
MCN
50TH
ANNIVERSARY
MOTORCYCLE CONSUMER NEW
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MAKING A
SPLASH
BMW F 750 GS
& F 850 GS
PLUS
HONDA CB1000R
50 YEARS OF MCN
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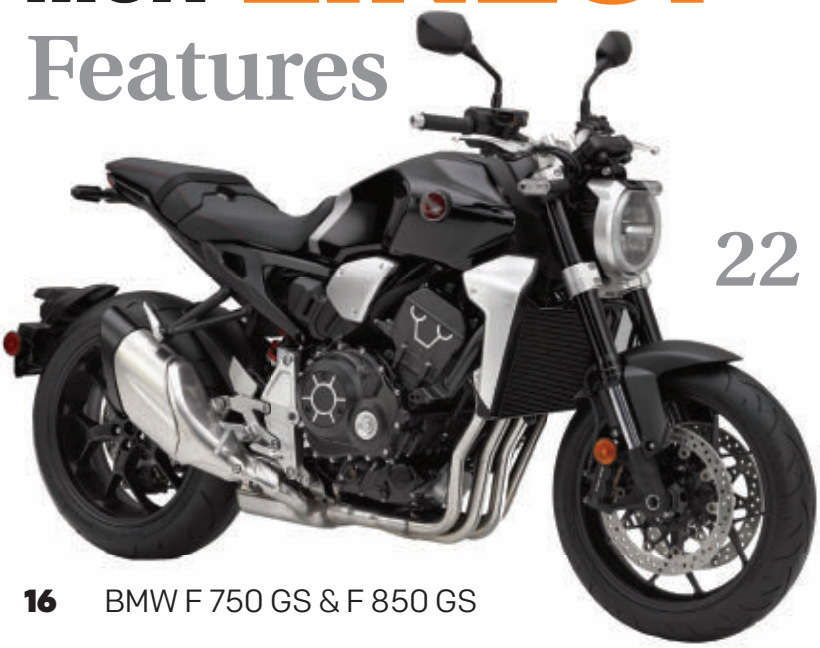
MCN LINEUP

Features



DEPARTMENTS

COLUMNS

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> Arches and Canyonlands National Parks, La Sal Mountains and Onion Creek, near Moab, UT. Uncompahgre National Forest, near Gateway, CO.

IT'S BEEN A busy fourth quarter. In the span of two weeks, I managed to throw a leg over eight different bikes and make stops in four different time zones. The sheer volume of hustling was more accidental than anticipated. Here's what, where and why, in the order ridden.

BMW held the press launch for the 2019 F 750 GS and F 850 GS (Page 16) the last week of October, in Gateway, Colorado. Those who've been to southwestern Colorado or southeastern Utah already know why. If you have any interest in the outdoors whatsoever, and have never been, put it on the bucket list right now (see sidebar).

While both bikes are stellar on the street, the good folks at BMW decided to test our mettle. "Adventure is in the name," they said. We rode 20 miles of gravel and shale the first day on the 750, with street tires. This was not a grand adventure, but was completed without incident. The road home was much more enjoyable, and paved.

The second day, we rode 50 miles of truck trail on the 850, with knobbies. A much better experience. Thirty-seven stream crossings and numerous switchbacks later, we dined on the Colorado River.

After lunch, we headed up the La Sal Mountains. The temperature dropped to 34 degrees and it started snowing. Weather did not get better. We snaked down slowly and proceeded back toward the hotel. The paved route was 120 miles around the mountain. It was 40 degrees, and raining.

NEXT, SANTA CRUZ, California, for the warmer launch of the 2019 Zero DSR. I stopped overnight on Halloween to visit my friend Clay, who lives in the surrounding mountains. We pulled two bikes out of the garage. First, the 2002 Aprilia SL1000 Falco. My brain shouted, "it's just like my SV1000," and it felt like home. Next was the XR1200, which was remarkably the only Harley I've never dragged pegs on. Admittedly I wasn't pushing it hard, but considering the nature of the roads, and the marque under my seat, quite a feat.

Cosmetic updates for 2019 make the DSR look more like an adventure bike. We took it off-roading on some amazing private land, just a bit North on the Pacific Coast Highway. I'm a big fan of the Zero's power delivery, but the weight of this bike felt a bit much for the purpose, and the suspension wasn't doing it any favors.

HOME TO MILWAUKEE for one night, a load of laundry, then a flight to Asheville, North Carolina, for Overland Expo East. MCN contributor, and all-around great guy, Arthur Treff put me up. (Put up with me?) We toured the area, which looked like good times for any motorcyclist. Another bucket list destination. We finished the evening over beers with the good doctor, Mark Barnes, and Jason Smith of Hugo Moto (MCN 1/18).

The next day, we rampaged local forest service roads on a circa-2000 Suzuki DR350SE, 2017 BMW R 1200 GS and 2003 Sportster 1200, outfitted with Hugo Moto's dirt bike kit. While the DR was by far the easiest to ride, the Hugo Moto is legit. It took a good half-hour to adapt to whipping 600-plus pounds of Harley around in the dirt, but once it clicked, I was giggling in my helmet like a schoolgirl. Harley's don't have suspension. This one does.

We spent Friday morning in DART off-road training (MCN 1/18) with Bill Dragoo and team, in the rain. I totally cheated, by riding the DR350. Afternoon classes were canceled due to ankle-deep mud, everywhere. We mucked around and looked at the various overlanding gear, which was unfortunately mostly for trucks, not bikes. The organizers said Overland Expo West (Arizona) has a much bigger showing for motorcycles. Still, there were moto-campers both Saturday and Sunday, as temps dipped into the low 30s. Trading our man cards in for a motel was the best decision, ever.

As MCN enters its 50th year (Page 26), there is one resolution we should all consider: Ride more motorcycles. Whenever, wherever and whatever presents itself. MCN

LETTERS

YOU ARE LICENSED to drive on the road. That license is endorsed to operate a motorcycle (MCN 10/18).

—Mark Cipriano

I PURCHASED A new Ducati Supersport S last spring. I agree with all of your comments, with exception of the transmission (MCN 10/18). While I don't doubt your experience that, "shifting was clunky" and "Neutral was nearly impossible to find," mine has been quite the opposite. I find the transmission smooth and precise.

I found a lightweight sport-touring bike, more comfortable than my 1098 and lighter than my BMW K1200RS.

—Phil Brooke

ON MY WAY to the Barber Vintage Festival, I came across a stranded early-1920s two-stroke Ner-A-Car (MCN 9/18). I was not able to help the rider, but the stop was worth the time spent. I have been riding 54 years and that was a first.

—Mark Bayer

ALISA'S PHOTO WAS at Howard Ranch, on Salmon River Road, in Idaho (MCN 10/18). The ranch has a rich history as a produce provider and site of the original ferry crossing for early pioneers. I've enjoyed steelhead fishing there for 35 years, when not riding. A little piece of home.

—Greg Wonacott

IN LATE SUMMER, before gas stations switch to winter blend, I store 87 octane, 10 percent ethanol pump gas, for emergency power in my generators. Star Tron stabilizer is added, and it is good for a year. At the end of the winter, I put it in my bikes.

Older bikes do have problems with incompatible materials, but most can be updated to tolerate ethanol. It's worse to run bikes without a load, which doesn't heat the engine oil and causes condensation contamination.

—Jay Knapp

WHY HAVE YOU stopped reporting top speed? Was your intent to stop promoting excess speed?

—Mike Vaeth

We discontinued top speed because we do not have access to a safe and legal place to ride motorcycles above 100 mph. Nor do we have insurance that will cover riders doing so illegally.

There are very few places a motorcycle can legally be ridden at top speed. Modern bikes are capable of 100 to 200 mph. They're all fast enough to get you in trouble. We still run quarter miles to see how fast they are.

—David Hilgendorf

DEER WHISTLES DEPEND on air going through the whistle, which can also change the volume (MCN 2/18). The Army developed a sensor that runs off your battery at a constant frequency that deer detect as danger, commercially sold as "The Hornet." I've seen deer run from it many times. If it works once, it's worth the $100.

—David Davis

I'M NOT ANTI-ELECTRIC, but check your math when making the value argument for the Zero DSR versus a Ducati (MCN 10/18). As fun as the DSR might be, the value argument is not there yet, especially if it runs out of juice and must be towed.

—Alex

We took that test one step further (MCN 11/18). Maintenance on a Ducati will be a much higher and more frequent expense than on a Zero. Range anxiety is still a thing, but Zero is increasing theirs every year. You can still "run out of juice" on a gas-powered bike.

—David Hilgendorf

I THREW OUT an unsafe helmet, then saw a kid ride by a week later with it on his head! Since then, I cut the straps off, shred the lining and write all over the helmet with a sharpie that it is no longer safe, before disposing of it.

—Peg Preble

I LOVE MY 2014 Super Duke for a lot of reasons, but one of them was unexpected. The bike is orange and black, which fools some Harley-Davidson riders into waving.

—Mike Davis

IT USED TO irk me when I would wave at a fellow biker and they would not acknowledge (MCN 11/18). I came up with the solution of waving to the motorcycle and not the motorcyclist.

—Mark Muhlenfeld

WHEN I WAS young, my Indian riding uncle explained that waving started as a rivalry between Harley and Indian riders. Early Indians had the throttle on the left, so they waved with the right. Harley riders took that as an insult and their right-hand wave was as insulting to Indian riders.

—George Edwards

AS A RIDER over 60, I carry baby aspirin in my first-aid kit (MCN 11/18). You mentioned aspirin, but did not specify dose. I'll wager that folks who've had a cardiac event in a remote place, hours from medical care, came out better because they had baby aspirin in their kit.

—David May M.D.

WALT FULTON MADE strong points in "What makes a good rider?" (MCN 11/18). A major component of situational awareness is the ability to predict what is going to happen next.

Apply visual control and situational awareness toward predicting how situations may change. By anticipating how various factors will come together, we can be ready to adjust position or speed to compensate for dynamic traffic situations.

—John Stauber

"B-LIST BRAIN TUMORS" BY DR. ROSEN (MCN 10/18).

Folks who read my 2017 columns know that I'm intimately familiar with brain tumors. Mine was a very slow-growing olfactory groove meningioma that eradicated my sense of smell a decade before being diagnosed, after finally getting large enough to provoke a seizure. A bi-coronal craniotomy was required to retrieve an extra-large-egg-sized mass from the center of my head.

When my ability to smell first disappeared, I went to three different physicians with the explicit question of whether this might be due to a brain tumor. All three told me I was overreacting to a not-uncommon aspect of aging. One said I should be glad I'd no longer have to endure offensive odors! All resisted ordering a CT or MRI to investigate this symptom further or conclusively answer my question. After No. 3, I concluded I must be a hypochondriac and stopped asking.

As a clinical psychologist, I frequently encounter brain-based problems that get construed as anything from laziness to hysteria. People are reluctant to think of symptoms as neurological, rather than psychological. Physicians can have this same cultural bias, despite extensive training and experience.

In some cases, this bias converges with insurance contract disincentives against using expensive diagnostics. Nevertheless, odd experiences, including memory loss, personality changes, altered mood, motivational deficits or excesses, to name a few, may be indicative of neurophysiological pathology and should be evaluated with this possibility taken seriously.

We need to be good consumers of medicine, as well as motorcycles. That can mean hunting for a doctor who really listens, and advocating for yourself when your concerns are dismissed or trivialized. It is certainly possible to overreact, but if the first "diagnosis" comes without any real investigation, find a different doctor.

—Mark Barnes, Ph.D.

I was diagnosed with a right sided Acoustic Neuroma (AN) in 2013, after suffering some hearing loss at age 47 (MCN 10/18). I had the tumor surgically removed in early 2014 and entered a long period of recovery.

An AN is a small tumor that grows on the protective sheath of the auditory nerve where it passes through the skull. Signs and symptoms include ringing in the ear (tinnitus), hearing loss, facial paralysis (similar to stroke symptoms) and balance issues.

Fortunately, AN's are almost always benign and can be treated with traditional surgery, radio surgery or simply left in place and closely monitored as they can be very slow growing. However, if left untreated, the symptoms become severe and lead to death, as the tumor pushes against the brain stem.

My recovery is ongoing and, at first, included severe headaches and severe balance problems. Currently I suffer from permanent right-side deafness and tinnitus. Time and many hours spent in vestibular therapy have greatly improved my condition, although my balance will never return to normal.

I returned to riding my 2008 Kawasaki Concourse 14 six months after my surgery. You can imagine how that conversation went with my surgeon. I found riding relatively easy to return to. In the sitting position my balance feels normal and the bike's stability at speed feels natural.

Where I sometimes have trouble is maneuvering the bike out of a parking space or around the garage while standing. Balancing the weight of the bike against my own feels awkward and I have a hard time anticipating and executing fine shifts in position and weight placement to control the bike.

I applaud MCN for exploring the many health related aspects of motorcycling, both interesting and valuable.

—Pablo Davis

I HAVE HEARD that if a rider goes down, the helmet should be replaced. Where can I find published articles substantiating this?

—Eli Weiss

SEND LETTERS TO THE EDITOR

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If a helmet hits the ground with a head inside of it, the expanded polystyrene (EPS) foam layer compresses, by design. This is what protects our brain, by slowing its decelerative force internally against the skull. It also reduces the likelihood of skull fractures, contusions or hemorrhaging.

The EPS is what makes a helmet a one-time use product, as it doesn't rebound and is not reusable (but is recyclable). Any helmet research institute or manufacturer should have data to support this, regardless of which sport the helmet is used for.

Check NFL research, as they have recently been put under the microscope with many helmeted low-speed concussion injuries.

There are newer helmet technologies being developed and implemented, but motorcycle helmets still vastly rely on EPS.

—David Hilgendorf

DOWNTIME

Flaky Oil and Hard Throttle Response

GOT PROBLEMS? MCN DOWNTIME
640 Avis Dr., Ste. 200, Ann Arbor, MI 48108
or email questions with JPEG images to:
editor@mcnews.com Subject: Downtime

I HAVE A 2013 Kawasaki ZX-14R. When new, it always lurched, accompanied with a loud clunk when shifting it into first gear at a standstill.

At the 600-mile oil change, I noticed quite a bit of copper and aluminum colored flakes in the oil. Kawasaki said it could be machining chips from the manufacturing process and to take it to a dealer to have it checked out.

Having lost faith in the dealer I bought it from, due to a management change, I took a sample of the oil to another Kawasaki dealer. The mechanic said "they are all like that." I asked if it would go away after break in. They said "no, we see that all the time. Don't worry. They run forever"

I have never seen that much stuff in any oil change. Over the years and oil changes, the lurch and loud clunk have diminished to a more reasonable level. I no longer see many aluminum colored flakes. The copper colored flakes have diminished, but I still see them after 20,000 miles.

An internet search turns up everything from, "they are all like that," to "the engine is going fail." It seems to run perfectly fine. Should I be concerned?

—John

Some transmission designs are noisier than others, but I don't remember the ZX-14R being overly so. Kawasaki technicians should be able to determine if it's excessive.

Lurching could be from new clutch components, engine oil or a combination thereof. The plates can drag, even when the clutch is fully disengaged (lever pulled in). Drag can be caused by viscosities, surface tension and close tolerances. It may drag less as the clutch wears (greater tolerance) and when the fluid is warm (thinner viscosity). The ZX-14R plates are a paper and phenolic resin base that wear in quickly, grab well and last a long time.

The issue is most likely the oil. Try different classifications of JASO oil; MA, MA1 and MA2. Each fluid classification performs differently with clutch dynamics. One factor is the Dynamic Friction Index, (DFI) which indicates clutch consistency while slipping. Another is Static Friction Index, (SFI) which indicates how long it takes for the clutch to fully grab once engaged. Either could cause a grabby feeling.

MA has the lowest ratings (most slip) for these categories, MA1 can be grabbier and MA2 more still. I say "can" because the ranges for each classification overlaps. To get more or less grab, you should stay with a specific manufacturer and call their tech support for suggestions.

Unfortunately, you won't get this service from an OEM, since there is no direct line to an engineer. Aftermarket companies tend to be smaller and their tech support teams work closely with the formula developers. Keep in mind they could suggest an oil that doesn't seem right for your bike.

You may get recommendations for a V-twin, motocross or some other product. It will still protect your engine as intended. Different additives and oil packages can be designed for a wide range of applications. Sometimes the same exact product is relabeled and sold to several different target markets, but could work perfectly fine for yours.

The clunking will be more significant when the clutch is grabby, because it drags and causes a collision between the transmission dogs and slots, then causes slack in the drivetrain when engaged. As the clutch condition improves, the gear shift should improve as well. What I look for when testing is a change in rear wheel shift when the clutch is pulled in fully, both warm and cold. Transmission dogs and slots don't wear in; they wear out. You want the edges to be square and solid. As they wear, the edges round and eventually disengage under power, causing false neutrals.

Some gold and silver colored shavings are normal during a first service and possible during subsequent oil changes. Straight cut gears can delaminate or shed surface material with extreme pressure and heat. What looks gold is sometimes heated and discolored steel. It's not necessarily the soft bearing materials from the transmission and crank.

You can send the oil to a testing lab for less than $10 per test. Look for one near a small airport, as oil testing is required on the small four-stroke engines. The type of particle and density can indicate where wear is coming from. The analysis won't examine big flecks you see with the eye. It will see wear of parts in smaller particles, under 40 microns.

Many bikes continue to drop off metal shavings throughout their lifetime. One R6 collected a peanut-size mass of black, silver and gold particles at every oil change, over 60,000 miles and 10 years. Only an oil test will really tell what's going on. Since each engine wears differently, it helps to have several data points over time.

In racing, we tested oil samples after every race weekend. After gathering data from five oil changes on a new engine, we could see the break-in cycle and knew exactly what normal was. With each test, we could proactively determine when the engine was about to fail and where to make repairs.

Add new titanium valves and you'll see excessive particles of titanium

that will taper off as the valves seat-in. A deteriorating cylinder will show viscosity dilution from fuel and an increase of chrome and molybdenum from rings and cylinder coatings. Silicon indicates dirt bypassing the air filter, or a messy job on sealants. Aluminum suggests clutch basket or cam journal wear, etc.

It may be a best-kept secret that oil testing is an inexpensive, but highly valuable tool, as it is seldom used by technician or rider.

—Kevin O'Shaughnessy

I OWN A 2006 Ducati Multistrada 620 Dark. That model had a single front disc and according to everything I've seen, Marzocchi forks.

