the existing tire, which, although flat, had plenty of tread left. The customer's bike required tube type tires and, until he called RevZilla, didn't realize that replacing the tire wasn't necessary. All he had to buy was a tube. This is customer pain management at its best.

NEVER STAND STILL

In 2016, RevZilla management formed Comoto, a holding company consisting of RevZilla and private equity firm, J.W. Childs, the owner of motorcycle retail chain, Cycle Gear. While both companies will continue to manage their respective businesses independently, the arrangement gives Cycle Gear access to RevZilla's digital technology, and gives the Zillans access to assets should they need to move quickly on a future opportunity. Having access to Cycle Gear's locations will also enhance order fulfillment.

This merger announcement created such a groundswell of concern from the ZLA community that the founders penned an open letter to their customers and posted it on the website:

"It has been downright amazing over the last few days to see the level of

protectiveness you showed for RevZilla in social media and the forums. You get it. You appreciate it. We're still waiting for you at the bar, no gold chains in sight. I pinch myself that we created a brand you are so connected with. If we can't continue to make RevZilla better while keeping our promises, you should shop somewhere else. RevZilla exists because we wouldn't stand for any less, and neither should you.

RevZilla's mission will remain to advance the experience of the motorcycle enthusiast through community, content and commerce. Our job is still to find your pain and alleviate it. Matt, Nick and I are still firmly at the helm and we're certainly not looking to alter a secret recipe that so many of you love, just expand our orange dent in the moto-universe."

Almost as punctuation, Bucci stepped aside as CEO on Jan. 13, with Kull filling in until a suitable candidate is found to fill his shoes. Bucci will retain his seat on the Comoto board and continue his customer-facing activities.

Thus, the energetic and charismatic founder and leader will step back to concentrate on the things at which he excels: high level company strategy, product direction and media—all cornerstones of RevZilla's success. **MCN**



REVZILLA

Fortune Magazine rated RevZilla the top medium-sized retail company for which to work in 2016. It's also a Top 10 company for Millennials.

In 1998, the author produced this rendition of what a Victory sportbike might look like. Just as Victory's racing programs were starting to dig in and have success on the track, Polaris pulled the plug on its misguided brand—one trying to compete with Harley-Davidson and sibling company Indian.



#126 VICTORY Supersport

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WHY CAN'T AMERICA BUILD A Sportbike?

Stubbornness of Victory and Buell Spelled Doom

> By **Glynn Kerr**

Having worked in the motorcycle industry for more than 30 years, there have been plenty of times when I've wanted to bang my head against the wall (or more often, someone else's head). Management decisions can sometimes be hard to understand, especially when the logical answer seems abundantly clear, and 180 degrees from the chosen direction.

Thirty years imbues one with a generous chunk of gut instinct, but then even we seasoned observers don't have shareholders to fret over. That consideration, I will assume charitably, can cause seemingly irrational behavior in the boardroom.

After pouring millions of dollars into the sinkhole that Victory now represents, I'm guessing the math on sales projections just didn't add up. Even so, from the outside, the decision to simply close the company appears to represent the last in a

series of bad decisions, and a lack of (pun reluctantly acknowledged) vision on the part of the management—folk who have been handsomely rewarded for their contributions. Let the head banging commence.

Since shortly after the company's beginnings in the late 1990s, I have been musing in print about the decision-making process at Victory. The initial sights were clearly on taking a slice of Harley-Davidson's increasingly lucrative pie, although while the newcomer scored over its established rival in terms of performance and handling (which wasn't exactly challenging at the time), it missed the point that those factors were entirely secondary. In terms of style, balance and attitude, Victory's first offering, the V92C, was downright clumsy.

Things got better over the years, thanks to an enlarged in-house styling studio with talented designers such as Michael Song, and to collaboration with Arlen Ness. But while the

styling improved, it was always trying to be a Harley-Davidson—that wasn't, rather than forging its own destiny. The one exception was the Vision Tour, which tried to merge Gold Wing and Electra Glide characteristics, and ended up just looking odd. Weird and enormous together requires a very self-confident customer, and in 10 years living in the U.S., I've seen precisely one on the road. They aren't hard to miss.

When the mother ship Polaris acquired Indian, it immediately demanded a rethink of the Victory brand, as I noted in "A Victory for Indian?" May 2013. And for a while, it seemed someone in upper management had understood the way forward. All the investment and hype that went into Project 156 and the subsequent Pikes Peak entries showed that Victory was heading toward a more sports-orientated future (see "Victory at Home," December 2015). For once, Victory, as an emerging brand, was starting to make sense. The racing program had really caught people's attention, but then suddenly, the rug was pulled from under our feet. "There's nothing to see here folks—go back to your homes."

Not that the inability to break into the sports market lies entirely with Victory. Buell, through its various incarnations, also seemed incapable of understanding its potential customer base. With a U.S. demand for sportbikes up 50 percent year on year during the previous decade, there was a captive and highly patriotic audience ready for a homespun product. But Buell's eccentricities in styling and engineering managed to nip that opportunity in the bud. The crotch-rocket kids bought Japanese and Italian like they always did, with the Brits and Germans also joining the scene with appropriately competitive offerings.

It can be partly blamed on the dependence on the trusty old V-twin. Sure, that layout hasn't done Ducati any harm, although to be accurate, Bologna builds an L-twin, which the company has developed to success, Porsche 911-like, despite its inherent disadvantages. The U.S. twins are mostly long-stroke, and depend on ever increasing cubes to kick out power in the form of low-end torque.



Victory's Vision Tour, which some H-D loyalists called the "Star Wars" bike, could never gain a foothold in the large bagger/touring class dominated by Harley-Davidson.

That usually means added weight, where lighter, high-revving multi-cylinder models will be more responsive. Yes, in its dying hours, EBR finally left its Sportster-derived power plant for Rotax on the 1125R, but by then it was too late.