I recently decided to upgrade the front suspension with Race Tech springs and emulators, which I had on a NT650GT Hawk and a Tiger 955i. But I did not see this bike listed on their site. Race Tech said they'd never done one and had nothing to offer.

Some years ago, you reviewed a new suspension product that controlled rebound on one fork and compression on the other.

Also, my bike suffers with sometimes surprisingly hard throttle response off idle. I'd read references to this, but haven't found a cure.

—J.B. Noble

I checked the Race Tech database for your model and fork manufacturer but was not able to find specifics. I would have to see the forks and do some R&D to determine spring sizes, spring rates, damper parts and shim stiffness coefficients.

I've seen two variations of Marzocchi forks on similar bikes. One type had a sealed, nonserviceable cartridge. On these versions, the most you can do is replace oil viscosities to affect damping.

A thicker fluid will make compression stiffer and rebound slower. Thinner fluids will have an opposite effect. This tuning variable changes both damper circuits. They aren't individually tunable. Considering compression and rebound have opposed jobs, adjusting one circuit may push the other circuit out of ideal range.

Seals and oil level can be changed on any fork. Oil level is used as a tuning variable for bottoming resistance. More oil—or a smaller air gap—ramps up air pressure sooner in travel, creating more spring and bottoming resistance and reducing travel. Less oil or a larger air gap will allow more travel.

The other version of Marzocchi fork had serviceable valves, with only one valve in each fork. One fork valve handled compression and the other handled rebound; however, some of these were made with limited room for tunability and with oddball shim and valve size. They could require special spacers or completely new valve systems.

Making kits for a specific model is cost prohibitive, but sometimes the stock valving can be modified or revalved. A solo specialist would be more likely to do this for you. For either application, the tuner would have to open them up and match or manufacture parts.

Because each fork has a separate circuit, you can use a thinner viscosity to reduce damping or thicker viscosity to increase damping individually per circuit or fork.

Hard throttle response off-idle could mean it accelerates abruptly or has a hesitation issue. If it is abrupt, it can usually be tuned out with an aftermarket EFI tuner. If the surge developed over time, it could be as simple as a bound or misadjusted throttle cable or linkage. Try lubing and adjusting the throttle cable.

Since it's EFI, you may need a new TPS or APS sensor, which detects throttle position. These sensors use a pointer/contact that wipes over a resistive strip. Over time, the resistor medium wears out or wears through and causes fluctuations in resistance. The result is inaccurate voltage per throttle position, which could cause hesitation or surging.

These sensors can be tested by the OEM diagnostic tool, ideally in real time graphics or live numeric data by slowly increasing throttle. If there is a sudden spike or drop in voltage, the ECU will detect this as a rapid change of throttle position and react accordingly. Insufficient clutch free play may cause the clutch to grab sooner or more aggressively than you'd expect. Check the clutch release mechanism and play.

Check your fuel pump filters, fuel pressure and ideally fuel volume, if specified. A decrease in pressure should decrease acceleration and peak power, but a stuck closed pressure regulator could cause high pressure. In effect, it would cause a rich condition that could hesitate initially then surge or feel abrupt in general. Typically, a drop in pressure comes from a worn or rusted check spring, rarely too much pressure.

Finally, check your top end clearances. A tight valve can cause hesitation and hard starting erratic idle and other throttle problems. As a side note, any time you service a Ducati top end, it's an ideal time to change timing belts, while you are in there.

Check your belt replacement interval and make sure it is changed if close or overdue. Belts run about $70 per head, but a broken belt can cause significant and costly top end damage.

—Kevin O'Shaughnessy

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

Pipeline

> Edited by **Russell Evans**

» Kawasaki

THE NEW Z400 is powered by a 399cc parallel twin and features a lightweight trellis frame. With its low seat height, manageable power and $4,799 price tag, the company has made the new small displacement bike accessible to riders of all sizes, ability levels and economic mandates.

The Z400 carries on the Z Model Sugomi styling, and the engine is the same one that powers the company's Ninja 400. Shifting through the close gear ratio is aided by a compact assist and slipper clutch.

Another new model, the W800, is a stylish midsize, inspired by the brand's low-slung 1966 W1. The retro-feel bike is powered by a 773cc air-cooled vertical twin encased in an Advanced Dynamic Analysis Designed Frame, for nimble handling. Comfortable saddle, mini-bullet fairing and opposing chrome exhaust pipes underscore the vintage stance.

The company's popular Versys sport tourer gets upgrades with new Kawasaki Electronic Control Suspension, smoother engine with electronic throttle valves, a new electronic suite, new TFT color instrumentation with integrated riding modes, new smartphone connectivity via RIDEOLOGY THE APP, and new bodywork with led headlights and cornering lights.

The supercharged Ninja H2 SX SE+ has new electronic Control Suspension, Brembo Stylema calipers, Highly Durable Paint, Integrated riding modes and smartphone connectivity via RIDEOLOGY THE APP. ***kawasaki.com***

Z400

Ninja H2 SX SE

W800

Versys 1000 SE LT+

1200 XE

1200 XC

» Triumph

THE NEW SCRAMBLER 1200s have the latest generation, high power 1,200cc Bonneville engine, featuring a dedicated 'Scrambler tune' with a 270° firing interval, for smooth power conducted by a six-speed gearbox. The 1200 engine provides 89 Hp @ 7,400 rpm—12.5 percent more power than the Bonneville T120 and 38 percent more than the 2019 Street Scrambler. Both the XC and XE have new, fully-adjustable twin-spring Öhlins rear suspension units which provide increased off-road capability and ground clearance.

The more extreme, off-road oriented XE version delivers 9.8 inches (250mm) of wheel travel, and the dual purpose XC delivers 7.9 inches (200mm). Both models are equipped with piggy-back rear shock reservoirs.

Both Scramblers also feature a new, long-travel aluminum swingarm, which is longer on the XE version. There are also premium Brembo M50 radial monobloc calipers, adjustable and folding foot controls on the XE model, tubeless tires mounted on spoked rims, and 21-inch front wheel.

triumphmotorcycles.com

» Yamaha

THE NIKEN GT Leaning Multi-Wheel (LMW) motorcycle has been introduced as a more touring-focused version of the previously released NIKEN. Featuring a pair of locking quick-release 25-liter ABS side cases, a wider and taller touring windscreen, comfort seat, heated grips, the new NIKEN GT seeks to add cornering confidence combined with comfort and convenience for longer rides.

The popular FJR1300A and FJR1300ES motorcycles were also revealed, joining the previously introduced Tracer 900 and Tracer 900GT models, to complete the company's 2019 Sport Touring lineup.

yamahamotorsports.com

Niken GT

PIPELINE

» KTM

THE 1290 SUPER DUKE GT, the company's 175-horsepower sport tourer, adds a Quickshifter+, just in case you want to get where you're going even faster. Clutchless shifting smooths out the ride already optimized by KTM's electronic performance and assistance systems. Set behind the new aerodynamically developed windshield with multiple height positions and improved one-handed adjustability is a 6.5-inch TFT display.

The 1290 SUPER DUKE R receives a graphics update to keep up with 177 hp of maximum power, with the aid of wide, low handlebars, the Brembo monobloc brakes, cornering ABS, competition-developed WP suspension, optional two-way Quickshifter+, multifunctional TFT display and LED headlight. ***ktmusa.com***

1290 Super Duke GT (top) and 1290 Super Duke R

» Honda

CBR650R

CB650R

THE CBR650R replaces the CBR650F in Honda's lineup, with new, aggressive styling and a racier riding position to offer more highly tuned sport performance for the street. The four-cylinder 650cc engine revs higher and gets more power and torque, as well as Honda Selectable Torque Control (HSTC) is available on the ABS version, and both versions have an assist/slipper clutch.

In the naked class, the CB650R replaces the CB650F. The Neo Sports Café styling echoes that of the CB1000R, featured in this issue (Page 22).

Honda's smaller CBR500R also gets an aggressive, aerodynamically driven, sporty makeover, plus a racier riding position. Contrasting angles and shaping—between very slim and more muscular—outline the bike's new look, from the fairing nose to the seat unit. ***powersports.honda.com***

LATEST RECALLS BY NHTSA.GOV

Make: Harley-Davidson
Model: 2017-2018 Police Road King (FLHP), Road King (FLHR), Road King Special (FLHRXS), Electra Glide Ultra Classic (FLHTCU), Ultra Limited (FLHTK), Ultra Limited Low (FLHTKL), Ultra Limited Shrine (FLHTK SHRINE), Police Electra Glide (FLHTP), Street Glide (FLHX), Street Glide Special (FLHXS), Road Glide Ultra (FLTRU), Road Glide (FLTRX), Road Glide Special (FLTRXS), Freewheeler (FLRT), Tri Glide Ultra (FLHTCUTG), CVO Limited (FLHTKSE) and CVO Street Glide (FLHXSE) motorcycles, 2017 Softail Slim S (FLSS), Fat Boy S (FLSTFBS) and CVO Pro Street Breakout (FXSE) , 2018 115th Anniversary Ultra Limited (FLHTK ANV), 115th Anniversary Street Glide (FLHX ANV), 115th Anniversary Street Glide Special (FLHXS ANX), 115th Anniversary Tri Glide Ultra (FLHTCUTG ANV), 115th Anniversary CVO Limited (FLHTKSE ANV) and CVO Road Glide (FLTRXSE)
Component: Power train
NHTSA #: 18V734000

Make: Suzuki
Model: 2017-2018 DL650A, DL650XA, GSX-R1000, GSX-R1000R and 2018 GSX-S750
Component: Fuel System, gas
NHTSA #: 18V694000

Make: Yamaha
Model: 2015-2018 SR400
Component: Engine, engine cooling
NHTSA #: 18V730000

Make: Yamaha
Model: 2012-13 XTZ12 Super Tenere
Component: Electrical System
NHTSA #: 18V695000

Make: Honda
Model: CRF250L
Component: Electrical System
NHTSA #: 18V630000

Make: Fuel Helmets
Model: SH-OF0016, SH-OF0017
Component: Equipment
NHTSA #: 18E036000

Make: Kawasaki
Model: 2018 Ninja H2 SX SE
Component: Structure
NHTSA #: 18V580000

Strategy

STREET *BY WALT FULTON*

Visual Horizon

Have you ever wondered how far ahead you should look when riding? There has been a lot of discussion and debate about this topic.

Some "experts" suggest that it may not be a good idea to look too far ahead, particularly for new riders, lest they become victim to information overload. Others suggest a very specific distance, expressed as time, say 12 to 15 seconds. Many think looking 10 seconds ahead is reasonable. Finally, others recommend a sliding scale, based on 10 to 15 seconds, but adjusted to speed.

Looking ahead 15 seconds if you are traveling at 25 mph equates to 550 feet. Fifteen seconds at 70 mph is 1540 feet, more than a quarter mile. Let's delve a little deeper into these numbers.

Riding motorcycles is highly sensorial. It is possible for riders, especially inexperienced riders, to experience information overload when they attempt to gather and make sense of every piece of information available to every sensory input.

With riding time and miles comes experience, awareness and eventually an increased confidence and comfort level. Add a little responsibility and increased proficiency, by regularly participating in advanced rider training, and you'll eventually become an experienced rider.

Quickly separating useless data from what's important can be the difference between riding tomorrow or never again. Riders that take motorcycling seriously become sharp and focused, and can more easily handle the influx of information. They learn to filter out background noise and focus on the most important issues. Their fine motor control responses become more coordinated, even second nature—accurate, instantaneous and automatic.

WALT FULTON

It's not as important how far you are looking in the distance, but rather to maintain a visual horizon, assertively searching for things ahead that have the potential to become a conflict.

Think of it like organizing your workday; tasks that have the most importance are at the top of the list. Those that aren't as important are noted, but attention to them is of lower priority. Priorities can change quickly, just as they can while riding, in which case they must be reordered.

Continuous focus on the visual horizon and aggressive scanning ahead will improve your risk awareness and increase riding comfort. Never fixate on one thing, but keep your scan moving. Don't become complacent, instead be an active and assertive rider who maintains visual control. With riding experience will come better anticipation of threats and the ability to proactively avoid them.

Even as an experienced rider, with good visual awareness, I recently managed to crash my motorcycle after installing new tires (MCN 10/18). While I didn't think the tires were too slippery, lean angle too steep or throttle application too much, these are the primary factors that caused the slide. I made a mistake.

A subscriber inquired if I was wearing all the gear, specifically boots. I really do practice what I preach—All the Gear, All the Time. I've examined too many crashes where riders wore tennis shoes, which is not a pretty sight. I would have certainly smashed bones and collected a fair amount of road rash in shoes.

Unfortunately, the industry is focused on attracting next-generation motorcyclists, by advertising riders with minimal gear. Wrong message.

I haven't replaced any parts on the bike, yet, so that cost is not included here. My visit to the emergency room was interesting to say the least. While my ankle wasn't broken, the visit took an hour and a half. The final tally, nearly $3,000, or $2,000 per hour!

Crashing hurts and can be very expensive, even deadly. Visual awareness and proper gear will help you reduce these risks.

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

» **ADVENTURE** *BY GREGORY W. FRAZIER*

Surfin' Safari

Hocus-pocus are the sneaker waves and sleeper waves rolling ashore on the beaches of the Bering Sea, north of Nome, Alaska.

The expedition had taken several months to organize, including taxis, air cargo flights, plus bureaucratic barriers to getting myself and a motorcycle into town. I had been in the area for a week, exploring the gravel roads out of Nome to remote native villages, gold mines and hot springs. Then, off to the furthest points in Alaska, to see if the claim "No Thru Roads!" was true.

Several residents of Nome suggested I visit the Cripple River Camp for a free, all-you-can-eat spaghetti dinner. Having been camping and eating my own cooking for much of the previous week, it sounded divine.

However, no thru road reaching the gold mining camp required riding on the beach for 12 miles, then returning the same way.

I had done some beach riding with heavily laden motorcycles before, including Ninety Mile Beach of the north island of New Zealand (really only 55 miles, with a thru road). I've foolishly paid the $20 to drive 10 mph on the hard-packed sand of Daytona Beach, which was about as adventurous as driving through the Disneyland parking lot on a weekend—mainly dodging tourists.

However, numerous miles of real beach riding, including South America, Africa and Australia (busted myself up pretty good on a Tasmanian beach), made 12 miles north from Nome seemed doable.

Locals warned me that although four-wheel drive and all-terrain vehicles did the beach run daily, on two wheels it was best done at low tide and that the one major river crossing could be deceptively deep if it had been raining.

Admittedly, the first 100 feet out of Nome through the soft, dry sugar sand to the harder wet shore was tough stuff, even with my tire pressure dropped to 15 pounds. I dabbed and wobbled like a newbie on a loaded adventure motorcycle wallowing in a muddy grass lot. Once I hit the compacted sand left by the receding waves it was smooth going.

I quickly learned to watch the waves, ducking down to the harder sand as they receded, and avoiding the soft stuff near the top of the water line.

Beach riding was becoming fun, and I was humming "Surfin' Safari" until my front wheel hit a log buried in the sand as the surf rolled out. My Beach Boys tune instantly changed to four-letter lyrics over the instrumental "Wipeout" by the Surfaris, as my motorcycle flopped over. I had been counting waves, but hadn't seen one that would have pushed the log that far up onto the shore.

I scrambled to take a photograph, then right the downed motorcycle before the next wave rolled in and covered it in salt water. Waterproof bags aren't typically submersible, nor was the bike's air intake.

While frantically returning the motorcycle to upright and running, my thoughts were not on the hocus-pocus of wave theory, but the wise choice of a Kawasaki KLX250S for the expedition instead of a KLR650 or other adventure behemoth.

This Surfin' Safari had more low points, like losing time at the deep river crossing and being stuck axle deep in sand. The lost time meant missing the spaghetti feed and eating my own cooking again. Another was wet feet from the river entering the tops of my boots. Without dry socks or shoes, a near-freezing night was spent with very cold feet.

On the upside, I met some very nice gold mining folks, who welcomed me as the only motorcyclist to arrive in their camp in more than a week. The organizers also welcomed me, offering a free cold beer, which I declined for hot tea instead.

I was advised of the next low tide for the return to Nome, thus not having to count waves or deal with the deep river crossing.

The last laugh came when asked, "Why did you drive the beach, even tougher when it's high tide and raining? You could have taken the dry dirt track that comes in the back way."

TIPS

- Low tide is better than high tide when riding beaches.
- The soft sand recommendation to go faster and get the weight off the front wheel, means you will fly farther when you get off.
- The two best things to pack on an expedition are an addiction to adventure and sense of humor.
- Take heed when the Convention and Visitors Bureau says, "There's no place like Nome."

Dr. Gregory Frazier has authored four global motorcycle adventure books, logging six circumnavigations and over a million miles.

GREGORY FRAZIER

» **LEGAL** *BY HARRY DEITZLER*

Across State Lines

How does wording of laws differ between states? If it's not specifically made illegal (e.g., for two vehicles to share lanes), one could reason that a violation is not citable. Even though riders believe some actions are illegal, could they be legal elsewhere due to lack of legislation?

—Dave

Helmet laws present straightforward legal restrictions. The Motorcycle Legal Foundation assessed that the practice of lane sharing is neither mentioned nor expressly prohibited in 13 states, but has been legislated as illegal in the other 37 states. California DMV states, "California law does not allow or prohibit motorcycles from passing other vehicles proceeding in the same direction within the same lane, a practice often called lane splitting, lane sharing or filtering," which doesn't expressly legalize the practice.

While the specific action may technically not be illegal, a citation by an officer in a state that does not specifically prohibit lane sharing would likely be for illegal lane usage, reckless driving, following too closely or other related violations. We can argue that an action that is not on the books is technically legal, but that doesn't mean the officer will agree. Regardless of there being an actual law for a specific offense, there is almost always a different law that an officer can use to justify the stop or a citation.

Most motorcyclists try to avoid drawing the attention of law enforcement when riding. While national laws apply everywhere, the ongoing challenge is determining which state laws make us most visible when we ride between states. Noise ordinance and helmet law enforcement are likely the most common variables for stopping a motorcyclist, provided the bike has fully operational lighting.

The best defense is avoidance of risk before the fact, instead of having to hire a lawyer after. Keep your bike in legal and functional order, don't ride in a manner that is offensive to other drivers and wear a DOT approved helmet to reduce your risk of being pulled over anywhere. For riders that don't mind risking a citation, you can always try to negotiate with the officer, or take it to court.