Historically, there has never been a true American sportbike. Harley dabbled with the Cafe Racer, but it was little more than a styling exercise that relied on stock parts designed for very different purposes. Even hallowed marques like the Crocker were still essentially long-haul touring bikes that just performed better than the competition.

ERIC BUELL'S DISDAIN FOR HIS CUSTOMERS' INTERESTS MAKES ENZO FERRARI LOOK LIKE A CARE NURSE

Board track racers were often stripped-down touring bikes, and there was little cross-pollination back from the sport. And that's really what it comes down to. America is a huge country, with huge distances. Comfort and hauling power tend to trump acceleration and handling when the next bend in the road is two hours away.

Nothing has really changed in that respect. Laid-back is still the riding style of choice for the majority here, be that a feet-forward statement of defiance on a chopped Harley, or in the heated armchair of a Gold Wing with cup-holders. Sportbikes demand an energy and youthfulness that doesn't necessarily

lead to being a lifetime motorcyclist. Sport tourers and adventure tourers have taken up much of the middle-aged middle ground, and America doesn't build those either in any numbers. Motus is currently making a brave effort on the former, but Eric Buell's XB2 Ulysses showed how little he understood the GS crowd. His disdain for his customers' interests makes Enzo Ferrari look like a care nurse.

Business, even when motorcycles are concerned, is business, and no doubt the bean counters at Polaris have figured there's no profit to be made in U.S. sportbikes. If the target is still grabbing a slice of the Harley pie, Indian is a far safer and more easily comprehensible proposition for the investors. Splitting the resources between two almost competing divisions makes little sense. I get it.

But as a motorcyclist and enthusiast, in addition to industry analyst, I feel let down. Victory had gained our attention after much effort and investment in its new, sports-oriented direction, and I was waiting with enthusiasm to see how that would develop. To simply pull the plug looks like an admission of defeat, and bewilderment at a market that's too foreign or complex for them to understand.

Perhaps of greater concern, it also reveals that the group's projections for the two-wheel market aren't positive. America still has a strong demand for sportbikes, and a glaring void in its own production. But for some reason, the industry here still doesn't take them seriously. **MCN**

FINAL DRIVE 101

PART 2

BELTS REQUIRE THEIR OWN SPECIAL CARE.

> Text and photos by
Kevin O'Shaughnessy

Last month (MCN 3/17), we looked at the advantages and disadvantages of the different final drives, and maintenance on the chain drive. This month, we'll cover belt drive maintenance.

Belts are actually one of the earliest types of drive systems used on motorcycles. They started as leather V-belts with pulleys. The friction from the V design and spring tension helped prevent slip. The first known was used in the 1870s, on arguably the first motored-cycle, the steam powered Michaux-Perreux velocipede. Since these engines had very low output, the V-belt was a reasonable choice. But more substantial drives would be needed as engine power increased.

By 1912, Harley-Davidson began switching from leather belt drives to chain drives. As industrial process and technologies improved, the ability to injection mold rubber belts with reinforced nylon and notches for gear sets created a more substantial gear-driven belt drive that could support modern horsepower. It could also reduce vibration and decrease maintenance. By 1992, Harley-Davidson

had converted its entire fleet to belt drives. Since then, many other manufacturers adopted belt drives for cruisers.

Ask people about their chain and sprockets and they'll give you a list of different chain manufacturers, lubes and sprocket configurations they like best. Ask people about their belt drive and they are more likely to give you a look like, "Do you know something I don't know?" The system is out of sight, out of mind, and that is exactly the reaction manufacturers want.

Early drive belts were made of reinforced rubber nylon and/or glass mesh, similar to the belting in a tire. Since then, these belts have been reformulated to include Kevlar and carbon fiber.

Similar to a chain system, belt drives use a set of sprockets, but with a different pitch and rounded shape to mesh with the belt. These components are massive compared to chain systems and require heavy-duty bearings and/or larger transmission output shafts to reduce flex.



Advances in construction technology, plus their strength and light weight, have made the belts a popular choice among engineers for final drive.

MAINTENANCE

The best thing about this system: No lube. Chain lube makes a mess and attracts dirt, but we run belts dry and clean. Most maintenance involves easy visual inspections. Start by lifting the rear wheel off the ground and turn it

by hand while looking for damage such as punctures from rocks, screws, etc. Listen for any clicking. Smaller debris will deflect and fling off, but larger pieces can embed and pierce or tear the belt. If the damage is in the center of the belt, it's probably OK. I would run with a small hole in the center of a belt, but I'd replace it if the hole size was more than 20 percent of the belt width. However, if the tear is on the edge of the belt, it should be replaced immediately. The fibers will eventually tear across—much as the way duct tape is ripped off a roll. This is usually the reason for a belt failure during operation.

Belts are incredibly strong, yet able to flex. They can expand and contract as the swingarm moves about the pivot. This means it needs a certain amount of tension to operate correctly. As with a chain system, too much tension will cause premature wear on belts, sprockets, bearings and even transmission components. Not enough tension can cause the belt to slip off teeth, also known as ratcheting or derailing. A \$20 spring-loaded tool is used to measure tension.

On most systems, belts require checking tension at the tightest point. That means checking several spots around the belt to find it. Use a ruler to gauge the static point of the belt before applying spring pressure, then measure the distance it moves with pressure. Most gauges have a line and O-ring on the post to indicate 10 pounds of spring force. Press on the tool until the it reaches the line then take the second measurement. The distance moved indicates the amount of tension. If you find the belt moving too much, there is not enough tension. You would need to tighten the belt by moving the axle back. If the belt doesn't move enough, there is too much tension. Loosen it by moving the axle forward. Many Harley-Davidsons have a port with incremental marks on the belt cover to help with measuring.

Axle alignment may also be an issue. The axle needs to be parallel to the swingarm pivot (perpendicular to the swingarms). If the axle uses screw-type adjusters, you can check the axle just



Thanks to injection molding, belts can be manufactured in any size or shape. The addition of such elements as Kevlar has given drive belts unprecedented strength.



When the belt has been removed, check the sprockets for debris that may have lodged in the teeth. Replace belts that have tears along their edges.

like a chain and sprocket. Measure from center of the axle to center of the swing arm pivot on both sides. They should be within 1/8-inch of each other. If not, loosen the axle and adjust as necessary to align the axle distance evenly. Always do a final check of alignment and tension once the axle is fully torqued. I've noticed some exceptions, such as the V-Rod, which use fixed eccentric cams that are not adjustable. Belt tension and axle alignment should be performed any time a wheel is removed. **MCN**

NEXT MONTH: In Part 3 of Final Drive 101, we'll look at shaft drive maintenance.



Many Harley-Davidson motorcycles have a port on the belt cover showing measurement increments, which makes adjusting belt tension easy.



CYCLE

ANALYSIS

> By Mark Barnes, Ph.D.

Deflating, Debilitating Depression

ON RARE OCCASION, I've had tires or tubes that wouldn't stay inflated. They would hold air well enough for a ride or two, but soon I'd have to pump them back up to spec. Rolling them in a tub of water, smearing a soapy film on suspicious areas, and swapping valve cores revealed no explanation for the loss of pressure. I had to be extra mindful about checking them before rides and tolerate the inconvenience until I bought new rubber. It's hard to fix things when you can't tell what's wrong.

That's how it is with depression. I'm not talking about sadness or grief, which are easy to trace back to specific events and are appropriate emotional responses. Depression, as I'm using the word here, is an emotional state that lacks an obvious cause-and-effect relationship to situational factors, or is grossly out of proportion to them in intensity or duration.

Clinically, depression involves more than just a poor mood. It also has at least some of the following features: loss of interest in things that had been enjoyed (often including sex), decreased anticipatory excitement or pleasure during activities, lowered energy and initiative, compromised concentration, memory and decision-making, increased irritability, social withdrawal, and morbid or pessimistic preoccupations, which may include thoughts of suicide. And depressed people often feel unrealistic guilt or worthlessness, experience sleep disturbance (insomnia or hypersomnia), and exhibit significant weight loss or gain. These symptoms define "major depression," and many millions of Americans have it.

OTHERS EXAMINE THE depressed person's life from the outside and see no legitimate reason for their suffering. This can prompt conclusions that the depressed person is making a big deal out of nothing or indulging in self-pity,

followed by impatient exhortations to "snap out of it!" Such simplistic advice is excruciatingly painful to receive, as there's nothing the depressed person wants and tries to do more than exactly that; but they cannot. His or her inability to explain their difficulties (to themselves or others) or overcome through sheer willpower leaves them even more humiliated, alienated, defeated and disgusted with themselves. Matters are made worse by accusations that the depression is being feigned to extract sympathy, a shameful manipulation.

CERTAINLY, SOME PEOPLE do exploit others' concern by exaggerating their own distress. And, just as certainly, most depressed folks are lousy at self-care. Hence, friends and family get frustrated about the abdication of responsibility—a normal, understandable reaction. But truly depressed people aren't trying to look pitiful, nor are they being lazy or obstinate. From the inside, it's more like getting shot with a tranquilizer dart by some unseen villain; you're desperate to get to safety, but your legs barely move and rationality keeps slipping away, despite your best efforts. Colors become a relentlessly bland, bleak gray. It is not common sadness.

Depression isn't a single condition; it has a variety of forms and causes, but those are beyond the scope of this column. I can, however, tell you there are very good—albeit well hidden—reasons for what seems like an inexplicable (or immoral) emotional state. Some reasons involve physiological processes invisible to others, including medical researchers and physicians. While our understanding of such factors has increased dramatically in recent years, we still know much less than we don't know; depression can't be diagnosed with a blood test or an MRI.

Another set of hidden reasons may

lurk in the depressed person's history. While present-day events might not warrant the crushing despair and paralysis they're experiencing, recent (or expected) happenings may resonate with profoundly painful events from long ago. Sometimes the depressed person has little or no awareness of such connections. Recovery may involve developing insights into both the similarities and the contrasts between past and present, alongside new perspectives and habits.

MOTORCYCLISTS VALUE self-reliance; we take pride in the independence riding allows and requires. We also tout the psychological benefits of our beloved activity. It can deliver exhilaration, distraction, challenge and relaxation. But, great as it is, riding by itself won't cure real depression—in part because the depressed person can't muster the energy, organization and vigilance needed to regularly climb in the saddle.

Just because a riding buddy loses interest in heading out with you doesn't necessarily mean they're depressed. But if you notice other ominous signs, they may really need your compassionate support. Leave treatment to the professionals (e.g., psychiatrists, psychologists, clinical social workers), but lend an ear, show you care, and don't chide them for hanging back or tell them to "dig deep" or "cheer up." Trust me, they've already worked those strategies to death.

If someone really can't hold air no matter how much others try to pump him or her up, it's time to seek help. Depressed people often resist this, and depressed motorcyclists probably resist it even more. Machismo only hides depression, it doesn't fix it. **MCN**

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



Too Old to Ride?

IT IS IMPORTANT to realize that no matter how long we've been riding, or how good we are, we're still vulnerable. Motorcyclists are more likely to be injured than car drivers in the event of a mishap, for obvious reasons—most car drivers are securely strapped in a steel cage with airbags to protect them.

Many of us are familiar with Larry Grodsky, developer of the Stayin' Safe motorcycling course, who died in 2006 (age 55) after colliding with a deer in Texas, on his way home from teaching his safety course. He had told his partner a few weeks earlier that a deer would probably be his undoing. The old adage says there are two kinds of motorcyclists—those who have crashed and those who will. If you haven't crashed yet, please read this collection of accident stories at slack.net/~thundt/Bmw/accident.txt.