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

» **DIRT** *BY GARY LAPLANTE*

The Discomfort Zone

I am surprised by how many experienced street bike riders have marginal overall riding skills and do not seek to improve them. This includes some professional instructors! Riders who resist new challenges are often afraid to leave their comfort zone, which could make them appear to be lacking skills in the company of others.

Everyone rides for different reasons. One reason is to enjoy a motorcycle's performance and develop the control required to safely experience maximum performance. Any rider who really wants to improve can find a plethora of cross-training options that will help. Take the Motorcycle Safety Foundation's good advice, when they say: "The more you know, the better it gets."

The fundamental problem is some riders are content with basic skills, which experienced riders know is a dangerous attitude to have. Additionally, the skills that riders must demonstrate to obtain a motorcycle endorsement in America are minimal. Consequently, there are many riders on the roads that would benefit from more training and practice.

If riders want to improve, they must leave their comfort zone and embrace new challenges. Welcome to the "discomfort zone." For riding enthusiasts, this zone is filled with many fun challenges. It features next-level training for competitors as well as control and confidence building exercises for average riders.

Good examples include road racers benefiting from dirt track training, street and sport riders benefit from dirt bike training, and off-road and motocross riders from trials training.

Riding motorcycles requires sharp skills that plateau, stagnate and even perish, unless they are used. Training-oriented riders know this, and constantly work to keep their skills sharp by entering the discomfort zone and cross-training.

There are many uncomfortable ways to have more motorcycle fun while improving your skills: You can take a tougher trail, ride in another location, attend a track day, ride on a motocross track, do some flat-tracking, or simply ride a different bike. It's worth it if you only learn one thing, as you'll come away with a better perspective and better range of riding abilities.

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

PRODUCT COMPARISON: RAIN BOOTS BY MARK BARNES

» TCX X-FIVE EVO GTX

Though TCX may not be as familiar a brand as Alpinestars, it's been establishing a reputation for well-engineered gear. Any criticism of these boots emerged only after we went back and forth between both models multiple times, with one exception. We found the X-Five Evo's collar slightly annoying, in that its unpadded edge pressed against our legs uncomfortably if we weren't wearing tall socks. Its snug dimensions and shallow rear cutaway don't help here. This won't be an issue with the right socks, but we'd rather not have to deal with the extra consideration.

Less significant nits may be irrelevant to some riders. These include the slightly rearward location of the PU shift pad and the inch of leather between the YKK zipper's lower end and the footbed, slightly reducing ease of ingress and egress. Depending on individual foot shape, the TCX's narrower toe box may feel better or worse than the Web's; it is both more pointed and angular and has less room vertically. TCX boots tend to run large in length; going down a size to get proper length can create a cramped toe box for wider feet

The outboard CE Level 1 ankle protection includes a plastic plate that, while not particularly hard, may promote sliding over grabbing or fraying. Also, the reinforced toe box and heel cup are a bit less rigid than those of the Web, but still quite substantial, and the TCX shin plate feels a bit stiffer.

This is a well-built, all-around performer, with full-grain leather upper (including the elasticated bellows) and a Gore-Tex waterproof lining. It is sturdy, protective, good-looking and more comfortable for walking than the Web GTX (in the right socks, with average-to-narrow feet). It sacrifices little ground to the Web, but it also costs 10 bucks less at $290.

TCX, *tcxboots.com*

» Alpinestars WEB GTX

The Web is a high-quality boot, featuring a vulcanized rubber sole with a unique tread pattern that creates an extraordinarily secure ground interface, regardless of the presence of water. The soles are comfortable for walking, but you wouldn't want to wear either of these models all day.

Hard CE Level 1 reinforcements are built into the heel cup and toe box and a reinforced shank adds stability. Ankle protection is provided by soft internal dual-density disks on both inboard and outboard sides. The covering of the outer disk is leather, not hard armor, and the bellows sections along the front and rear of the shaft are microfiber (synthetic leather), to increase flexibility. The boot is lined with waterproof Gore-Tex. A small reflective panel sits atop the heel, which has a taller counter than the TCX.

The Web's shin panel is bolstered by a very stiff internal plate, and the circumference of the collar is outfitted with stout padding that extends a few inches down into the boot and provides both a cozy, secure fit and a plush feel against the leg in any position. Despite this thicker material, the Web's slightly larger opening and deeper rear cutaway may better accommodate extra-large calves than the TCX.

While both models have sturdy elastic panels along the length of their YKK zippers, the Web's are a little larger and make zipping slightly easier without compromising closure security. The only criticism would be that the footbed feels a little harder than that of the TCX. If we'd only worn the Web, we probably wouldn't have noticed, and it was remedied by affixing some thin foam tape to the underside of the removable insole near the ball of the foot. The sophisticated and functional Web is a good value at $300.

Alpinestars, *alpinestars.com*

PRODUCT COMPARISON: THREE-SEASON GLOVES BY MARK BARNES

» Rukka APOLLO

The full-grain-cowhide Apollo is engineered with greater protection than the average touring glove, CE rated for impact and abrasion. Leather-covered hard TPU armor is plainly apparent in a wide floating panel across the back of the hand, as well as less obviously at the first knuckle of the third, fourth and fifth fingers.

The modestly proportioned gauntlet allows for very easy use inside a jacket sleeve. It doesn't open wide enough to work well on the outside of bulky gear, but will accommodate an uninsulated leather sleeve or lightweight textile jacket. Wearing the gauntlet outside the sleeve only seals out wind, as rain will flow down the sleeve and into the glove.

In addition to the more relaxed gripping action afforded by the floating knuckle panel, an elasticated portion on the back of the hand eases movement further. However, the latter should be longer, as it can slip out of its metallic loop. The hassle of rethreading isn't awful, but could have been eliminated with another inch of material. The leather beneath the wrist strap is also elasticated. Once on, the gloves feel extremely secure.

The Apollo's visor-wipe sits on the outside of the left thumb, allowing stiffer construction and better function than the one on the Ceres. Reflective material is sewn to the floating knuckle panel and three fingers; forefingers are adorned with a simplified Rukka logo in soft TPU. Though comprised of a few less components than the Ceres palm, the Apollo's still feels very substantial (and initially stiff).

Neither model has insulation or touch-screen fingertips, but curling the fingers of the Apollo felt slightly easier than the Ceres, despite the latter's flex zones. Neither model transmits the delicate touch sensitivity, but both had good feel, favoring greater protection over mobility. Bulk and clumsiness are reduced in both models by bonding waterproof Gore-Tex between the thin interior fabric and the exterior leather shell.

Like the Ceres, the Apollo's price puts it in the upper strata of sporty touring gloves, but we believe it is a good value. Available in all-black or black and white for $199.

●●●●◐ **Rukka, *rukka.com***

» Rukka CERES

Also CE rated, with prominently displayed carbon fiber knuckle armor, the most strikingly unique visual feature of the Ceres is its elasticated leather cuff. Combined with small sections of tough stretch fabric on both sides and only a small hook-and-loop tightening tab beneath the medial palm, this cuff allows very quick and easy ingress and egress.

The streamlined profile has enough length to provide complete coverage when tucked in. Short cuff gloves usually allow more airflow into jacket sleeves, but the Ceres cuffs seal well—an advantage in cooler weather, a possible disadvantage on hot days.

Some jackets may not interface well with the thick flap beneath this glove's palm heel. A little attention is required to get it positioned under a tight-fitting sleeve.

A similarly foam-backed carbon fiber slider resides at the heel of the palm. It looks thick enough to be awkward, but we never noticed it in use. That thickness should keep more of the glove off the road in a get-off. There's also a small foam pad at the base of the thumb and multiple reinforcing panels across the palm and in the crucial handgrip contact zone between thumb and forefinger.

Small panels of stretch fabric midfinger and elasticated leather knuckles add mobility, but these gloves resist curling fingers when new. The full-grain cowhide used on the underside of the fingers and palm is quite thick and requires significant break-in. We like the reassuringly burly construction and consider it worthwhile to endure some initial stiffness, which doesn't compromise control feel excessively.

The Ceres isn't cheap, especially for a glove with no gauntlet. However, compared to other high-end European options, it's still a good value, given its technical features, comfort and extraordinary protection in a compact package. Available in either all-black or black and gray for $219.

●●●●● **Rukka, *rukka.com***

The F 850 GS was designed to handle more rugged, natural encounters, with dual-sport tires and higher ground clearance than the 750.

BMW F 750 GS & F 850 GS

One engine, two experiences, to meet the needs of different riders

> By **David Hilgendorf**

The F series GS has represented BMW's middleweight adventure segment since 2008. A balanced combination of sport-touring and off-road capability originally marketed as the F 650 GS (replaced by the F 700 GS in 2012) and F 800 GS. All three models shared the same 798cc parallel-twin powerplant used in the F 800 R, S, ST and GT models. After a decade of success, BMW recently updated the engine.

The new F 750 GS was designed for riders who desire the enduro look, but require a lower seat height, lower price, and intend to ride primarily on pavement. In BMW parlance, the 750 is for "Seizing Opportunities." The F 850 GS instead offers more power and torque in addition to more aggressive off-road ability—for "Seeking Challenges."

We spent a couple of days tooling both bikes around on- and off-road in the backcountry of western Colorado, eastern Utah and southern California. The 750 with street tires and the 850 with Metzeler Karoo 3 dual-sport treads (BMW also options Conti TKC80).

ENGINE

The new 853cc parallel-twin, four-stroke engine used in both bikes features DOHC and four rocker arm-operated valves per cylinder. A pair of counterbalance shafts provide greater

KEVIN WING/BMW

smoothness and less vibration than the former models. Development focused on increasing power and torque, while reducing fuel consumption.

The crank pin offset was changed to 90 degrees and firing interval to 270 and 450 degrees (from 360), which provides a more pronounced aural sensation. Compression was increased from 12 to 12.7:1 and max rpm increased to 9,100 on both models, per our dyno.

Ride modes include Road and Rain as standard. Dynamic, Enduro (both) and Enduro Pro (850 only) riding modes—including dynamic traction control (DTC), automatic stability control (ASC) and ABS Pro (with lean angle sensors)—are available via options packages.

These advanced modes allow further customization of each of the electronic sensors to suit the rider's skill and riding environment. Though "optional," the Select ($2,400) or Premium ($3,450) packages will be included on virtually every model imported to America.

The exhaust system was relocated to the right-hand side. Better for pushing the motorcycle from the left-hand side and reducing the risk of burns.

Riding both models back to back indicates that while the 850 is indeed more powerful, its primary advantage is off-road ability. Both bikes accelerate briskly, handle well and easily exceed 100mph, making either suitable for sport-touring purposes.

The few missing ponies on the 750 are a good trade-off for lower cost and seat height, if those are priorities. Either can billy goat up a hill in first gear.

KEVIN WING/BMW

TRANSMISSION

The wet, self-amplifying, anti-hop clutch provides a reduction in clutch operating force and engine braking, and is optimized for off-roading. Power to the rear wheel is via a six-speed gearbox with chain final drive, now repositioned on the left-hand side.

Shift assist Pro is included in both option packages, allowing both up and down shifting without the clutch. In practice shifting was flawless and shift assist is a welcome addition for both beginners and more aggressive riders.

The dry-sump lubrication collects oil escaping from the main bearing, seals it off from the oil sump and pumps it to the gearbox, reducing churning loss.

SUSPENSION AND HANDLING

BMW optimized the chassis by replacing the former tube frame with a new bridge-type steel monocoque, for increased rigidity, improved load distribution, lighter weight and better ergonomics when standing.

A steel 4-gallon tank resides in the standard position forward of the seat (versus plastic, rear-mount tank on the old models), which greatly improves center of gravity and narrows both the center and rear of the bike.

The choice of steel over aluminum is due to the expected off-road conditions these bikes will be subjected to.

Both models feature improved, preload and rebound adjustable suspension, with 41mm diameter standard forks on the 750 and 43mm inverted forks on the 850. A new shock controls the double-sided aluminum swingarm.

Ground clearance is increased a fraction of an inch on the 750 over the 700, but is 1.3-inches taller on the 850 than the 800, allowing 8.6-inches of suspension travel (6.9 inches on 750).

BMW's Premium package adds dynamic electronic suspension adjustment (ESA). Travel movement and speed are recorded by a sensor in the central spring strut, even while cornering. ESA automatically adjusts damping in milliseconds by means of electrically activated control valves, according to riding conditions.

The dynamic ESA communicates with other control systems, such as ABS, ASC and DTC, and is linked with the ride modes as well. If sport riding is preferred, selecting the Dynamic setting allows for a stiffer shock configuration. In Enduro modes, ESA improves suspension response and traction for off-road riding.

The wheelbase has been reduced by 0.7-inches on the 750 and 1.3-inches on the 850. Rake decreased up to 2 degrees, but trail increased about three-quarters of an inch on both models. Overall this makes them more responsive to inputs.

The F 750 GS has a street-oriented bias and comes with mag wheels. The 850 rims are cross-spoked, tubeless and knobby optional.

BRAKES AND WHEELS

The 750 has die-cast aluminum wheels; 110/80 R19 front and 150/70 R17 rear. The 850 is fitted with tubeless cross-spoke wheels with aluminum rims; 90/90 21 front and 150/70 R17 rear.

The 21-inch front wheel provides more stability off-road. Factory off-road tire options for the 850 include either Metzler Karoo 3 or Continental TKC80s, at no additional charge. Optioning the 850 with knobby tires sacrifices 10 horsepower at the rear wheel and increases emergency stopping distances by about 25 percent on pavement.

ABS and stability control are standard and can be deactivated. ABS Pro is included with the option packages and adds lean-angle sensors for braking in corners. The Premium package includes tire-pressure sensors (TPS).

A 305mm dual disc brake with two-piston caliper on the front wheel ensures stable deceleration. A single 265mm disc at the rear is squeezed by a single-piston floating caliper.

In Enduro mode, the ABS is tuned to be unobtrusive, so it can be used on loose terrain. In practice it worked as advertised, but was still noticeable. In Enduro Pro mode (850 only) the rear-wheel ABS is deactivated, allowing experienced riders to drift.

ERGONOMICS

Seat position was optimized, and the bikes are both narrower between the legs and easier to ride standing up. A variety of seat options allow the 750 to range from 30.3 to 32.7 inches in seat height. The stock 32-inch seat height on the 750 is nearly identical to the 700. The 850 offers 32 to 35-inch seat options, with the stock 33.8-inch seat being about three-quarters of an inch lower than the 800.

Riding a GS proves why adventure bikes are so popular. They combine the ergonomics and performance of a standard, sportbike and dual-sport into one lean and mean package. Approved.

INSTRUMENTS AND CONTROLS

LED lighting is standard equipment on both models. The Premium package includes a headlight style element that BMW refers to as an inverted tuning fork. Since Yamaha makes tuning forks, we chose to call it a wishbone instead.

The Premium package also includes keyless ignition, steering lock and fuel filler cap (plus anti-theft alarm, sold separately). The option packages both include a stunning 6.5-inch, full-color TFT display—one of the best in the industry. It clearly displays exactly the information needed at a quick glance, in any lighting, and is customizable for different data points.

Integrated Bluetooth connectivity connects to a smartphone and helmet communication system, adding the ability to make calls or listen to music. The free BMW Motorrad Connected app (Android or Apple) offers navigation via the TFT display. It can record routes and display travel information.

ATTENTION TO DETAIL

Standard features now include handguards, luggage rack, stability control, LED lighting, adjustable brake, clutch and shift levers, cross-spoke rims (on the 850), as well as removable passenger pegs and rubber footpeg inserts. Many of these items came at additional cost on the prior models.

Styling mimics the R 1200 GS, which BMW refers to as the "flyline," including the front beak as well as tank and seat curvature. Sat side-by-side, the F 850 GS looks every bit as sizable and capable as its big brother. The biggest visual differences are the missing boxer heads.

VALUE

BMW markets the F 750 GS starting at $10,395 (up $400 from the 700) and the F 850 GS starting at $13,195 (up $900 from the 800). However, BMW also outright admits to not importing the base models to the U.S. Don't expect to find those prices at your dealer. Base models must be special ordered, and come with an analog instrument cluster.

Realistically speaking, the 750 will start at $12,795 with the Select package or $13,845 with the Premium package, and a bit more with delivery and certain paint schemes ($100 or $250). The 850 will start at $15,595 for Select and

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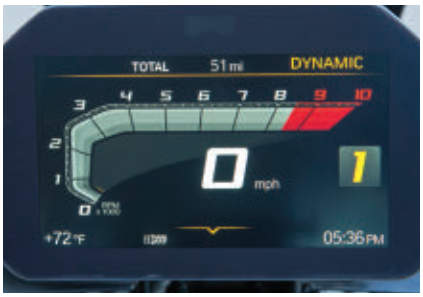


$16,645 for Premium, maxing at $16,920 with paint ($275), plus delivery.

The $2,400 Select package adds a larger rear rack with bag mounts, cruise control, heated grips, the full-color TFT with connectivity, shift assist, dynamic traction control, ABS Pro (with lean sensors), Dynamic and Enduro ride modes (plus Enduro Pro on the 850) and BMW's GPS prep package with scroll-wheel (the GPS head unit is still optional). That's a no-brainer.

The $3,450 Premium package includes everything in Select and adds either dynamic electronic suspension or the lowered suspension option, keyless ignition, fork and tank locks (alarm is optional), tire pressure monitoring and the wishbone-styled headlight.

Additional standalone options include the taller comfort seat ($145), low seat (no charge), low suspension ($250), anti-theft alarm ($395), Akrapovic HP sport exhaust ($750 and 5.2-pounds lighter), centerstand ($175), and off-road tires (no charge, for 850 only).

While both bikes offer an excellent package of useful items, none include bags, engine guards, or other common farkles that touring and adventuring owners are sure to want. Be prepared to buy the adventure gear a la carte, or wait a little bit longer for the GSA. MCN

TESTERS LOG

Less Giant Sized (GS), thanks to reduced height (750) and weight (both). Parking the 850 next to a 1200, it appears to be roughly the same size. When riding them, the 850 feels nimbler, more balanced and still plenty powerful.

Pushing these new twins both on road and in rough indicates the 750 is enough for most riders, though I didn't like its stock rubber. BMW intentionally dumbed the 750 down to keep the price attractive, while not cannibalizing 850 sales.

However, if dirt is calling, the 850 has enough checked boxes to make it the better choice of the two. The power, sound, suspension and electronics are better, a real do-everything bike. I don't consider myself an off-roader, but the 850 with knobbies would be my choice—just in case.

It's hilarious that BMW adds all their technological and electronic wizardry to these middleweights, then charges $2,400 to access Enduro Pro mode, to turn it all back off. Fortunately, other additions make the Select package worth the price.