There are some potentially helpful technologies arriving—like air bag collars to protect against neck fractures—but there are things we can and should do now to minimize the potential damage from falling down. Those of us who have crashed know the value of quality protective gear. One of the stupidest things is a rider with no gloves. When we topple, we naturally put our hands out to break the fall. When our hands meet the road while moving, it's almost exactly like falling onto a cheese grater. Our skin, particularly the palms of our hands and fingers, is made of very special and sensitive tissue—you don't want to scrape it off.

FOLKS WHO RIDE in shorts and flip-flops are probably better off leaving the gene pool. Next in line are those who



If you're going to ride without protective gear, you'd better be tough. Pavement can cause great injury, even at low speeds, and healing becomes more difficult and lengthy as we get older.

believe jeans are adequate protection. Try standing on a road in your jeans and dropping as hard as you can onto your knees. Next, imagine doing that at 40 mph—don't forget the cheese-grater effect. Another exercise would be to purposely fall over and land on your elbows while wearing your riding jacket. Are we getting the picture? I've fallen down wearing my Aerostich, got back up and kept walking.

AGE AND CONDITION make a big difference when you crash. Young, fit people often bounce, while older, less fit folks tend to crunch. Bones become more fragile as we age, especially after age 60. Osteoporosis (brittle bones) often occurs with hyperthyroidism (high thyroid function), long-term use of steroids (for many different conditions) and massive weight loss (bariatric surgery). More direct contributors may include inadequate vitamins D and calcium in the diet, family history, smoking or heavy alcohol use. A lack of weight-bearing exercises will also make bones weaker, so pump some iron.

Osteoporosis is more common in women after menopause. Estrogen, a female hormone, helps keep bones strong. When estrogen levels go down

after menopause, women are at risk for thin bones. Risk is higher if they have a parent who has had osteoporosis. One female patient had surprisingly thin bones. I explained she'd need a particular very strong medication and the look on her face caused me to pause. She explained she had spent a lot of time in space with zero gravity, a well-known cause of thin bones. Turns out she was the scientist in charge of osteoporosis research for NASA—I didn't try explaining osteoporosis any further.

Weak muscles increase injury risk. Consider the hits taken by NFL players; if an out of shape fifty-something year old received a single impact like that, they would likely end up in the ER. Strong muscles help in a couple of different ways. One is keeping things from moving too far in the wrong direction, which can cause a dislocation, damage to the joint and possible fracture. Another benefit of greater muscle mass is the muscles help break your fall before you break your bones. If you want to keep riding safely, you need to keep yourself in shape, not just your bike. Bike parts are cheaper and far less painful to repair or replace than people parts.

Al Holtsberry finished an Iron Butt—the 79-year-old rode 10,000 miles in 10 days. Ward Blanchard finished a Saddle Sore 1000 at the age of 89. I don't know either personally, but if my well-aged patients were planning to continue riding, I'd encourage them to get (and stay) in good physical shape, wear quality protective gear, get a bone density test and add regular, advanced rider skills training. **MCN**

Dr. Flash Gordon is a primary care physician, author of *Blood, Sweat & Gears*, and former director of Haight-Ashbury Free Clinic.



We Have A Seat—But At the Kids’ Table

JUST WHEN WE thought we’d finally been invited to sit at the table with the rest of the adults we find ourselves instead sitting at the kids’ table—and all alone. While the Federal Highway Administration (FHWA) will accept nominations and seat members of the newly reformed Motorcyclist Advisory Council (MAC), it has been revealed that only one of the 10 council positions will be an actual representative of dedicated motorcyclists.

We’ve been over this: The MAC is the only formalized dialogue between motorcyclists and officials from the Department of Transportation. When it formed in 2005 as part of that year’s highway bill (known as the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, or SAFETEA-LU), its purpose was to share rider experience with the FHWA and provide input on topics such as roadway designs and construction, barriers, intelligent transportation systems and their impact on motorcyclists.

The original MAC dissolved in 2009 when SAFETEA-LU expired, but was reinstated and signed into law at the end of 2015 as part of the FAST Act. America’s motorcyclists would again talk face-to-face with federal transportation and highway officials and be in on policy discussions that impact riders. The makeup of the new council was not defined in the FAST Act, so there was no reason to believe that it would differ from the 2005 MAC.

BUT ASSUMPTIONS ARE dangerous critters, especially in our nation’s capital. To minimize the chances that the MAC might end up with a makeup of members inappropriate to the council’s mission, lawmakers attempted to impress upon the FHWA how important the inclusion of motorcyclists was to the makeup of the new MAC. In June

2016, Congressmen Reid Ribble (R-Wis.) and Mark Pocan (D-Wis.) wrote to the Federal Highway Administration urging the agency to adopt language similar to SAFETEA-LU, that the “Motorcyclist Advisory Council include participants from the full spectrum of available experts and stakeholders of different organizations.” The letter specified who should be involved, and called on the administration to include, “at least one member recommended by a national motorcyclist association, one member recommended by a national motorcycle riders foundation” as well as “two members of State motorcyclists’ organizations.” Twenty members of Congress from 12 states signed it.

In addition to the Congressional letter, senators from South Dakota and Alaska questioned Anthony Foxx, Secretary of Transportation, in a Congressional hearing about participation in the Motorcyclist Advisory Council. They directed him to the previously agreed upon language in SAFETEA-LU.

DESPITE ALL OF this, it turns out the Federal Highway Administration doesn’t seem to want actual motorcyclists at its table after all. Look carefully at the agency’s recent notice for applicants to serve on the MAC. It only requires that one member be a rider. All the rest may be non-riders, as long as they have a background in certain areas of knowledge such as engineering, public safety, road design or other related fields.

According to FHWA Docket No. FHWA-2016-0033, entered into the Federal Register Volume 82, No. 5 on Jan. 9 of this year, the MAC will be composed of individuals who have knowledge of barrier design, road design, construction and maintenance practices, and the architecture and implementation of intelligent transportation system technologies.

The FHWA goes on to claim that, “The MAC seeks to have a fairly balanced membership with expertise in highway engineering, safety analysis and motorcycling.” Specifically, these people seek experts from state or local government in highway engineering issues, including: traffic safety engineers, design engineers, or other transportation department officials (who could be motorcyclists); a representative from a national motorcyclist association; a roadway safety data expert on crash testing and analysis; and a member of a national safety organization that represents the traffic safety systems industry.

COUNCIL MEMBERS WILL be chosen by the Secretary of Transportation based on the applicant’s professional or academic expertise and experience. Gone is the original requirement from SAFETEA-LU that multiple members come from motorcycling organizations and foundations to represent the views of actual motorcyclists. Instead, the overwhelming voice for the Council appears to be that of safety experts and engineers—welcome and critical to any discussions. But the makeup of the Council is far from fair and balanced.

This deliberate exclusion of motorcyclists from a council that was purposefully set up to represent the voice of motorcyclists has to be called into question. How is it possible for a dialogue to exist between the motorcycle community and the federal authorities when only one voice out of 10 is speaking from a place of riding experience?

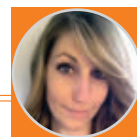
Without proper inclusion, no real dialogue between federal policymakers and motorcyclists can exist. **MCN**

Megan Ekstrom is vice president, government affairs and public relations for the Motorcycle Riders Foundation - mrf.org



> By **Megan Stewart**

NOVICE NOTES



Weather or Not, to Ride

YOU STARTED YOUR day

with clear skies and an open road. Your light summer jacket is perfect for this time of year in Southern California. You make it to your destination, taking in the peaceful weather around you. The last thing you expect is for it to start raining as soon as it's time for you to leave. Even though you checked the weather app earlier that morning, the rain doesn't look to be letting up anytime soon.

What are you supposed to do?

For experienced riders, a little rain isn't that big of a deal, as they have the knowledge and skills needed to know how to navigate in the rain. For beginners like me, it's one of the last things you want to be faced with. All sorts of questions start running through your head, such as what you're going to do if your front tire starts drifting and how hard you can apply the brakes without sliding. A little water isn't a big deal, but with a drenched road and puddles, it becomes that much harder for a beginner.

IN MY LIMITED experience, I've been lucky not to get caught in a heavy rainstorm. I've ridden with damp spots on the road, but nothing that made me feel unsafe. When I see motorcycle riders flying down the freeway in the rain on my morning commute, I always wonder what made them decide that was a good day to ride, especially at those speeds. Is that their only form of transportation? Did their ride start out dry? Do they not care about the risk?

While the wet road surface provides one major safety issue for riders, there is heightened risk involving cars as well. Visibility is reduced due to

the darker sky and water, making it that much harder for drivers to spot motorcycles. Cars shift lanes without completely seeing the lanes around them. They slam on the brakes because they can't see the cars in front of them. More drivers get into accidents in the rain, putting riders at more risk. It's times like these that I feel fortunate to have another mode of transportation, as I am not only out of the elements, but feel safer on four wheels.

BUT RAIN ISN'T the only weather issue that can hit riders this time of year. I have also had the unfortunate opportunity to get caught out in severe winds while out for a ride. I started my morning by checking the weather, making sure it would be clear enough for me to take my bike out. A quick glance showed sunny skies and no clouds. I thought I would be good. The temperature was in the 70s, perfect riding weather in my light summer jacket. I suited up, with a sweater underneath in case it was colder than I expected, and headed out to breakfast. For the two hours I was inside, the weather didn't seem to change, but when I stepped outside, the wind had picked up and nearly blew me over! I could only imagine what was going to happen when I got on the bike.

At the time, I was riding a Honda CBR300R. Even with 350 pounds under you, when it's on two wheels, riding in strong winds can be daunting. Regardless, I needed to do this—not only to get the bike home, but also for me. I needed to conquer at least one inclement weather condition.

I started up the bike, strapped on my gear, backed out of the parking lot, and sat at the stop sign for a good five minutes, waiting to see if there was a chance the wind would die down even a little. No such luck. I slipped into first

gear, gave it some power, and hit the road. At slow speeds, the wind really moved the bike around the lane, making me put in that much more effort to stay in my lane.

I had to stick to the right lane, and fortunately, it was only a short 15-minute ride from the restaurant to my home. I don't normally like to ride in the far right lane, with all the cars that could potentially turn in to traffic from a light, a side street or a neighborhood and not even see me. But that day, I wanted to keep my path as straight as possible. I wanted to have an exit route just in case I needed to pull over and take a break.

WITH THE WIND as strong as it was, it was hard to keep the bike from drifting, and keeping it in the same lane took all I had. Even at only 55 miles an hour, it made me think that going any faster was asking for something to happen, adding unnecessary risk to an already nerve-wracking situation. When I see motorcyclists on the road passing me in my car on windy days, I can't imagine what goes through their minds, other than they must have some extreme skill and experience, or a sense of invincibility.

My motto has always been to go at your own pace: safety over speed. When weather gets involved, it's more important than ever to understand what I can handle, what I can use as a learning experience, and when it's better to stay on four wheels rather than two. What I can say from my experience is that I can now understand just how much wind affects riding, and knowing how much wind is too much, as well as how much rain is worth it. **MCN**

Megan Stewart is a creative writer, journalist and former editor and contributor at Motor Trend and Automotive.com.



Trail Braking for Control and Safety

LAST MONTH, WE introduced the advanced concept of trail braking, which is, essentially, continuous braking before and while entering a corner.

To review, the brakes, applied before the turn, are used beyond the entrance of a turn and are gradually “trailed off” through the turn as acceleration is slowly increased. This is done to keep the suspension settled, maintain better traction and facilitate a smoother transition through the turn without the front suspension diving under hard braking.