—David Hilgendorf

Both of these bikes are wonderful to ride on the tarmac, with dreamy suspension, all-day ergonomics and loads of technology to play with. Both feel like they have much more power than the dyno reports and are near identical in performance.

If you're not an expert in the dirt, don't plan on leaving the pavement, unless you're packing a portable hoist or a buddy to help you pick up the bike when you drop it. And you *will* drop it. These bikes are both pushing 530 pounds wet, and are quite top-heavy.

This is not a bad thing on twisting roads, which the two new GS's gobble up with precision, as the upper girth tends to facilitate comfortable and controlled leans. I'm a lifelong dirt bike rider and I did not feel all that comfortable on the 850 as we sampled 20 miles of un-maintained dirt road—without my hoist.

A longtime motorcycle shop owner told me most new owners of these bikes quickly come in and swap out the knobbies for street tires and other pavement concessions.

—Russell Evans

These twins impressed on several levels, including low end grunt, clutch feel and power delivery. Even walking-speed U-turns were easy.

Great ergonomics. Despite the tall size, both were surprisingly comfortable and maneuverable, with excellent suspension, which was better on the 850.

Infotainment and hand controls were easy to use, despite copious options and switches. The biggest downfall on the 750 was the overly stiff OEM Metzeler street tires, holding back midcorner feel and grip.

The GS gets even better at 850. Power delivery was ample, hinting at overkill. Gobs of torque and linear delivery that pulls hard through 8000 rpm. Great lighting, intelligent blinkers, adjustable controls, quick shifter, traction control, steering damper and skid plate are cool bits.

Despite knobby tires on the 850, it had above average grip and braking feel on pavement. Disengaging ABS improved braking. Both bikes were a bit intimidating off-road, because of their weight.

—Brant Wiwi

KEVIN WING/BMW

2019 BMW F 750 GS

CycleStats™

QUICK HITS

MSRP: $12,795 as tested (Select)
Category: Standard
Displacement: 853cc
Engine Type: Liquid-cooled four-stroke parallel twin
Warranty: 24 months, unlimited
GVWR: 970 lbs.
Wet Weight: 526 lbs.
Carry Capacity: 444
Seat Height: 32.75 in.
Colors: Austin Yellow Metallic, Stereo Matallic Matte, Light White

SPECIFICATIONS

Valvetrain: DOHC, 4 valves per cyl.
Bore & Stroke: 84mm x 77mm
Comp. Ratio: 12.7:1
Transmission: 6 speed
Final Drive: Chain
Fueling: Electronic Fuel Injection
Tank Capacity: 4.0 gal.
Fuel Grade: 87 octane (regular)
Exhaust: 2-into-1-into 2
Ground Clearance: 8.75 in.
Wheelbase: 62.0 in.
Rake & Trail: 27° / 4.1 in.
Tires: Bridgestone Battlax 110/80 R19 front; 150/70 R17 rear.
Brakes: Hydraulically activated twin 305mm disc brake, 2-piston floating caliper; Hydraulically activated single 265mm disc brake, 1-piston floating caliper, rear.
Suspension: Telescopic fork, 41mm, front; Spring rest hydraulically adjustable, rebound damping adjustable monoshock.

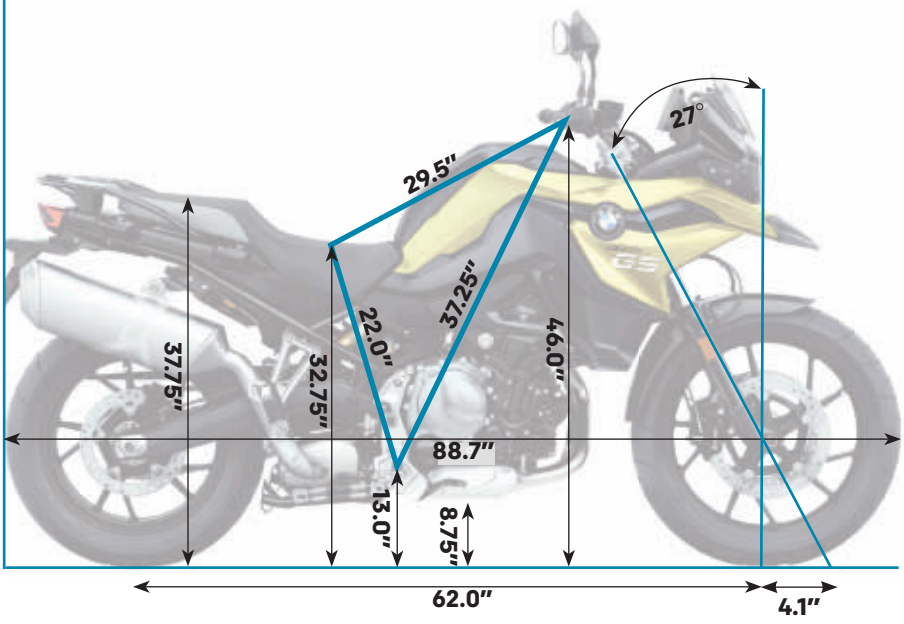
ELECTRICS

Battery: 12V / 10Ah, maintenance-free
Ignition: Electronic
Instruments: Speedo, tachometer, trip 1 and 2, clock, amb. temp., fuel gauge (bar), range
Indicators: gear select, traction control, ABS, heated grips, suspension setting, engine, service.

MAINTENANCE

($130/hr.)	Miles	Labor	Parts	Total
Routine	6000	$210	$70	$280
Valves	12000	$540	$300	$840

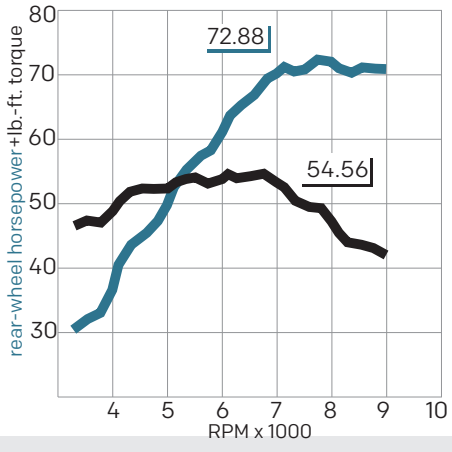
GEOMETRY



PERFORMANCE

(on street tires)
Fuel Economy (MPG)
High: 46 ; **Low:** 41; **Average:** 43
Estimated Range: 172
60-0 mph: 123 feet
0-60 mph: 3.77 sec.
1/4 mile: 12.57 sec. @ 105.2
Power to Weight: 1:7.2
Speed @ 65 mph: 63
RPM @ 65 mph: 4,000
RPM @ limit: 9,000

HORSEPOWER & TORQUE



SMILES
1. Lower seat
2. TFT Display
3. Smooth and stable

FROWNS
1. Stiff tires
2. Detuned
3. No $10k base model

EVALUATION

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

2019 BMW F 850 GS

CycleStats™

QUICK HITS

MSRP: $16,920 as tested (Premium)
Category: Dual-sport
Displacement: 853cc
Engine Type: Liquid-cooled four-stroke parallel twin
Warranty: 24 months, unlimited
GVWR: 891
Wet Weight: 532 lbs.
Carry Capacity: 359
Seat Height: 34.75 in.
Colors: Pollux Metallic Matte, Racing Red, Light White

SPECIFICATIONS

Valvetrain: DOHC, 4 valves per cyl.
Bore & Stroke: 84mm x 77mm
Comp. Ratio: 12.7:1
Transmission: 6 speed
Final Drive: Chain
Fueling: Electronic Fuel Injection
Tank Capacity: 4.0 gal.
Fuel Grade: 91 octane (premium)
Exhaust: 2-into-1-into 2
Ground Clearance: 10.0 in.
Wheelbase: 63.0 in.
Rake & Trail: 28° / 4.9 in.
Tires: Metzeler Karoo 3 90/90 21, front; 150/70 R17 rear.
Brakes: Hydraulically activated twin 305mm disc brake, 2-piston floating caliper; Hydraulically activated single 265mm disc brake, 1-piston floating caliper, rear.
Suspension: Telescopic fork, 41mm, front; Spring rest hydraulically adjustable, rebound damping adjustable monoshock.

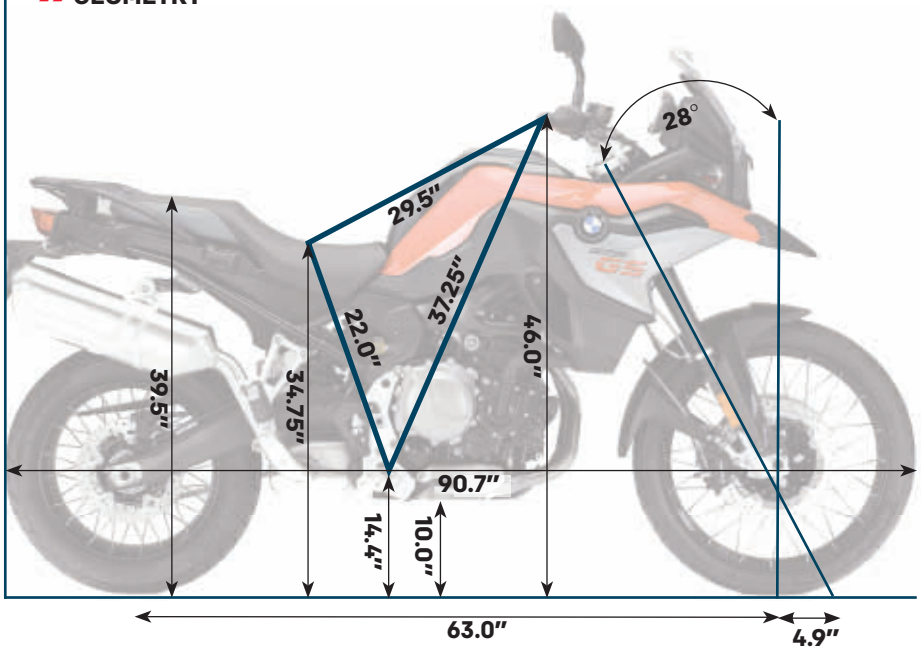
ELECTRICS

Battery: 12V / 10Ah, maintenance-free
Ignition: Electronic
Instruments: Speedo, tachometer, trip 1 and 2, clock, amb. temp., fuel gauge (bar), range
Indicators: gear select, traction control, ABS, heated grips, suspension setting, engine, service.

MAINTENANCE

($130/hr.)	Miles	Labor	Parts	Total
Routine	6000	$210	$70	$280
Valves	12000	$540	$300	$840

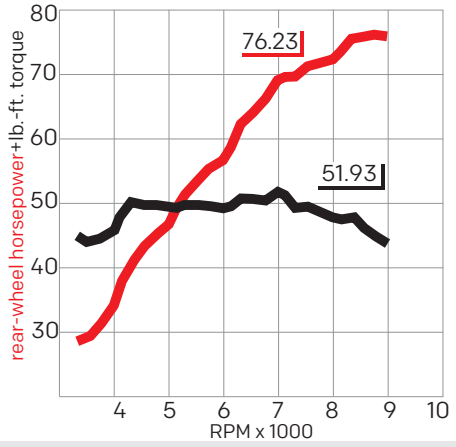
GEOMETRY



PERFORMANCE

(on dual-sport tires)
Fuel Economy (MPG)
High: 47; **Low:** 44; **Average:** 46
Estimated Range: 184
60-0 mph: 157 feet
0-60 mph: 3.79 sec.
1/4 mile: 12.61 sec. @ 106.05
Power to Weight: 1:7.0
Speed @ 65 mph: 63
RPM @ 65 mph: 3,950
RPM @ limit: 9,000

HORSEPOWER & TORQUE



SMILES

1. Capable all-around
2. TFT Display
3. Exhaust note

FROWNS

1. Knobbies rob 10 hp
2. Knobbies destroy braking
3. Expensive

EVALUATION

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

The bolder, stripped down look of the CB1000R, with many of its muscular features bulging out, is quite a departure from previous versions.

BUGGING OUT

Honda CB1000R ditches insect-like styling in favor of package that shows off physique

> By **Russell Evans & Brant Wiwi**

The revolutionary Honda CB750 Four was introduced 50 years ago, in 1969 (page 31). It was considered the first Universal Japanese Motorcycle (UJM). A standard, naked, inline-four motorcycle template by which the next decade of Japanese imports would be defined. It continued as the CB750 Nighthawk all the way into 2003.

The CB900F became the big-bore replacement in the early '80s, before disappearing from the lineup for nearly two decades as displacement creep bumped the CB lineup to 1100cc.

The CB900F was reintroduced as the Hornet abroad, and to America as the 919, from 2002 through 2007. It was replaced in 2008 by the CB1000R, using a detuned 2007 CBR1000RR motor, which managed to stay in the lineup mostly unchanged ever since.

With a recent styling redesign and further reduction of plastics, the latest update to the CB1000R becomes more masculine and brutish. Aggressive updates include a new round LED headlight, enlarged rear tire and single-sided swingarm with rear mudguard.

With plenty of horsepower at the rear wheel, close-ratio gearing and a love for being leaned over, the CB1000R is a track monster and canyon carver, built for those who love the thrill of high-speed cornering.

It'll go straight, almost grudgingly, but there is considerable wind blast and a bit of a buzziness above 70 mph or 6,500 rpm.

RUSSELL EVANS

ENGINE

The same CBR-derived, liquid-cooled, 998cc inline four-cylinder engine now cranks out 117 horsepower at the rear wheel and has all the pull anyone but a racer might need. Acceleration is linear, but comes on noticeably stronger in the top half of rpm range.

Torque is manageable, maxing out at 63.29 pound-feet, coinciding with a spike in power between 7,200 and 8,000 rpm. At that point, torque tapers off slightly, while horsepower continues its climb, peaking at 9,900 rpm.

Honda increased lift on both intake and exhaust valves, updated the 36mm throttle bodies to 44mm and replaced the cast pistons with new high-compression forged units. Other updates include a 10-pound-lighter, 4-into-2-into-1 exhaust configuration. A link pipe improves torque at midrange and is combined with updated airbox, filter and ducting, for better flow.

Power delivery is adjustable through handlebar switchgear, offering Sport, Standard, Rain and User. User mode is fully customizable for power delivery, traction control, ABS and wheelie control, allowing fine-tuning of each input for intermediate to expert riders. In Rain mode the bike produces full power, only restricting delivery to give the tires a better chance to hook up.

Fuel economy wasn't exemplary, averaging 35 miles per gallon. Our expectations might have been inflated because the massive exhaust swallowed so much engine noise, belying and disguising the ample power.

RUSSELL EVANS

TRANSMISSION

The close-ratio gearbox is short and shifting comes quickly. The wet multiplate clutch required a high level of concentration and patience at times, with six gears in such a close ratio.

Unfortunately, we were slowed by frequent false neutrals, both on the way up and back down. Once you've reached sixth, there's nothing left to do but twist, the power comes in gobs.

SUSPENSION AND HANDLING

The excellent Showa Separate Function, Big Piston fork is fully adjustable up front and the Showa monoshock in the rear offers both preload and rebound adjustment. The CB had just the right amount of cushion around town, and was more than up to the challenge in the canyons, when we asked a bit more of it. The bike felt extremely light, with a low center of gravity.

Geometry changes include a 24.7-degree rake that is 0.3-degree sharper, and a 0.1-inch decrease in trail. The older model's aluminum frame has been replaced by steel, shaving off 5 pounds, while supposedly enhancing steering—we couldn't tell.

Though the CB proved to be incredibly nimble, it felt a little short on trail, and though the bike likes being on the side of the tire, things got a little twitchy in the steering head when approaching maximum lean angle, with a hint of oversteer.

Not quite a sportbike, but more turning capability than a café racer. Thankfully all the updates reduced the bike's overall weight by 17 pounds.

BRAKES AND WHEELS

Dual radial mount four-piston Tokico calipers integrate with a Nissin master cylinder. Unfortunately, this setup fades under frequent and intense braking. However, with dual 310mm floating rotors up front and a 256mm single in the rear, it should work well when ridden respectfully. Two-channel ABS was overzealous.

While both ends run on 17-inch rims, the front wheel setup hasn't changed. The rear tire increased from 180 width to a beefier 190 spread, mounted on 6-inch-wide rim, giving the CB a more muscular stance.

ERGONOMICS

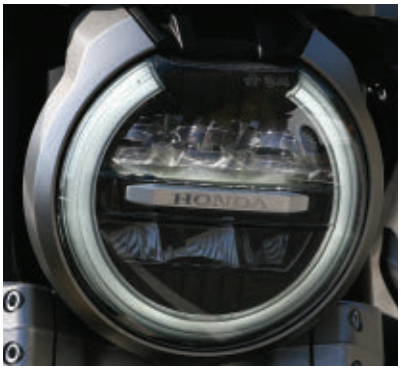
Rider geometry was close to neutral and very comfortable. The seat is wide and soft. Not the best combination for those who come off the seat in corners, but nice for general riding.

Bar height is good, and the footpegs create a rider's triangle suitable for long periods in the saddle. Cutaways in the fuel tank allow knees to tuck in nicely. The bike is also narrower, making it easier to drop feet to the ground, despite a tallish seat.

INSTRUMENTS AND CONTROLS

The user interface within Honda's 6-inch TFT display was clean. It was easy to use, adjust and understand its complexities, without needing to read the owner's manual.

The left-hand pod positioning of the horn button, between turn and light switches wasn't easy to find with the thumb. We can probably chalk it up to not being familiar with the setup, but we felt the horn should be easier to activate in an emergency.



ATTENTION TO DETAIL

Single-sided swingarms are always cool, so is the massive rear mudguard attached it, eliminating a rear fender.

There's also a horseshoe-shaped "shaving mirror" light ring around the headlight, which appears to be bling. We found overall lighting to be good, but not great. These new features are made more conspicuous by the de-styling done elsewhere.

Once stopped, kicking down the side stand with a boot took practice, as it is blocked by the footpeg.

VALUE

Competitively priced at $12,999, the CB1000R is not for every occasion, but does click several boxes on the want list. There's enough excitement here to forget about the bagger or ADV bike, and opt for a backpack instead.

The CB will likely attract riders that want a lot of power and are excited by the design changes. There is enough style to turn heads and keep pace with other similar naked choices.

The Yamaha MT-10 is priced identically; the Ducati Monster 821 about $1,000 less; the BMW S 1000 R $1,000 higher. Good value all, so brand loyalty could very well rule the day. MCN

TESTERS LOG

I loved the sheer masculinity of this bike, which looks badass and has the power to back it up. There are other bikes in the class with a louder exhaust note, but we expect a little more refinement from Honda.

This one, it's more like caged fury. The close ratio gearbox underscores the urgency with which the motorcycle performs. It's got immense power, but there's also a light quickness, a flickability and a need to be leaned over.

Get into tight twisties and the bars roll effortless back and forth with the lean. It's impossible to not think about how the CB would be on the track, with no oncoming or cross traffic—just mano a mano.

It does buzz a little on the freeway, but I think that's just a straight-line protest.

— Russell Evans

At first glance, this bike is sassy. Single-sided swingarm, fat rear tire and a great stance inspired great expectations.

Featuring an attractive LCD with easily adjustable riding modes and good ergos. It's extremely light and nimble, with a low center of gravity and great suspension, but still gets twitchy at full lean.

Unfortunately, overengineered electronics resulted in less-than-ideal output. Flaccid lever feel from the brake package was worsened by constant ABS interference. Frequent false neutrals and buzzy at high rpm, plus plain-Jane exhaust notes and overall dull styling further disappoint.

Like mom driving you home, too safe and kind of lame.

—Brant Wiwi

RUSSELL EVANS

2018 HONDA CB1000R

CycleStats™

QUICK HITS

MSRP: $12,999
Category: Standard
Displacement: 998cc
Engine Type: liquid-cooled, inline 4-cylinder
Warranty: Limited, 1 year or 7,500 mi.
GVWR: 853 lbs.
Wet Weight: 464 lbs.
Carry Capacity: 389 lbs.
Seat Height: 32.7 in.
Colors: Black

SPECIFICATIONS

Valvetrain: DOHC, 4 valves per cyl.
Bore & Stroke: 75 x 56.5mm
Comp. Ratio: 11.6 : 1
Transmission: Close-ratio 6-speed
Final Drive: Chain
Fueling: PGM-FI fuel injection
Tank Capacity: 4.3 gallons
Fuel Grade: 91 octane
Exhaust: 4-into-2-into-1
Ground Clearance: 6.0 in.
Wheelbase: 57.75"
Rake & Trail: 24.7° / 3.8"
Tires: Bridgestone Battlax, 120/70-17, front; 190/55-17 rear.
Brakes: Dual radial-mounted four-piston calipers with full-floating 310mm discs; Single-caliper 256mm disc, rear. ABS.
Suspension: 43mm Showa SFF-BP fork with spring preload, rebound and compression damping adjustability; 4.3 inches travel, front; Single Showa shock with spring preload and rebound damping adjustability; 5.2 inches travel, rear.

ELECTRICS

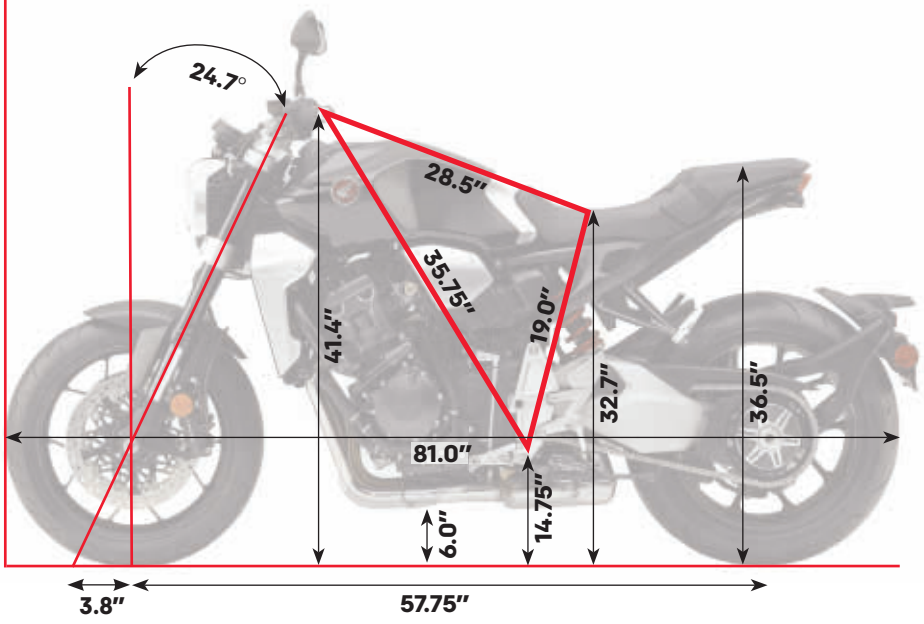
Battery: 12V 8.6 Ah (10 HR)
Ignition: Digital w/electronic advance
Instruments: Speedo, tach, coolant temp., trip, clock, fuel,
Indicators: Gear selection, ABS, torque control, ride mode, engine output, engine braking,

MAINTENANCE

($130/hr.)	Miles	Labor	Parts	Total
Routine	4,000	$188	$47.50	$235.50
Valves	24,000	$654	$230	$884.00

Estimates courtesy, Tom Blackwell, MotoUnited

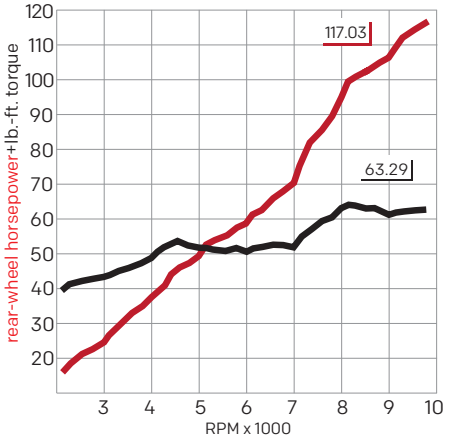
GEOMETRY



PERFORMANCE

Fuel Economy (MPG)
High: 39; **Low:** 31; **Average:** 35
Estimated Range: 150 mi.
60-0 mph: 132 feet
0-60 mph: 3.25 sec.
1/4 mile: 11.36 sec. @ 126.5 mph
Power to Weight: 1:3.96
Speed @ 65 mph: 63 mph
RPM @ 65 mph: 4,850
RPM @ limit: 9,900

HORSEPOWER & TORQUE



SMILES
1. Smooth power
2. Suspension
3. Ride setup options

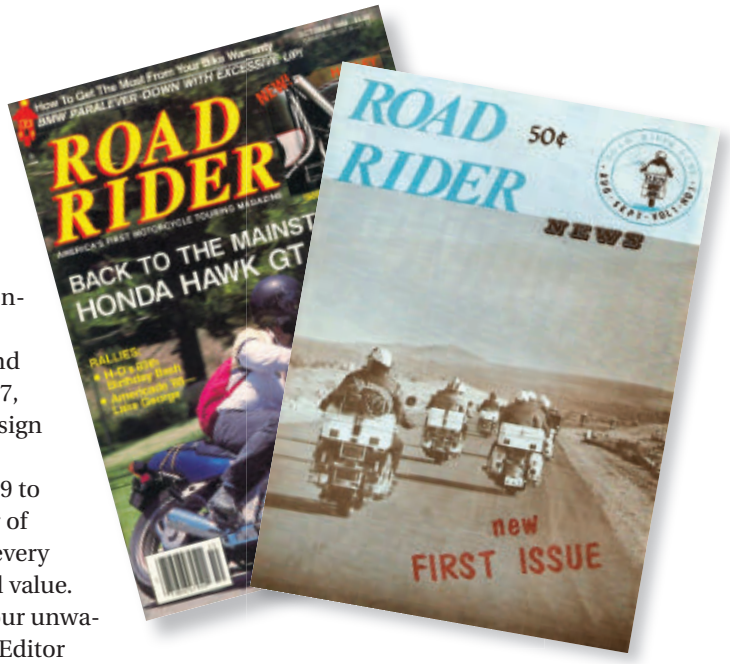
FROWNS
1. Inconsistent braking
2. False neutrals
3. Buzzy at speed

EVALUATION

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

MOTORCYCLE CONSUMER NEWS 50 YEARS

For half a century, MCN has provided thought-provoking and thorough coverage of motorcycling, for serious motorcyclists.



In August 1969, the first bimonthly issue of Road Rider News was published. It was a color magazine with advertising, focused on touring and travel by motorcycle.

In January 1991 (28 years ago), Road Rider transitioned to 100-percent subscriber supported, black and white and advertisement-free. It was retitled Road Rider's Motorcycle Consumer News until January 1993, when Motorcycle Consumer News officially became the title. With a focus on exposing trends and concerns within in the industry, nobody thought it would survive.

For 17 years, Motorcycle Consumer News continued in black and white, until color was reintroduced in March 2008. In January 2017, Motorcycle Consumer News was updated with a new logo and design for the first time in 26 years. Still no ads.

Road Rider and MCN have survived for half a century, from 1969 to 2019. This issue represents Volume 50, No. 1. What's more, all four of MCN's editors and many of its long-time contributors are still in every issue. The following pages are their reflections on that history and value.

Most of these past 50 years wouldn't have happened without your unwavering loyalty as MCN subscribers and influencers. Thank you. —Editor

Fred Rau
Editor 1991-1995,
Contributor 1989-present

Early Touring

> ***Bob ... offered me a full-time job. It meant giving up my job security ... selling our house and moving to the West Coast, all for a pay cut of about 40 percent. Who could resist?***

In the beginning, there was Road Rider magazine, birthed by Roger Hull in 1969 and nurtured by him for the next dozen years. It was a unique publication within the motorcycling community, as it didn't shy away from issues having to do with safety or politics.

Unlike virtually every other motorcycling publication of the day, the pages were filled with information about touring and products related thereto, rather than myriad race reports. As such, Road Rider quickly gained a somewhat cult-like status, with a small, but fiercely loyal subscriber base. One of those subscribers was me.

In October 1971, I was 22 years old, had been married for eight months, had been a motorcycle rider for two months, and discovered my first issue of Road Rider. I still have that October/November 1971 issue, which I stole from a dealership's lobby, and from which I ripped out and mailed in a subscription card.

Within its pages I would discover Roger's "Faulty Muffler" column, Bob and Patti Carpenter's "Two Up," and a ton of useful information about my newfound love: motorcycling. Over the course of the next 18 years, I would remain a faithful "RReader," as I progressed through a series of ever-larger bikes and took longer and longer rides, mostly due to the influence of Roger, Bob and Patti, who became my idols and my inspiration.

By 1982, I had worked my way up to a Honda Gold Wing, and much to my dismay, Roger Hull sold Road Rider to a publishing company. Luckily, my pain was short-lived, as Bob Carpenter took over the helm as editor with Patti at his side, and all remained right with the world. About the same time, my wife and I became members of the Gold Wing Road Riders Association (GWRRA) and I was writing occasional articles for their national magazine, Wing World.

By 1985, I was offered a position as editor of Wing World, which I jumped at. By 1986, my wife and I had a monthly editorial column in Wing World titled "Wingin' It." To say that we had patterned ourselves around Bob and Patti would be a gross understatement. Our riding style, my writing style, the editorial style of our magazine and virtually our entire lifestyle was a direct rip-off of our heroes, Bob and Patti Carpenter, as depicted in the pages of Road Rider.

In 1989, while still working as editor of Wing World, I was contacted by Bob Carpenter, who wanted to meet with me at my home in Phoenix. At that meeting, he offered me a part-time job editing articles for Road Rider from my home, which I graciously accepted. For the next year, he would mail me rough copies of magazine articles which I would edit or rewrite as needed, and mail back to him for publication.

After some time, Bob announced that I had been auditioning for the position of assistant editor at Road Rider, and offered me a full-time job. It meant giving up my job security with the local power company, selling our house and moving to the West Coast, all for a pay cut of about 40 percent. Who could resist? I'm thankful I have an understanding wife.

I thought all was settled at that point, and really couldn't get much better. I had a dream job at my favorite magazine, working for my idol. I woke up early each morning, hardly able to contain myself as I rushed off to work another day, riding and writing about motorcycles. Life was good.

In 1991, Bob hit me with another bombshell: Road Rider was to be phased out, and replaced with an all-new publication in black-and-white, with no advertising! On the surface, it sounded insane.

I was given no choice if I wanted to stay, and continued working as the managing editor of Road Rider's Motorcycle Consumer News. Road Rider remained in the title for two more years, to provide continuity. Then, as we dropped the Road Rider appellation in 1993, Bob suddenly announced his retirement and confessed that his plan all along had been to hand the magazine over to me.

I was stunned. In the course of less than three years I had gone from just another reader and fan of Roger Hull's creation, to stepping into his shoes as its editor-in-chief.

The next few years were some of the most interesting of my life, as David Hough, Dave Searle, Lee Parks, Flash Gordon, Glynn Kerr and many others joined the ranks. Most are still a part of MCN to this day. We broke a lot of new ground, and proved all the so-called "experts" totally wrong about what could and could not be done in a motorcycle magazine. MCN remains ad-free to this day, 28 years later!

After 30 years of working for and 48 years of reading MCN, I am grateful that I could be a part of it all. MCN

Dave Searle
Editor 2000-2015
Contributor 1988-present

Getting Technical

In 1988, I sent an earnest resume to Bob Carpenter at Road Rider magazine, in response to a job posting for a managing editor. After hearing nothing for several weeks, I followed up with a postcard, with a short list of hopeful suggestions on the back, each with a box that he could check and simply return to inform me of my progress.

One said, "we haven't decided yet, keep waiting." Another was, "the dog ate your resume, glad to hear from you again." To make sure my postcard wouldn't be ignored, the front side featured a beautiful girl in a red bikini.

Little did I know that Patti Carpenter, Bob's wife, a pioneering feminist and the first female motojournalist, was the one who opened the office mail. My attempt at cleverness had undoubtedly been offensive to her, and the continued silence remained deafening. Undeterred, I located their office in Irvine, California, and asked to see Bob.

The receptionist asked if he was expecting me. I said no, but Bob was gracious and invited me up anyway. He had remembered my resume and liked the stories I'd published previously. Although he didn't think my experience justified the job, we chatted a while and I wrangled my first assignment.

Determined not to let any chance to work in motorcycle journalism slip through my fingers (especially at a magazine located so close to my home) I did massive research on the suggested subject: the first use of oxygenated fuels. Bob liked the piece, and after it printed I received a letter from a petroleum engineer who said I had given the best explanation he'd ever read in popular press about the chemistry involved.

After starting with technical articles, I began doing road tests and helping with photography, and later began answering the Downtime questions each month. This led to my first overseas assignment—covering BMW's introduction of ABS in Berlin, where I met many of my motorcycle magazine heroes, including Nick Ienatsch and Kevin Cameron. Kevin and I sat together on the flight over and I questioned him endlessly. I was so happy, I forgot that you weren't supposed to be friendly with rival editors. As a result of being helpful, Nick asked me to write tech articles for Motorcyclist as well.

About a year later, the arc of my journalism career took a

Open Road

Starting Out

It's been 60 days and 40 nights since I was named Editor of MCN. The week before it became official, with the unanimous endorsements of Lee, Fred and Patti, I felt certain it would happen and was overcome with a certain euphoria at the prospect. But, as soon as it was official, a sense of great responsibility was my overwhelming emotion; responsibility to all of you who take such great pleasure in the magazine each month. I've had one previous experience being responsible to a group, as a board member of a non-profit corporation, and I found that, for the first time, I had to transcend my own personal boundaries for the good of the group. My efforts were very successful and the personal growth that came from it changed me permanently.

The transition from freelance Technical Editor to Editor has been quite a change, too. I immediately realized that I was no longer in competition with our other contributors for page space. In fact, quite the opposite, I would now have to give away assignments that I would loved to have had for myself. One of Lee's best qualities was his ability to find that place of contribution to others and excel to that spirit to fruition in the pages of MCN. He and I spent 50-60 hours a week together these last few years, and our walks to neighborhood restaurants were always occasions for free-form conversation. I miss those walks. Despite our age difference, we had much in common. When I first visited his earlier residence in Costa Mesa, I was surprised to learn it was just over the fence from the backyard of the place where I had lived some 20 years before. My favorite philosopher in those days was Alan Watts, and I would read and meditate on his books for hours almost every day when I lived there. Lee could quote Watts at length, and if we'd finish tuning in the desert north of L.A. soon enough, a trip to Santa Monica's Bodi Tree bookstore was sure to add to our philosophy collections. I could never have imagined that Lee would leave MCN and I never hoped to be the Editor, simply to be steadily employed and on the payroll one day, with benefits and a 401K. Luckily, a lifetime of working for myself, earning enough from one month to the next to keep doing what I cared about, enabled me to take a small role at MCN, earning a few hundred a month on the side, and make myself a indispensible part of the team. "Focus," which I always heard was the key to success, and what was for so long personally impossible, simply required that I put my heart and soul into something that I really cared about—this magazine. And it paid off. I recommend it to anyone who find his other job a drag. Lee warned me when he left that the difference between his position as Editor and mine was that I wouldn't have a Dave Searle to help me. I have a feeling that there is another person like me out there.

If you love motorcycles, are pleasant to be with, really know your technical stuff, have the ability to learn, to teach and explain complicated things in simple language, are blessed with an understanding spouse, can shoot good photos, know Quark X-Press and can live with the financial uncertainty of a freelancer, send me a one-page sample and a resumé, and we'll see where it goes.

Apart from future talents, I am incredibly grateful that all the talented writers who've appeared in these pages before are eager to continue with me. David Hough ("Theff") says he's got at least a year and a half more energy that he will devote to Proficient Motorcycling, and is even attempting to find a protegé for your benefit. Mark Barnes, whose first Mental Monocycling hobbled so long ago, has become a continuing source of insight and wonderful stories each month, and I feel like I'm his biggest fan. Also, LT Snyder, who has been so prolific of late and who has provided so many interesting new perspectives to our magazine, promises to keep it up, except for his occasional month-long commitments to our national defense as a tank commander in the National Guard.

D.C. Wilson is also committed to more work, as are Ray Englehardt, Eric Putter, Jay Koehlenz, Steve Natt and the lovely Maury Sorensen. Mark Thompson, who we've missed, is also back on track, as is our ergonomics guru, Paul Kuhn.

New names and faces are coming on board as regular contributors as well. This month, we are pleased to introduce a new monthly series on motorcycle design from Glynn Kerr, one of the world's leading motorcycle designers. And we have a second piece from Tony Foale, one of the great engineering talents in the motorcycle business, this time on a unique trike from Spain.