There are four important benefits of trail braking for experienced riders. Let’s look at them in detail:

1) TRAIL BRAKING MINIMIZES both the amount and speed of suspension movement. The less suspension movement there is, the more stable the bike will be, which will allow you to apply the throttle much sooner. Additionally, the more stable the bike is, the more comfortable, confident, and relaxed you will be as you enter a curve. More relaxation and confidence translates to more precise control inputs and greater safety.

2) TRAIL BRAKING MODIFIES the bike’s front-to-rear attitude for faster and easier steering. By keeping the front suspension loaded during the turn point, the chassis’ geometry is dynamically steepened with less rake and trail, which will allow the bike to turn more quickly and with less physical effort.

In layman’s terms, rake is the bike’s fork angle. So a sportbike that has the front wheel almost touching the engine has a very steep rake. By contrast, a cruiser that has its front wheel seemingly in a different area code than the rear wheel has a very large rake. Trail is a little more subtle measurement

relating to the position of the contact patch of the tire in relation to where a line through the steering axis touches the ground. Basically, it controls how much the bike wants to re-center itself as it rolls down the road. You can identify trail in the chassis by wiggling the bars and letting go; the bike always tries to straighten itself out.

By temporarily reducing the amount of rake and trail in the chassis by trail braking, you, in a sense, make the bike sportier. Racers like this technique because they can get in and out of the corners faster. Long-distance riders, on the other hand, benefit from this technique because it can make each turn as much as 40 percent easier on your arms. Think about how much less fatigued you’d be at the end of a 4-, 6-, 12- or more hour ride if every turn took 40 percent less physical effort to execute, especially those Iron Butt riders!

3) TRAIL BRAKING REDUCES reaction time for applying either the throttle or the brakes. Because you’re already partly on both the throttle and brakes, you can add or take away pressure from either control virtually instantaneously. If you’re not on one or the other, it will take some amount of time to apply pressure to the control. Maybe you have that time, maybe you don’t.

4) TRAIL BRAKING MAXIMIZES directional control. Although most riders think of steering the bars as the way to change direction, you can also change your line using your brakes and throttle. For example, if you quickly add the throttle or brakes in a turn without trail braking, the bike will stand up and likely run right into whatever it is you’re trying to avoid. Whenever you add speed, a bike’s line naturally goes

wider. Similarly, whenever we quickly decelerate, a motorcycle also straightens up and goes wide in a turn.

To understand why this is, you must first recognize that in a straight line when you apply the brakes and the suspension compresses, the center of gravity is lowered. If you do this too quickly the bike might do a stoppie, but generally the bike’s center of gravity is lowered with brake application.

But when you are leaned over and quickly apply the brakes, the center of gravity goes down and to the outside of the corner as the suspension compresses in the same direction. This outward weight transfer causes the bike to stand up and go wide in the same way as a quarterback falls in the direction of a linebacker throwing his weight into him during a tackle. But trail braking actually allows you to tighten your line while adding pressure to the brakes in a turn.

The difference is that while trail braking, the suspension is already compressed as you enter the turn. Because the suspension can’t compress much more, as you reduce the speed by applying more brakes—and without changing the lean angle—the bike’s line has to decrease. This means with practice, you can intentionally tighten your line midcorner with the simple action of a couple fingers adding additional pressure to the brake lever.

In the real world, the three types of corners where trail braking is most valuable are high-speed, decreasing radius and blind corners. When in doubt, trail brake into a corner, because it will be too late once you reach the apex to take advantage of trail braking’s line-tightening ability. **MCN**

Lee Parks (MCN editor ‘95–’00) is author of *Total Control Performance Street Riding* and proprietor of *Total Control Training*.



Off The Beaten Path, It's Just Plain Folks

I AM GOING to ask your indulgence, if my column this month seems a bit preachy. At the time I am writing this, our national elections were just 10 days ago and, like many Americans, I am concerned with the rise of animosity, bigotry and hatred that has followed. Personally, I find it almost incomprehensible to hate anyone based simply on their ethnicity, religious beliefs or country of origin. You might ask yourself what the devil this has to do with motorcycling, but believe it or not, I see a connection. For starters, let me just hit you with one of my favorite quotes from my hero, Mark Twain, who once said, "Travel is fatal to prejudice, bigotry and narrow-mindedness."

As a touring rider who has traveled extensively about the planet, everywhere I go I find that people are just people, and for the most part innately kind-hearted and friendly. Problem is, you hardly ever see these ordinary people on the TV news. Instead, we are fed a steady diet of the 1 or 2 percent who constitute the dregs of any society. But if you travel, and get out among the people, you will learn the truth. The great sage Samuel Johnson once put it much better than I ever could when he said, "The use of traveling is to regulate imagination by reality, and instead of thinking how things may be, to see them as they actually are." Truer words were never spoken.

AMONG MY PEERS, and by that I mean folks who tend to travel about on motorcycles, I find very little prejudice against others. I tend to believe that is at least partly because we meet so many different types as we roam about, and perhaps also in part because as motorcyclists, most of us have faced a fair amount of prejudice ourselves. Let's face it, the very act of riding a motorcycle is still not socially acceptable within large parts of our society. Particularly if

you also happen to be female.

I don't believe that any single person is completely prejudice-free. We all carry a certain amount of baggage around with us, most of which came from our parents and our upbringing as children. It can be tough to break out and toss that baggage aside sometimes, but as Mark Twain alluded to, travel is perhaps the best medicine.

In my own life, I have found that the vast majority of true bigots that I have been unlucky enough to meet were all from a certain area where their parents and grandparents lived, and from which they personally have virtually never strayed. And unfortunately, it seems that description fits more than half the population of our country. Their only knowledge of other cultures comes to them by way of their television and local newspapers. And believe me, often the exact reverse is true.