Another name you will see in the masthead is Kevin Duke, who takes Lee's place as official performance tester for MCN. Kevin writes substantial portions of John Ulrich's *Roadracing World* every month and has a position much like I did at MCN. By gentleman's agreement, we will not compete with John for his writing, but you should know that he's equally as talented as Lee was at testing, and is about 30 lbs. lighter, so if anything, his numbers will likely be better.

Something's missing, too. Our Alternative Propulsion page, which drew all sorts of negative mail, was deleted last month in my first official change of content at MCN. The review of the BMW sport-utility vehicle was the last straw, I suppose.

In the future, expect to hear from political activists in the Blue Ribbon Coalition on land-rights issues as they affect us, and from NCOM (the National Coalition of Motorcyclists) and the MRF (Motorcyclists Rights Foundation) on the politics of insurance companies, traffic planners and European government policies that can affect our rights here, as well. Motorcycling is fun, but we don't dare have our heads in the sand when we are such an easy minority target.

Also, we have gone to a lot of thought to produce the Reader's Survey included in this issue. I need to know what you want MCN to be. If we truly serve your needs, we know you'll continue to subscribe. We want to be even better than you say we are today.

Lastly, I'd like to thank Fred Rau and Patti Carpenter for their gracious support during this transition. I know Fred is excited about the future; I swear, he looked 15 years younger when he was the first to tell me that I was made the Editor. And Patti Carpenter, who is the very soul of this enterprise and who goes back to its very roots in the Roger Hall days at *Road Rider*, watches out for me like my own mom. Thanks, both of you. And thank You for the opportunity to be the point man on your favorite motorcycle magazine. I'm honored.

Dave Searle
—*Dave Searle*
Editor

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detour into teaching and my class load became too much for extracurricular activities. However, when all the school's vocational programs were later discontinued (what were they thinking?), I began looking for other opportunities.

In the interim, Road Rider had changed its name to Motorcycle Consumer News and gone from glossy color to a black and white newsprint format. It was now produced digitally, rather than by the tedious old paste-up method. But most significantly, it no longer took advertising. The motorcycle industry was in the doldrums and ad sales barely paid the salesman. Road Rider changed to survive.

Fred Rau was MCN's editor then. We'd met before and he knew my work, so he gave me assignments. Over the years, I managed to parlay steady freelance jobs into a semi-employee situation. Averaging 30 hours per week, I made myself invaluable by doing roughly one-third of MCN's monthly work flow. In fact, I was in the office so much that I was finally given an unused cubicle to work in. When the editor-in-chief job opened in January 2000, I found myself in charge.

The difference between working for someone else and suddenly having the authority to do exactly as you pleased was huge. At first, I struggled to imagine how I should proceed. But a letter from a wise reader gave me the advice I needed. He said I should simply be myself and take MCN

in the direction of my own interests, and that the readership would respond. He was right, there really was no other way. We didn't play favorites, and tested everything from cruisers, to dual-sports, to sportbikes.

My all-time favorite motorcycle magazine had always been Cycle, under the guidance of Gordon Jennings, Cook Neilson and Phil Schilling. Although by that time, Cycle was long gone, killed by owner Hachette Filipacchi (in favor of Cycle World), it would continue to be my gold standard.

Although MCN's budget would never hold a candle to Cycle's, that publication's technical depth, special projects, thorough testing and exciting comparisons were things I did my best to emulate in the pages of MCN. Apparently, it worked. With almost no promotional budget and no newsstand sales for visibility, our subscribers continued to renew at levels no one had ever witnessed before.

And without advertising to taint the trust between the editors and readers, we were like a big family of rebels, working together on a project that had no precedent. No one in the industry imagined MCN would survive for long when it began, but it's still going, while other much bigger magazines have folded or cut back to just a few issues a year. Money wasn't the answer. MCN writers became proud to contribute to our shared enterprise, and it showed.

I worked like a maniac to accomplish everything that had to get done each month: performance testing, dyno testing, action photography, layouts and more, plus fact-checking hundreds of details that had to be right. I personally wrote roughly 20 percent of each issue, and fifty- and sixty-hour weeks were not uncommon.

Although visitors imagined our huge building and its 200-car parking lot were just for MCN staffers, there were only ever two full-timers, me and the managing editor. Our budgets never increased, because our publishing house (Fancy Publications, renamed BowTie) was invested heavily in the pet industry. The rise of large chain stores like PetSmart and Petco decimated the ranks of mom and pop pet shops that previously purchased so much advertising, leaving us all to share smaller budgets year after year. I obliged, but never tried to let it show in the finished product.

When it came time to hand over the reins to a new editor, Dave Hilgendorf and I had only briefly worked together, but I knew he appreciated what MCN stood for, and had good ideas for its future.

Things have worked out well in my 30 years with MCN, it really was the job of a lifetime! I look forward to its continued existence for another 50 years.

Thank you all for your continued support. MCN

David Hough
Proficient Motorcyclist
Contributor 1980-2017

Safer Motorcyclists

MCN readers may recall that I retired from riding and writing in April 2017, at age 80. I'm back to reminisce about my long and colorful history with MCN.

I bought my first motorcycle in 1965, a Suzuki 150 twin, which I used for commuting to work. The 150 was replaced a year later by a Yamaha 305 and in 1970 I bought a "big" Honda CB 450.

A popular motorcycle magazine ran a feature on the Pikes Peak Motorcycle Tour in Colorado, which motivated me to pack up my bike and make the 1,000-mile trek to Denver. In those days, few motorcycles were marketed specifically for travel. For a "touring" bike, you bought the bare bike of your choice, and added accessories such as a windshield and luggage rack.

Harley-Davidson had accessories for their big machines, but I was a recent convert to motorcycling and not wealthy enough to buy a "Hog." I was aware of expensive BMW machines, to which owners might also attach exotic Wixom fairings and quick-detach Craven panniers—color matched and pinstriped, of course.

In the 1960s and 1970s, most bikes came from Japan, stimulated by sales campaigns such as, "You meet the nicest people." For American riders, a midsized Honda or Suzuki might be equipped with a cargo rack from the JC Whitney catalog, upon which a milk crate could be strapped. Perhaps military surplus ammo boxes and fabric packs became makeshift saddlebags.

For my trip to Colorado, I had modified the CB450 with a home-built handlebar fairing on the front and a wraparound trunk on the back. The stock saddle looked great on the showroom floor, but turned out to be a genuine torture device on the road. I had yet to learn that stylish stuff wasn't necessarily practical, and practical stuff was rarely stylish.

I felt alone on that ride to Denver. I was an outsider, wandering the hotel parking lot, peering over shoulders of various groups, trying to figure out what a "touring" motorcyclist should be doing. I bumped into a small group of motorcyclists who appeared to be very experienced with motorcycle travel. These gurus introduced themselves as Roger Hull and Bob Carpenter, and introduced me to Road Rider magazine.

Roger had created Road Rider to focus on motorcycle travel, aka touring, which had yet to be discovered by mainstream motorcycle magazines. The American Motorcyclist Association

didn't even have a division specifically for road riders, a sore spot with Roger, who traveled everywhere on his Harley-Davidson. He proudly explained that he didn't own a car.

The Pikes Peak Tour was a game-changer. Motoring around western Colorado for three days, climbing Trail Ridge Road and Pikes Peak, visiting Cripple Creek, chowing down at a cowboy diner, and taking in the melodrama at Manitou Springs with enthusiastic touring riders infected me with the travel-by-motorcycle disease. That trip to stimulated a motorcycle-touring lifestyle that governed my choices up to age 80.

Within a year I moved up to a 750cc Moto Guzzi Ambassador, which was gradually equipped with fiberglass saddlebags, dual "tractor" seats, and a huge frame-mounted "English" fairing, stuffed with a CB and tape deck. The running gear would get toughened up with a big bore cylinder kit, an Eldorado crank and five-speed transmission. My wife and I made many trips on the Guzzi, including Wisconsin, Arizona and British Columbia.

In 1978 I purchased my first BMW "airhead," which I equipped with a big "barn door" frame-mounted Luftmeister fairing, Krauser bags and Lester cast aluminum wheels. Friends convinced me to join the BMW Motorcycle Owners of America (BMWMOA) and participate in state and international BMW rallies. Over the years, I managed to travel much of the USA, Western Canada, Great Britain, Man, Ireland, Europe, Southern Africa, Brazil, and New Zealand on various BMW machines.

Along the way, I realized that my motorcycling heroes—Danny Liska, Ken Craven, Ed Culbertson, Ron Ayres, Keith Patchett, Ramey "Coach" Stroud, Voni Glaves, Phil Funnell, Bob Higdon, Dr. Gregory Frazier—had somehow mellowed into fellow touring riders, friends who shared my passion for motorcycle travel.

In the late 1970s, I generated some riding skills columns for the Boeing Employees' Motorcycle Club in Seattle, and sent some of those to Road Rider. That led to many years of monthly Proficient Motorcycling and Street Strategies columns. In 1991, Editor Fred Rau dragged me back to write some more, until I finally retired and turned the soap box over to Ken Condon.

Back then, I had a strong belief that information and training were important, but I couldn't find much that supported that belief scientifically. If we had been able to articulate our philosophy about motorcycling, it might have been: "Motorcycles are understandably dangerous, and there isn't a lot anyone can do to make the sport less dangerous, but it seems to be a lot more satisfying for those who become smarter and more skillful."

When Dave Searle asked me to return to the pages of MCN again in 2015, I was finally able to discuss topics about which I had been keeping quiet. The unnerving truth was that motorcycling is way more dangerous than we had realized. More damning, the industry was complicit in increasing fatality numbers.

I stated in the Proficient Motorcycling column that motorcycling was 27 times more dangerous than driving a car. Apparently I was optimistic. According to the latest data, motorcycling is 38 times more dangerous. I realized that it was bad news that

International traveler David Hough investigated and exposed the true dangers of motorcycling, much of it on the pages of MCN.

the industry would prefer to keep quiet. Only MCN could and did publish the truth.

That's because Motorcycle Consumer News is in the unique position of being able to provide the facts, without being "gagged" by advertisers. MCN is the only commercial motorcycle magazine supported entirely by readers. When an advertiser is paying the bills, only a very reckless editor dares to publish anything those advertisers might find offensive. Only when the readers are paying the bills can an editor be free to publish the facts.

The roots of that philosophy go back to the time when Roger Hull wanted to do a report on the latest Moto Guzzi model. When asked for a demonstrator machine to test, the importer wanted assurance that the report would be favorable. Roger explained that the report would be truthful. The importer declined to provide a test bike. When Roger finally tired of months of requests to and denials from the Moto Guzzi importer, he dug into his savings and bought a machine from a dealer at retail. When the report was published, exposing a few commonly-known warts familiar to Moto Guzzi owners, the importer canceled all future ads in Road Rider.

That snub eventually led to the introduction of MCN as a commercial magazine supported entirely by subscribers. With no ads, there is much less pressure by industry to limit what is published. And as a journalist I can affirm that it's tremendously satisfying to be able to report truthfully about issues that no other magazine dares mention. MCN

Glynn Kerr
Design Consultant
Contributor 2000-present

50 Years of Design

Decades, as one scribe noted about centuries, don't always start or end on cue. The hippie movement, very much a product of the '60s, peaked in the early '70s, with the ending of the U.S. national draft and the Vietnam War, which so many young people had protested.

Even the famous Woodstock music festival took place only a few months before the end of the '60s, its legacy lasting for many years after. Easy Rider, arguably the most influential biker movie ever, was released in the latter half of 1969. Looking over the past 50 years of motorcycle design and development, I would argue that the '70s actually started in the late 1960s.

The '60s established the classic British style as the definitive world motorcycle. In the U.S., Harley-Davidson, then without any serious rivals, battled on with the American cruiser. The Japanese were playing around with pressed steel frame parts, which the Germans had already given up on postwar.

For the most part, regular motorcycles had returned to the old formula of tubular frames and aesthetic simplicity. Gone were the protective fairings and fender skirts. Motorcycles were statements of masculinity; no longer simply cheap transportation for those whose dreams were really of the four-wheeled variety.

THE 1970S

When the Honda CB750 Four burst onto the scene in 1969, its styling followed classic British cues, which emphasized the horizontal line. Although I doubt anyone knew it at the time, the predominant styling lines are intrinsically dependent on the angle of the cylinder's cooling fins. On most British bikes up to that point, they had been horizontal (Scotts, Panthers and BSA Slopers were anomalies).

The CB750 however, started a trend toward leaning the cylinders forward, to lower the center of gravity and create more space behind for carburetors and increasingly large airboxes. But the styling lines remained predominantly horizontal.

Whether or not it was a conscious decision, the designers raised the lower line of the pillion seat and the upper pair of silencers in line with the cooling fins, which gave the whole design some cohesion. It also started a trend toward lightening the look of the rear, with upswept lines, which has been taken to extremes on modern sportbikes.

Although the CB750 arrived at the very end of the '60s, its effect was felt in the '70s, with all three of Honda's Japanese rivals quickly developing four-cylinder sport models in direct competition. Not only was the Honda the most significant motorcycle of the 1970s, it was probably the most trend-setting model of the last half-century in technical terms. It was so forward-thinking, it arrived ahead of its decade, although it wasn't so ahead of its time as to be oddball. It was exactly what the market had been waiting for, and Honda got it spot on.

The 1969 Honda CB750 Four was a game-changer. Cylinders were tilted forward, lowering center of gravity and increasing space.

Paging through a 1971 international motorcycle catalog, what stands out is that the models are almost without exception naked bikes. There were a couple of Harleys depicted, with optional large clear plastic touring windshields. But no sign of the "batwing" half-fairing, which was introduced in 1969 as both optional and removable. There were a couple of racy-looking Dunstall specials, one Norton-based and the other a converted Honda 750 Four, but these could hardly be listed as production models. Even the Rickmans were all shown topless.

THE RISE OF FAIRINGS

The few production fairings that had come and gone in prior decades (Ariel Leader, Vincent Black Knight, etc.) were designed entirely for weather protection, with little concern for appearance or aerodynamics. The banning of "dustbin" fairings from competition events by the Fédération Internationale de Motocyclisme (FIM) in 1958 had dissuaded any road-going sporting variants for many years, due to the lack of connection to racing.

Aftermarket specialists, such as Avon in the UK, continued to produce functional universal full fairings for mostly British bikes. Though used by the police and public alike, the fact that they were almost exclusively painted white did little to help integrate the look. In the U.S., Craig Vetter applied style and color to what was essentially the same concept in the late 1960s. Vetter realized that fairings had to be effective and aerodynamically efficient, but, unlike most of the after-market models available, they also had to look good.

By the mid-1970s, Vetter's universal Windjammer fairing was so popular, Japanese manufacturers essentially made them a requirement for larger models in the U.S. OEMs sent swatches of their upcoming colors, to ensure a Vetter fairing would be available when the latest models hit showrooms. By 1978, production of the Windjammer SS fairing reached 100,000 units and Vetter had 500 employees. Considerable size, for a motorcycle fairing manufacturer.

Being a smart businessman, Vetter realized that manufacturers would soon offer their own faired models, making his product obsolete. Vetter sold his business in late 1978 and his successor filed for bankruptcy less than five years later.

The 1980 copy of that same international catalog still shows that most models available were naked bikes, but that wouldn't be for long.

The Vetter Windjammer fairing achieved such popularity in the 1970s, they became standard on many large Japanese models.

EUROPEAN INVASION

Things were happening in Europe by the latter half of the decade. Italian bikes were starting to get seriously sporty, with Ducati, Laverda, Moto Guzzi and Moto Morini all introducing macho machinery that could outrun the Japanese multis, and simultaneously handle corners without ending up in a ditch.

In deference to their higher top speeds, small fairings started to appear as standard fittings. Unlike the earlier, purely functional fairings, these new ones somewhat resembled GP bikes. They were mostly either cockpit and handlebar, quarter-fairing type (Moto Guzzi Le Mans 850) that turned with the front wheel, or frame-mounted half-fairings (Ducati 750/900 SS).

Fully-faired models, such as the TT-inspired Ducati Mike Hailwood Replica, jumped the gun. These were very much part of the '80s. In fact, Norton had beaten the Italians to it several years earlier, with the Commando Racer and JPS, but production was extremely limited. They failed to start a trend within the British industry, although they contributed to the general international movement toward faired sport models, and ultimately, the race replica.

Much more influential was the BMW R90S, created by Hans Muth in 1973. Thanks to nothing more than a cockpit fairing and some interesting smoke-effect paintwork, this component totally transformed the otherwise homely R/7 series, while adding to, rather than compromising, its functionality. This was a BMW, so customers expected comfort, pillion room and the option to mount hard luggage, sporting pretensions or not.

Three years later, the R100RS took things a serious step further, with fully frame-mounted bodywork that was very much ahead of its time. As well as offering greatly improved weather protection, its futuristic and sporting looks (despite the same basic underpinnings that the R90S worked around), combined with comfort and functionality, helped establish the new breed of sport-touring motorcycles.

By the end of the decade, stylish half-fairings were widespread on higher-end European sportbikes. The Japanese manufacturers started to catch on, with Kawasaki introducing the Z1R, followed by Suzuki with the GS 1000 S. Even Harley-Davidson wanted part of the action and created the XLCR Cafe Racer, which seemed pretentious at the time, although it has since developed a loyal following.

Most of the fairings were thin plastic or fiberglass additions to existing models, with little concern given to the rider's view, which was often of exposed fiberglass matting. Spraying the inside of a Ducati 900 SS fairing flat black partially reduced the vulgarity, though it was only something noticed when parked. Once underway, other things demanded your full attention.

The BMW RS was somewhat more refined, with a secondary dashboard below the screen featuring additional dials. The more touring-orientated RT models added inner liners with knee pads, integral locking glove boxes and even car-like adjustable fresh air outlets. This level of luxury and refinement would be taken much further by the Japanese in the years to come.

CUSTOMIZATION

Counter to the ever-increasing performance of more sporting models, custom bikes offered a laid-back riding style and image. Their popularity was greatly influenced by the film "Easy Rider."

The "bobber" was a postwar phenomenon, mostly full-dress bikes stripped of all nonessentials, for lightness and a bad-boy look. The chopper style grew from that, adding extreme proportions and sometimes frivolous ornamentation that became a statement of personalization, and ultimately an art form.

The factory custom, despite being a contradiction in terms, cashed in on the craze for anyone who wanted an off-the-peg product, starting with the Willie G. Davidson designed 1971 Harley-Davidson Super Glide. Although early incarnations had a mixed reception due to the flared rear fender design, later,

Craig Vetter (left) discusses the virtues of his 1973 Triumph X75 Hurricane with the author's wife.

The 1971 Harley-Davidson 1200cc Super Glide was an off-the-line "factory custom," becoming one of the company's best sellers.

more conventional versions, became best-sellers.

By contrast, the Norton Hi-Rider, essentially a Commando complete with ape-hangers, pillion backrest and sissy bar, was a half-hearted and fortunately short-lived marketing exercise. By the end of the decade, the Japanese manufacturers had joined in with greater conviction. Honda with its "T' models, Suzuki with the "L," Kawasaki with the "LTD" and Yamaha, which referred to its offerings simply as "U.S. Custom." The "Virago" nomenclature would not appear until the 1980s, along with a renewed vigor in the factory custom market.

UNIFIED DESIGN

At the end of the decade, we saw a few glimpses of things that would come to define the 1980s. Bodywork, up to that point, was still essentially a tank, seat and side-panels, all existing independently of each other. Some models had sprouted rear covers that helped blend the seat and taillight, although with few front fairings to balance the visual weight, this could make the bikes look long and tail-heavy.

While Craig Vetter had dabbled with blending the tank and side panels on his Triumph X75 Hurricane in 1973, the desire to more fully integrate the bodywork was becoming apparent by the end of the decade. The Benelli/Moto Guzzi 254 Quattro made a brave attempt to join everything from the tank back to the tail fairing. There being more body color at the back than the front, it seemed to sag at the rear. The effect wasn't helped by the tank lines, which rose toward the front, like a custom bike.

This was unknown territory at the time. The designers had a rough idea where everything was heading, but the rules were still being formulated. In 10 years, we'd pretty much figured it out. The marvels of Honda's 1969 Four were replaced by the wonders of its 1978 Six, in the guise of the CBX, which seemed so wide you'd barely need a side stand. Benelli had already been there in 1972 with the 750 Sei, but when Honda did it, the concept went mainstream.

IMPROVED PERFORMANCE

Suzuki and Yamaha passed the buck, but Kawasaki took up the gauntlet with the Z1300, in 1979. With shaft drive and a curb weight of 692 pounds, the Z1300 was clearly designed more for long distance touring than as a stoplight racer. Yet, with 120 horsepower on tap, it could run with the best on power alone (causing French authorities to impose a 100hp limit, which was only recently dropped in 2016).

Suffice it to say, those early six-cylinders were red herrings, until the layout returned with the BMW K1600. Yet, the most successful of today's six-cylinder motorcycles had already made its debut in four-cylinder guise in 1974. By modern standards, Honda's GL1000 Gold Wing looks like a very unlikely success story—huge and cumbersome, with weedy spoke wheels and nary an inch of fairing in sight. Who could have guessed how that story would evolve?

In addition to going faster, stopping also greatly improved over the decade. The 1971 book shows only the Honda CB500 and 750 Fours, the H-D Electra Glide and the Ducati 750 with front disc brakes, and only single rotors at that.

All the rest, including top-of-the-line 750 BSAs, Nortons, Triumphs, BMW R75/5, Guzzi V7 Sport, Laverda 750SS, H-D 1200 Super Glide, Suzuki GT750 and Yamaha XS 1 were still running drum brakes. Even MV Agusta was still fitting drums to its race-bred 750 Four.

By the 1980 edition catalog, even some 50cc models had a single front disk, while the big boys had progressed to twin front stoppers, usually adding a single disk to the rear, as well.

Cornering was another matter, but we'll leave that solution for next month. MCN

When your daydreams look like this, it's worth figuring out how to get there.

MORE TIME TO RIDE

> By **Alisa Clickenger**

Too busy? Here are some practical ways to get in the saddle more often.

Whether you're an old pro or have a freshly earned motorcycle endorsement, sometimes it's hard to find time to ride. Whether the constraint is carving out time or psychological motivation, sometimes it takes a slight reframing to reinvigorate your ride.

SET GOALS

Don't let riding become another one of those things you aren't doing. Like any aspiration in life, setting a goal makes it much more likely to attain. If riding is a priority, write down the goal and tape it somewhere you'll see it all the time.

If riding isn't a good enough reward, add something extra for reaching your riding goal. Perhaps new gear or farkles for your bike. Putting a mileage goal between you and an object of desire creates a double win in that you'll be riding more to earn it.

SCHEDULE TIME

Time constraints are the most common reason people don't ride as much as they would like to. Balancing demands on our time seems to get harder every day. Apply the same time management techniques that boost efficiency at work and schedule some riding.

Riding can provide stress reduction and other health benefits, simply by being outdoors. By shifting your focus and providing a pleasurable outlet, you can return to your nonriding life renewed, reinvigorated and more efficient.

COMMUTE TO WORK

Think of it as a gateway activity to more riding. It may not be a relaxing ride

ALISA CLICKENGER

along a scenic byway, but riding to work gets you geared up and on your bike. It will remind you of those fun leisure rides and inspire more rides without work as a destination.

Since you are already geared up and mounted, it's also easier to take that longer, winding road home. The biggest bonus is that riding daily will improve your visual awareness skills, keeping them fresh.

GET TRAINING

It could be a plateau in your riding skills or a lack of confidence that keeps you from swinging a leg over your bike or fully enjoying a ride. The cure is more training. Do something that stretches your mind as well as your skill set.

That could be an off-road course, track day, racing curriculum, even an MSF course. Picking something opposite of your normal interests will shake things up, teach you new skills and inspire you to ride more.

PICK A DESTINATION

My first motorcycle road trip was 400 miles, a huge distance for me. At the end of the journey was my first motorcycle rally. It forced me to prep my bike and consider every detail of a "big" trip. Getting psyched up to ride is much easier when there's a destination.

Pick the most powerful motivator, an event or dreamy location that truly inspires you, and get stoked to ride there.

RENT A MOTORCYCLE

When paying for something, it's human nature to want maximum value. A rental program like Club EagleRider ($29 per month) lets you earn a free rental credit each month and gives you access to thousands of newer motorcycles from all the major brands, across North America. You also get a free rental credit on your birthday, which is an excellent excuse to go for a ride!

There are also local motorcycle rental agencies as well as online sharing economy options like riders-share.com and twistedroad.com.

ALISA CLICKENGER, CURVE UNIT

GET OFF SOCIAL MEDIA

There are tons of content online for motorcyclists. Forums are phenomenal sources of advice, for learning, and for connecting with a community to which you can relate. But it's easy to do more typing about motorcycling than riding. Set a timer on electronic interactions, stick to your schedule and go ride.

PHONE A FRIEND

People are social animals, and having someone with whom to ride makes motorcycling more enjoyable. Scheduling rides with a friend keeps you committed. You won't want to disappoint them by not showing up. You're much more likely to gear up and go if someone is waiting for you.

JOIN A CLUB

Belonging to a club is like having a riding buddy on steroids. Riding clubs are all about the lifestyle of riding motorcycles.

A good club has a healthy balance of social activities, planned rides and destinations to keep you interested in the sport. In a riding club, there are more motivated motorcyclists, encouraging you meet and ride.

FIND A MEETUP

Coffee clubs and bike nights function like riding clubs, with less organizational structure. People suggest ideas and plan rides together, often on forums or meetup.com, then gather at a specific place and time to ride.

You don't know who will show up, but that's no different from a riding club; it's a numbers game. There could be hundreds or thousands of people who see the invite.

The array of personalities and riders might be broader than a riding club, which are often brand or riding style focused. With greater numbers, there is greater opportunity to find a perfect long-term riding buddy.

WHEN YOU SPEND more time riding your motorcycle, you might even be inspired to make motorcycling a full-time gig. MCN

It's more fun to ride somewhere like this ...

... with people like this.

Rights of Spring

Lightweight rider solves suspension challenges

> By **Kevin O'Shaughnessy**

Samantha installed an Öhlins shock, which didn't fix harshness and bucking issues.

Recently, I received a request for assistance from Samantha, a 105-pound rider whose suspension was so harsh, she was forced to stand on the pegs over rough conditions (MCN 12/18).

Samantha needed the Ducati Diavel's standard riding position and acceleration for her job, to lead 1,000-mile ride events through the wondrous landscapes of Utah and Colorado. Power is critical for herding stray riders.

The Diavel is a hypercruiser, with an output of 162 horsepower at 516 pounds, wet. It's a unique combination of muscle bike power and heavy tourer handling. According to Samantha, the ride quality was severe enough that midcorner bumps would buck her off the seat and pegs, which is highly unusual for street conditions.

The ride quality was not just a matter of creature comfort, it had become detrimental to her business. For someone 5 feet, 2 inches tall, the selection of bikes that meet both power and low seat height requirements are limited. Samantha needed this specific bike and significant investment was already made.

After working with five suspension tuners at three premier suspension companies, and investing $5,000 in upgrade services, the suspension remained horrible. Samantha's complaints fell on deaf ears. Unfortunately, some people treat seasoned female riders as mysterious, mystical beings that are fragile and incapable of making lucid decisions.

Some thought she was unreasonable, most lacked the knowledge to fix it and opportunists saw the struggle as an easy sale. Infuriating. Her last Hail Mary before replacing the bike was to buy an Öhlins rear shock. It felt better, but still had issues with harshness and occasional bucking.

After corresponding with several contacts, she connected with Matt, a product manager at Öhlins USA (North Carolina). Matt worked with Samantha over the phone, through a series of measurements, setups and test rides, then revalved and sprung a new shock for her. The pinch: Samantha was in Moab, Utah. The closest qualified service center 470 miles away in Phoenix, Arizona.

Furthermore, shock replacement requires swingarm removal to route the remote preload adjuster, at a cost of $600 in labor. Matt went beyond the norm of aftermarket service and offered to have the shock installed on Öhlins bill. At Samantha's request, Matt took it a step further and agreed to have me do the work in place of his service center.

Samantha is 5-feet-2, 105 pounds, and rides a Ducati Diavel. Getting the suspension right has been problematic.

KEVIN O'SHAUGHNESSY, SAMANTHA BONSACK

I worked remotely with Samantha and Matt to gather information. At first,

I thought the spring and damping were too soft, but wouldn't know for sure until I had test data. When discussing the issues with Samantha, I took everything with a grain of salt and separated input into three bins: emotional, subjective and objective.

While many dismiss emotional data as illogical, it's real and it's debilitating. With the barriers of pain, fear and anger, our thinking becomes reactive and it's hard to find facts. So, I felt her pain and lived in her shoes for a moment.

What the rider feels is subjective and could be a byproduct of a condition they can't perceive. Our minds also influence these perceptions by feeling what we want or expect. Testing will help separate these influences.

While objective data are nonbiased, they are not necessarily factual. Again, testing is needed to identify reality. R&D starts off with an educated guess, then testing, testing and more testing, to separate fiction from fact. Failures are just as valuable as success.

All three bins are important. We are not machines. While physics limit what we can do, the human perspective limits what is considered pleasurable. I've worked with pro-level riders that were inundated by stress. Under pressure of sponsors or public view they lost confidence and started creating ghost problems.

In a few cases, I clicked their adjusters a few clicks out, then back to the original position, resulting in zero change. They assumed I applied Kevin's magic fairy dust. Because they thought it was better, they rode better and dropped lap times.

What Samantha and all customers want is a positive change or even the impression of a positive change. I want both to happen. Without a physical change it's just black magic. Without the perception of "better" there is no joy.

Samantha made the long drive from Moab and we began the testing process with sag and damping measurements. Everything was soft, and the spring preload was set low in the travel. I noticed the rear shock was bottoming when pushing down by hand. Without enough spring resistance, it could blow through the travel and hard-bottom. This is an extremely progressive event that could be the reason for bucking her out of the seat.

KEVIN O'SHAUGHNESSY

After much input and testing, the right combination was less compression, more rebound and more preload.

I reset the spring to an appropriate height and centered the damper adjustment for our initial test rides. Samantha rode her beast with precision and we worked toward a new baseline. After personally testing Samantha's "best" setting, I realized her description of the ride quality was not subjective, but factual.

The front felt great, but the rear was bad. The feedback I felt was the grating staccato that drains our bodies and minds over long rides. These tests moved several subjective items into the objective bin and brought to light some important facts.

Our data now suggested less compression, more rebound and a lighter spring with more preload. I reevaluated the setup Öhlins provided and called Matt. They nailed every need. Trying to be this precise over the phone means the rider and tuner both did a remarkable job at testing. I rarely find this caliber of either. Gold star to Samantha and Matt for excellent grades at the Academy O' Kevin.

After removing the shock, I realized it had a long enough preload hose to reach my spring compressor (with only 2mm to spare). So, instead of removing and replacing the swingarm I swapped the shock and used the original preload adjuster. I removed, cleaned, inspected and lubed every pivot and contact point that could cause a binding issue. All parts were in good condition and refreshed for final testing.

While the new shock was considerably better, we still found ourselves backing compression nearly full soft. Rebound was increased to reduce harsh reactive feedback from the spring. Sag ended up lower but close to recommended ranges. It's unusual to find a sportbike with these settings, but I do find them on cruisers occasionally.

After a test ride, Samantha gave me a big hug and said she almost cried, in a good way. I contacted Matt with our findings and Samantha left with further instructions for fine tuning. Once she arrived in Moab, she immediately hit the roads that gave her the most concern. The results were remarkable. While it still felt stiff, she was able sit in the seat with renewed confidence and comfort.

Her issues were a culmination of small things. At first, the sag was too low and compression too high, which we were able to fix. There are still several inherent problems that would require redesign of the stock chassis. The unsprung versus sprung weight is a major issue. Because Samantha is ultralight, and the rear wheel is very heavy, more bump force energizes the frame. This is amplified by the wide low-profile tire that dampens little, even with low tire pressures.

Furthermore, the linkage configuration showed higher static friction measurements, which also contributes to slight feedback. Add these together and you find more energy bypassing the damper and transmitted to the frame and rider. The range of comfort and control will be limited by a compromise of one setting for another, no matter what we do.

At 215 pounds, it didn't feel as comfortable as it should for me, but the engine was fantastic enough to compensate. For Samantha, it's still not perfect, but you'll find her and the Diavel leading the next event at nutuprally.com. MCN

GAVIN TRIPPE

BRITISH RACING PROMOTER HELPED ELEVATE MOTOCROSS FROM HOBBY TO MAJOR SPORT

Dutch motocross legend and five-time 500cc motocross champion Gerrit Wolsink, on the left, and Swedish four-time 250cc champion Torsten Hallman flank Gavin Trippe at the 2016 Carlsbad Reunion (above). Gavin Trippe at the Transatlantic Trophy (right). The caboose pictured below was Gavin's early-life home.

> By **Joe Michaud**

Gavin Trippe was born in Norfolk, England, in 1940 and was raised by a single mom during the early days of WWII. It proved to be a hard-scrabble life for young Gavin.

Trippe left home at 16 and began an engineering education program that split his time between classes and factory work. He was interested in motorcycling and started racing. He became good enough to be part of the three-man team that won the British Army Trials Championship.

A call to a UK weekly motorcycle newspaper got him a freelance gig reporting and shooting pieces for Motor Cycle News. In 1965, he was offered a staff position that led to his career in motojournalism.

A visit to the U.S. by fellow-staffer Bruce Cox eventually brought both men to California in 1968, where the pair decided to copy the British print format into an American publication they called Motor Cycle Weekly. The pair eventually formed Trippe-Cox Associates and became important race promoters in the U.S. and Europe.

In 1969, Trippe approached the American Motorcyclist Association (AMA), educating them about European style motocross and urging them to promote an international motocross event featuring the best of Europe and the U.S. This led to the first United States Motocross Grand Prix held in Carlsbad, California, in 1973. The event was a huge success, and coverage by ABC's "Wide World of Sports" boosted motocross in America from a hobby into the world-class sport it is today. It also made Carlsbad Raceway the U.S. epicenter of motorcycle racing for two decades.

In 1976, Trippe was credited with developing the new AMA Superbike Championship for highly-modified production motorcycles. In 1979, he would promote another new event called Superbikers, which pitted the best dirt, flat track, motocross and road race riders against one another. It was popular from 1979-1986 and evolved into present day Supermoto.

Gavin Trippe was inducted into the AMA Hall of Fame in 2005. He died in a car accident July 3, 2018. He will be remembered as an important journalist, innovator and promoter, who invented new genres of motorcycle racing and changed the shape of the sport forever. This interview was done with his son, Gavin Trippe II.

GAVIN TRIPPE COLLECTION

Q&A

WITH GAVIN TRIPPE II

GAVIN TRIPPE COLLECTION

Q: It must have been tough growing up in England during WWII?

A: Dad was raised by a single mom and never knew his dad, who left them early on. He actually grew up in an abandoned railroad caboose with no running water and he never had much as a kid. He was sent to boarding school and usually never got home until after 8 p.m.

Q: Gavin was an innovator for many motorcycle race events, including Superbikers?

A: Superbikers was one of the coolest things he did and was also one of the craziest things he did. It came about when Bob Iger from ABC wondered why the best guys from different race venues like Kenny Roberts, Roger DeCoster and Jay Springsteen didn't race against each other.

So, dad built the first track at Carlsbad Raceway in 1979 and it was a huge success. Riders loved it because a victory would allow them the bragging rights claim as the most versatile racer. Around 1985, new ABC management lost interest, but Superbikers continued longer in Europe and the series eventually morphed into the Supermotard and AMA Supermoto that we have today.

In 1973, he also created AMA Superbike Production racing that allowed OEM builders a venue in which to race highly-modified production machines. He wrote the rules that maximized the number of manufacturers available. That sold a lot of bikes.

Q: As a promoter, he was responsible for major changes in the way racing was done?

A: He brought in many major sponsors like Hang Ten, Champion Spark Plugs, Nissan and John Player, which provided more prize money and contingency cash for racers. This made racers into world-class athletes.

He also took on the Pro AMA Supermoto series back in 2008-2009, when the AMA decided to sell pro racing. He and I took it over when it was dying, and he got XTRM to provide financial backing.

Q: He had an assortment of careers, but not all of them were motorcycle related?

A: When times were tough, he sold cars, which he hated. He said it was a miserable business. He later sold car leasing software for years and became the leading salesman.

After he retired from that in 2005, he continued his individual projects, like Supermoto and the Classic Bike Auction at the Red Bull MotoGP in Monterey. He ultimately ended up working for Mecum Auctions as head of the West Coast division for rare motorcycles.

He was responsible for getting the bike side of Mecum up and running. With his long-term personal connections, he was able to find large bike collections, also many special cars.

Q: Did he stay in touch with all the people he impacted?