I have visited countries where, if I believed only the TV and newspapers, I would have to conclude that Americans are the most hateful, greedy people in the world, whose only purpose is to try to destroy their country, their religion and their very families. It works both ways, and yet by traveling to those countries I often feel I have done my small part in reversing those prejudices just by showing them I was a normal human being like themselves, and not some "Great Satan." Allow me to throw yet another great quote at you, from playwright Henry Miller: "One's destination is never a place, but a new way of seeing things."

OK, ENOUGH OF the preaching about international prejudices—let's talk just a bit about homegrown prejudices, which really seemed to come to the forefront during the recent national election cycle. If the TV pundits are to be believed, we are practically on the verge of a new Civil

War; but rather than North vs. South, it will be Urban vs. Rural. Have we really become this divided over something as mundane as whether we live in a big city or a small town in the country? I'm not about to try to argue what's going on, but at least for motorcyclists, I offer the same solution as before. Travel, and as you do, make an effort to immerse yourself in whatever local cultures you happen upon. Get the heck off those damned Interstate highways, where everything looks exactly the same in every state. Hit the back roads and meet the people. If all you ever see of another state is the Cracker Barrel restaurant at each freeway exit, you are really cheating yourself. And yes, I am going to hit you with another quote, this one from Saint Augustine: "The world is a book, and those who do not travel read only one page."

ONE LAST THING, and then I'll climb down off this pulpit. If you like to go to motorcycle rallies, please try to make them count. By that I mean that I see members of local clubs or chapters who ride long distances together to rallies. When they get there, they stay at the same motel, eat together at the same restaurants, and always make sure they get a separate table for their group at any functions. They seem to purposely avoid making contact with any of the other groups who have traveled there from other cities and states, always clinging close together and insulating themselves from any outside influences. This is ridiculous. What's the point? Try to pay attention and understand one last piece of advice from Mr. Twain: "Sail away from safe harbor. Catch the wind in your sails. Explore, dream, discover." **MCN**

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**OPEN****ROAD**> By **Dave Searle**

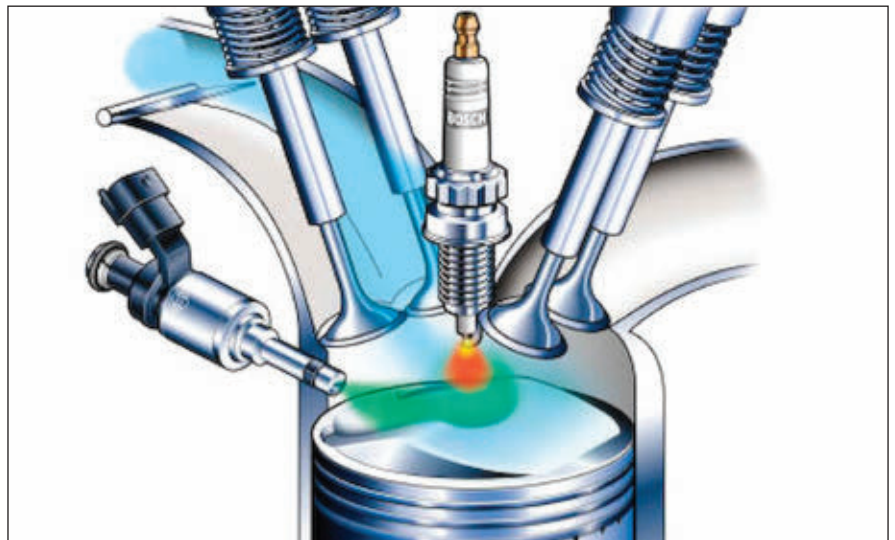
GDI Might Power the Next Generation

WITH THEIR INCREDIBLE performance and amazing power-to-weight ratios, it would be easy to assume that today's best sportbikes employ every last bit of advanced four-stroke engine technology available. Oddly, they don't. At least one item is glaringly absent—gasoline direct injection—now used in virtually half the automotive engines built, and almost invariably found in the top high-performance and luxury car power plants.

Although the technology goes by many names and acronyms, and the most common form, "GDI," is officially a Mitsubishi trademark, as the name suggests, the technology is another variation on fuel injection, one in which the fuel is injected directly into the cylinder, rather than into the intake ports or further upstream into common manifolds or individual intake passages. And despite its fast rising popularity, the basic idea is hardly new. Its invention dates to 1902, credited to French aviation pioneer, Leon Levavasseur, and it was originally fitted to the world's first V-8 engine in the 1906 Antoinette mono-plane—both Levavasseur inventions.

Throughout World War II, direct injection was fitted to almost all of Germany's high-performance piston-engine aircraft as well as to the 18-cylinder Wright R3350 Duplex Cyclone radials that lifted American B-29s. The first gasoline-fueled car you've likely ever heard of to use direct injection was the 1954 Mercedes 300SL Coupe, which was powered by a slant-six derived from the inverted V-12 in the Messerschmitt Bf 109E fighter plane.

While the famous tube-framed luxury supercar with its distinctive gullwing doors was clearly a cost-is-no-object device, and its innovative high-pressure Bosch direct injection was a complex mechanical design, the latest GDI



Note how the injector sends fuel to a depression in the top of the piston, directly beneath the spark plug, to facilitate stratified charge combustion.

systems are electronic with highly sophisticated computer control, which facilitates a wide range of possible air/fuel ratios based on engine load.

THE TYPICAL INSTALLATION allows three different fueling scenarios that can together greatly reduce emissions while improving gas mileage and power. The most familiar mode injects fuel during the intake stroke, much like a conventional EFI, for a very homogeneous stoichiometric mixture (14.7:1 air/fuel) that's ideal for good power. Second, at times when maximum power is needed, the GDI system can enrich this "chemically perfect" mixture to ensure that all available oxygen finds a fuel molecule partner and any excess fuel serves to cool the combustion chambers.

But it's the third mode that creates GDI's greatest advantages—stratified charge. In this application, fuel is only injected during the later stages of the compression stroke when rising cylinder pressures would otherwise over-

come a low-pressure fuel injector. By comparison, conventional EFI will use fuel pressures of ~40–90 psi, while GDI employs ~2,500–2,900 psi to deliver full fuel flow in microseconds at high rpm. And in Formula One, where engines spin twice as fast as in the best road cars and GDI systems are mandated but limited to a single injector per cylinder, fuel pressures are much greater (with Mercedes and Ferrari rumored to use over 7000 psi).

The concept of a stratified charge is to provide a burnable air/fuel mixture directly to the spark plug, often in a small pre-chamber in the cylinder head or a depression in the top of the piston. The flame that results is then allowed to spread across a combustion chamber that otherwise contains too little fuel to support combustion on its own—allowing average air/fuel ratios as high as 65-70:1. In this way, when the engine is running at low load, idling or cruising at light throttle, very little fuel is consumed and gas mileage improves dramatically. In fact, by controlling power in

this way, it is even possible to eliminate the throttle plates that would ordinarily control rpm, removing a restriction that hurts volumetric efficiency. Additionally, direct injection cools combustion chambers to allow higher compression ratios, further improving efficiency, and that fuel wetting the walls and passages is greatly reduced, reducing hydrocarbon emissions. GDI has proven to reduce fuel consumption and CO2 emissions by 15 percent or more.

OTHER ADVANTAGES OF keeping fuel out of the ports are less obvious but no less significant, and the story of Dan Gurney's innovative 1981 AAR Indy car makes a fascinating example (now on display at Peterson Automotive Museum in Los Angeles). Using a unique, wedge-shaped aerodynamic package and a normally aspirated Chevy-based pushrod V-8, the Eagle was fully competitive with the best turbocharged Cosworth DFX four-valve, V-8-powered cars, creating major headaches for his well-heeled competition.

But, never satisfied, Gurney was sure the car should be even faster. Flow bench testing indicated it had the ports to make more power, but it wasn't until he observed the fuel flow test rig in action that he guessed why it wasn't living up to its potential. Running on methanol with Hilborn mechanical fuel injection, the ports had to share their carefully shaped contours with massive quantities of fuel (approximately twice the volume required with gasoline). Reckoning this prodigious spray not only crowded the air, but that its weight also redirected the airflow, he asked his engineers to reposition the injectors as close to the valves as possible. They originally said it couldn't be done as the engine's water jackets were in the way. But Gurney insisted, and once the necessary modifications



had been made, the engine picked up another 40 hp and a further 600 rpm.

As a reward for all this Yankee ingenuity, the car was banned the following year, and Indycar racing ossified into the spec series it still is to this day. Can one be too good? Disillusioned with Indy's rule makers, Gurney took his AAR to IMSA's GTP series, where creativity was still allowed, and he won. With Toyota's engine support, AAR's Eagle Mk III was so dominant that the Jaguar and Nissan teams quit the game, effectively killing the GTP series at the end of 1992 for a lack of competition! As riders, we can be grateful that Gurney finally turned his talents to motorcycles—where the only rules were his own—to build the remarkable recumbent Alligators.

Does GDI have any problems? Yes. Estimates are that its various components might add hundreds of dollars to the cost of a car. It's expensive, but quite fuel efficient, and cheaper than a

hybrid powertrain. Despite its improved CO2 numbers, GDI isn't entirely emissions-friendly either. Because ultra-lean stratified charge combustion isn't as uniform as conventional EFI, it can form as much as one thousand times more particulates—enough that exhaust filters may be required to meet future standards, like diesels.

IN ADDITION, ANECDOTAL evidence suggests that the high-pressure fuel pumps required for GDI have more frequent problems and are more vulnerable to ethanol blends. The most common complaint is that heavy carbon deposits form on intake valves and ports, which can gradually choke performance and even break off in chunks large enough to damage catalytic converters. The cure is to remove the intake manifolds to enable media blasting with walnut shells. Some engines apparently have this problem more than others—Volkswagen and Audi owners generate some of the louder clamor on Internet bulletin boards.

The problem is that with no gasoline in the intake tracts to dilute the crankcase oil vapors sent to the airbox by the positive crankcase ventilation system, sludge bakes onto the walls and valves. If your car uses GDI, you'd be wise to fit an air/oil separator into the PCV line. Consider the price of the separator relatively cheap insurance against the high cost of decarbonizing, which might set you back \$400 to \$1,000 at intervals as short as 30,000 miles.

If motorcycles finally appear with GDI, it will be because of emissions or mileage considerations, not power. Maybe we're lucky we don't need every technical trick in the book ... yet. **MCN**

Dave Searle (MCN editor '00-'15) started freelancing for Road Rider in 1988 and became the technical editor of MCN in 1996.

» Bobber Shootout

» Indian Chieftain

Vintage



WWII ATV

1943 KLEINES KETTENKRAFTRAD

During World War II, the Germans needed a radical and mighty war machine to slog through all types of terrain, transport soldiers and even drag around aircraft, such as their Messerschmitt Me 232 jet fighters. They engineered a motorcycle, of sorts.

The Sdkfz 2, aka Kleines Kettenkraftrad HK 101, was no ordinary motorcycle, powered by an Opel water-cooled, in-line four-cylinder with overhead valves. A total of 8,345 "Kettenkrads" were built at NSU Werke AG in Neckarsulm, Germany. With a highly concentrated weight of nearly 2 tons (3,444

pounds), this mighty all-terrain tank-like trike could reach a top speed of 44 mph, putting out 36 horsepower through a six-speed transmission with two ranges (high and low).

These mini halftracks, conceived and patented by German inventor Heinrich Ernst Kniepkamp in June 1939, saw service on the Eastern Front, North African Theater and throughout Europe. They generally had a crew of three—a driver and two passengers—and could go just about anywhere: over rocks, downed trees, through deep mud, soft sand and rivers. **MCN**