A: He never cared about birthdays, but this past year in March, when he turned 78, he decided to have a big party with John Gregory from JT Racing. He rented a restaurant and had Roger DeCoster, Troy Lee, all the people from Carlsbad. Everybody you can think of, all of his best friends over the years were there.

It was a great night. Part of me thinks he knew he was getting older and he knew he wasn't going to slow down. He had all of his friends in one spot just months before he died.

Q: How would you summarize your dad's career?

A: He was never driven by money, he never cared about it. Lots of people look at his life and think he must have been wealthy. It's just the opposite. He wasn't able to slow down later in life, despite some health issues.

He cared about doing new things, staying busy and helping people. That's ultimately what got him into trouble. He was a creative thinker who always went above and beyond what was necessary.

Even in the past year, he never slowed down. It may even have been a health problem that contributed to his fatal car crash. MCN

CYCLE
ANALYSIS

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

What Would We Do Without You?

AS IF THIS column weren't too self-referential already, I'll commemorate MCN's 50th anniversary by reflecting on what it's meant to me during 22 years as a contributor.

This is my 218th column, on a page originally occupied by racetrack guru Keith Code, then shared by several psychologically minded rider-writers, and exclusively home to my ramblings since 2000.

I've also contributed 150 product evaluations, 40-odd how-to projects and other miscellany. Not bad for a venture that started as a crazy notion in an attic office on a snowy afternoon, when I decided to play motojournalist.

Then-editor Parks had the, err, good taste to publish my unsolicited submission (thanks, Lee!), and eventually fed me product review assignments on top of increasingly regular gigs in Mental Motorcycling, as this column was once called. Subsequent editor Searle tolerated my expansion into more technical areas, despite my lack of formal training as a mechanic. I'm grateful for his watchful, and genuinely qualified eye.

Editor Hilgendorf has continued the tradition of generously making room for this odd duck in the enthusiast press; a clinical psychologist who rarely covers topics about which he could claim actual expertise. My heartfelt appreciation to both Daves!

Contributing to MCN has been much more than a way to earn extra bucks for bikes, gadgets and gear. It's been a place to ply my craft. Not as a psychologist, or even as a motorcyclist, but as a writer.

Although my day job involves writing, I have (since the outset of my career) desperately craved a creative outlet to counterbalance the analysis of thoughts, emotions, relationships and brain functions monopolizing my professional attention. While I care deeply about such things and the people who

come to me for help, the psychological "muscles" involved get fatigued during my workweek.

Imagine going to the gym every day and only doing squats. I wanted to talk about what turned me on, not just listen intently to others' problems.

MCN HAS LET me enjoy self-expression in ways vastly different from clinical practice. I love words. That's part of why I chose work rooted in conversation. After I'm exhausted with psychology, I need another venue for articulating ideas and experiences (something I can't seem to stop doing). What better topic than my favorite recreational pursuit?

There's little about motorcycling I don't find fascinating, energizing and compelling, but who'd listen to me go on about it? Writing for MCN let me not only detail my adventures on the road, trail and garage floor, but also commune with others who truly share my enthusiasm–you, dear reader!

I spent decades of my life as a motorcyclist alone. I had no friends who rode and no clue how to find some. I got neighborhood kids to ride my first bikes with me in nearby fields, but their parents never let them get their own machines. In college, no one else had time, money or curiosity for motorcycles, ditto grad school.

Aside from a few long-distance contacts made in recent years, I can't name a single fellow rider in my professional circles. Surely some exist, but I don't know them yet.

Several post-grad riding buddies were established friends whom I cajoled into brief explorations of life on two wheels, but they faded out because the passion was mine, not theirs. The few who've lasted I met by chance, from very different walks of life. I've encountered other riders over the years, but most just haven't clicked long-term.

MCN IS A couple of dozen contributors, scattered across the globe, appearing at different intervals. It is also a source of extraordinary depth, breadth and integrity in motorcycling media. Nothing else consistently delivers MCN's scope, honesty and substance. I know this because I constantly search for more great stuff to read, but mainly find eye candy and reprinted press releases elsewhere.

For me, MCN is best defined as a community of riders, seriously invested in quality bikes and equipment, along with carefully considered guidance on how to ride, wrench, explore and connect. We use our minds and value others who do so, too.

Beyond the flash of Bold New Graphics, whether on a fairing or magazine rack, MCN is a sanctuary for riders wanting to keep it real. I recognized this when I first sent an article to Lee Parks for consideration.

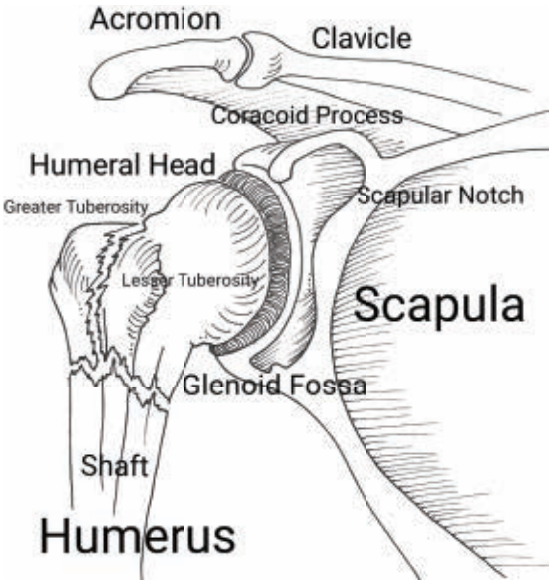
As much as I appreciate the editors' indulgence and fellow contributors' informative journalism, I'm most grateful for the readership, without whom none of the rest would be possible. As a reader, I'd be lost without this magazine. As a writer, I wouldn't even exist.

Thanks for reading all these years. MCN

Dr. Mark Barnes is a clinical psychologist, in private practice, author of "Why We Ride," excerpts from 20 years of MCN columns.

> By **Cary Tanner, M.D.**

Proximal Humerus



EXCEPT FOR CLAVICLE (collar bone) fractures, most fractures in the shoulder region experienced by motorcycle riders are proximal humerus fractures, at the upper end of the humerus.

Proximal, in anatomic terms, means closer to the torso; distal means farther away. The humerus bone spans the distance between the shoulder and the elbow. Proximally, the humerus forms the ball of the ball and socket joint of the shoulder and serves for attachment of the rotator cuff (MCN 1/18).

Proximal humerus fractures are divided into four types, which should not be confused with the four anatomic parts of the proximal humerus subject to fail in a fall from a motorcycle.

THE FOUR ANATOMIC PARTS ARE:

1. The humeral head (contains the ball)
2. The greater tuberosity (a site of rotator cuff attachment)
3. The lesser tuberosity (another site of rotator cuff attachment)
4. The surgical neck / humeral shaft

The four types of proximal humerus fractures, by increasing severity, are:
Type 1: A crack in the proximal humerus with minimal displacement.
Type 2: One of the four anatomic parts is separated from the remainder of the bone by greater than 1 centimeter or angulated 45 degrees from normal.
Type 3: Two of the four anatomic parts are separated from the remainder of the bone by greater than 1 centimeter or angulated 45 degrees from normal.
Type 4: All four anatomic parts are displaced greater than 1 centimeter or angulated 45 degrees from normal.

PROXIMAL HUMERUS FRACTURES tend to occur in persons belonging to two age groups. In older riders, it is entirely possible to sustain such an injury in a ground level fall, mostly due to senescent osteoporosis. Younger riders may experience the same fracture pattern, but it reflects a higher energy injury with greater soft tissue damage.

Many factors are taken into consideration when treating proximal humerus fractures, such as age of the patient, the type of riding the patient does, and fracture displacement. There is an overall trend in orthopedics to support nonsurgical management for most proximal humerus fractures. MCN

Dr. Cary Tanner is an orthopedic surgeon and clinical professor, in practice at Sierra Pacific Orthopedics in Fresno, Caliornia.

REHABILITATION

The proximal humerus is a busy place for muscle attachment and critical to good shoulder function. It serves as attachment of the rotator cuff, which is the critical force couple in the shoulder.

Just below the surgical neck, the major motor muscles attach to the upper humerus and are typically some of the deforming forces in the fracture pattern. These powerful muscles include the deltoid, pectoralis major and the latissimus dorsi.

A proximal humerus fracture requires a long and challenging rehab process. It has all the major features of an orthopedic injury:

1. The rotator cuff typically detaches; a challenging rehab on its own.

2. The major muscles deform the fracture. Any pull from these muscles stresses the fracture, causing pain, which signals the spinal cord to decrease the firing of motor nerves.

Thus, no matter how motivated the patient, there is a limited amount of major muscle firing that will occur, especially early on. This can lead to stiffness, complicating recovery.

3. The proximal humerus is a "long" bone. Breaks are of significant severity and take more time to heal. Typically, improvement takes 24 months.

4. Neurovascular injuries sometime accompany these fractures, such as paralysis of the axillary nerve that powers the deltoid. Usually these recover without intervention, but, if present, slow recovery.

A dedicated physical therapist, athletic trainer team and a disciplined patient are needed to optimize results. Range of motion begins with a circular "pendulum" style exercise, with the arm at the patient's side for about 3 weeks, followed by progressive overhead motion and strengthening thereafter, as tolerated.

We use a Biodex device for isokinetic testing, to help judge when it is safe to return to riding. The Biodex can measure shoulder strength at variable speeds and over periods of time. This also creates values for endurance and fatigue.

A general target for returning to racing after a displaced proximal humerus fracture is a minimum of six months, which underscores the severity of this injury.

—Rick Lembo, ATC

JAMIE YANG

YOUR RIGHTS > By **Jim Halvorsen**

Technology

TECHNOLOGY HAS AFFECTED our lives more in the past 20 years than in prior history. Smartphones have more computing power than computers used by NASA during the Apollo moon missions. Sophisticated technology allows us to remotely operate thermostats, lights and garage doors.

Modern vehicles make models from five years ago look archaic, and are on the cusp of becoming autonomous. We already have cars that can parallel park themselves, and radar that automatically slows the vehicle down, then resumes speed once the lane is clear.

Motorcycles are no exception. Bluetooth is standard on larger cruisers and touring machines. GPS allows us to find our way without pulling over to read road maps. LED lighting creates safer illumination while using less power. Better gear keeps us warmer and drier.

The designs of cars and motorcycles has also advanced. So much that it has left motor vehicle administrators scratching their collective heads on what even constitutes a motorcycle.

For instance, the three-wheeled Slingshot from Polaris Industries has a steering wheel, brake and accelerator, identical to a car. In some states it requires registration as a car, whereas other states define it as a motorcycle. Depending on the state, you may also be required to wear a helmet when driving one. Even if your home state calls it a car, the state you're visiting may not.

The recreational market also has state's administrators confounded. I recently rode a battery powered skateboard with a single wheel in the middle. Tip it forward to progress and to the rear to slow down. Leaning left or right requires simply lifting your toes or heels, like snowboarding on asphalt. It had a top speed of about 22 mph.

Is it a toy, motor vehicle, motorcycle? Do I have to register it? Am I required to wear a helmet? What about insurance? Can I ride in the bike lane, sidewalk or street? In New York, these questions are easy to answer. Almost everything that employs other than muscular power and is used on public roads is subject to regulation. That means, license, registration, insurance, etc.

RECENTLY, WHILE VISITING Denver, Colorado, there was an assortment of electric vehicles scattered about the city for general use by the public. A download of an app on your smartphone and you can be cruising in minutes. Motorized and nonmotorized bicycles as well as small stand-up scooters were available. I opted for the scooter.

Minutes later I'm following a local leader, trying to process all the signage and routes. Some streets have lanes clearly marked for alternative traffic (bicycles, rollerblades, scooters and one-wheel skateboards). There are even traffic signals specific to these users.

To keep up, I found myself cruising through four-way stops, going the wrong way on one-way streets and probably committing other infractions I probably wasn't even aware of. My responsibilities as a road user were certainly compromised.

Since the machines were readily available, I simply assumed they were legal to ride on the street. I didn't know if I was required to wear a helmet, but the motorcyclists I saw weren't wearing one. There were no registrations displayed. Cities can legislate separately from the state, so the confusion grows even more. Regardless, it was great fun in a city that welcomes and caters to alternative modes of transportation.

There is pending litigation in cities across the country against the major electric rental scooter distributors and manufacturers, for being too dangerous. The fire department in Santa Monica, California, responded to 34 incidents just this past summer. It will be interesting to see how the lawsuits play out and how cities will respond. There's likely to be legislation, outright bans or possibly even safety improvements made by the manufacturers. Perhaps a combination of the above.

The lines are being blurred in both registering and using these wonderfully creative and exciting new vehicles. As many riders are doing, I threw caution to the wind, but it would be wise to be less cavalier about the consequences of being cited for traffic infractions and know the laws before embarking.

AT A RECENT motorcycle safety summit, Dr. Ray Ochs of the Motorcycle Safety Foundation was a presenter. His talk made mention of the technology in today's vehicles as well as what was looming in the future. My presentation followed his and focused on the lack of money, apathy and knowledge regarding motorcycle enforcement. Traffic safety funding has been diverted away from any motorcycle-specific enforcement in some states, like Wisconsin. Others have made motorcycle-only checkpoints illegal, like Maryland.

I commented on how powerful the motorcycle community voice is. Motorcyclists need to use that same collective voice to become part of this new technology. According to Dr. Ochs, motorcyclists are "at the table" in the smart car discussions.

Still, places like New York have antiquated legislation that leaves little to no room for alternative travel machines. How will all this disruptive transportation technology affect the motorcycle community in the future? MCN

Jim Halvorsen is a retired NYSP lieutenant, motorcycle crash reconstructionist, and MSF and Police Motor Instructor.

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TOTAL CONTROL > By **Lee Parks**

Electric

IN THE MOVIE, "The Graduate," Mr. McGuire tells Ben about the future career he should consider, "One word… Plastics." If it was 2018 and he was talking about the motorcycle industry, the word might be electric.

My company, Total Control Training, was recently contracted by Progressive International Motorcycle Shows to provide motorcycle instructors at its events around the country. The purpose of having instructors there is to give nonriders their first taste of powered two-wheel travel. It's called "Discover the Ride" and is the brainchild of industry veteran Robert Pandya.

WE PUT RIDERS on an electric-assist Yamaha bicycle first, to make sure they have the balance necessary to ride a motorcycle. This also has the benefit of giving new riders a chance to bridge the gap from full human power to full motorcycle power.

Riders are on an indoor carpeted road in an L shape that allows them to practice accelerating, turning and stopping. After about 10 minutes on the powered bicycle, riders are introduced to a Zero motorcycle. They are electronically limited to 12 mph, but are otherwise full-size, street legal motorcycles.

Riding indoors on electric bikes, with plastic barriers around the perimeter, under the watchful eye of certified instructors, creates a safe, nonthreatening environment. Of course, we also outfit them with motorcycle-specific helmets, jackets and gloves.

It's even more significant in providing a way to engage potential motorcyclists in the winter. We ran the classes indoors at the recent show in Long Beach, California, even though the weather was still nice enough to do it outside.

THIS PROGRAM HAS the potential to revolutionize how new riders are introduced to the sport. It turns out that many of the participants are friends or significant others of existing riders.

Consider how many people might join the sport if even a fraction of existing riders introduced a potential new rider to a program like this one.

Our industry continues to age out. If something innovative is not done soon, we face a potentially massive shrinkage of the sport. To hedge its bets, Yamaha recently made the bold announcement that it was moving its U.S. corporate headquarters from Cypress, California, to Atlanta, Georgia.

The challenges and costs of doing business in the Golden State are large. For a company the size of Yamaha, the savings could be many millions of dollars per year.

THERE SEEMS TO be a silver lining on the horizon. I recently went to a mountain bike expo and was able to test ride numerous power-assisted mountain bikes. Electric-assist bikes are still pedal bicycles, but essentially double the rider's natural strength and endurance.

As an avid mountain biker and lifelong motorcyclist, I was surprised how much I enjoyed riding on power-assisted bicycles. We were huffing up steeper grades than I ever thought possible, yet still able to enjoy descents, despite the heavier weight of the bikes.

I was as exhausted afterward as I've ever been from racing motocross or downhill biking, yet I had a great time. To my surprise, the extra help received from the electric motor did not make me lazier. Rather, it somehow motivated me to ride harder than I normally could.

I realized that power-assisted bicycles may be the next gateway to motorcycling, as BMX was the gateway to dirt bike riding for so many in the early '80s.

The combination of high-tech, green, experiential transportation may also be the magic bullet that attracts elusive millennials to our sport. Equally cool, I became open to new ways to have fun on two wheels.

IT SEEMS LIKE natural progression to go from a power-assisted bicycle to a fully electric motorcycle, which was abundantly clear to us at the show. The smiles speak volumes, as do the excited comments after the test rides.

Hopefully, this will be one of many recipes for success that the motorcycle industry has been needing. MCN

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

The Clean Machine

THERE'S A BIKE sitting in my garage that recently celebrated its fifth birthday. It arrived at my house in late 2013, sporting a pair of pristine chrome-plated wheels that sparkled in the sunlight, casting off almost blindingly-bright shafts of light as they rotated around their axles.

Throughout the ensuing years, I would wipe them down each time I washed the bike, always telling myself that someday soon I would polish them back to their former brilliance, as they turned ever-darker shades of a dull gray. When renewing the bike's license for the fourth time, I decided that this was to be that day. However, being inherently a very lazy person, especially when it comes to manual labor, I looked for the easiest way to accomplish that task.

I settled on a bottle of something called Hot Rims, found at the local auto parts store, which promised I could "spray it on and rinse it off for a brilliant shine!" Right up my alley, and for only $7.99. I followed the instructions diligently, rinsing the wheels and spraying on a liberal coating of the foam, which I then let sit for five minutes, as required for "heavier than normal oxidation and grime."

With great anticipation, I grabbed my garden hose and rinsed off the first wheel, prepared to be amazed. That amazement came in the form of a quick realization that the wheel looked not one bit different from before I started.

I GAVE IN and bought some heavy-duty chrome polish, which required lots of scrubbing and polishing. Still attempting to reduce the amount of labor required, I dug out my old polishing wheel, but soon realized that for either application or polishing, it simply couldn't reach into the myriad little grooves, channels and twists in the wheels' design. I finished about six hours later, with a pile of microfiber rags turned coal black on the garage floor and severe cramps in both of my hands. But the wheels looked gorgeous.

For nearly 30 years, about 90 percent of my riding was done on bikes I did not own. They were prototypes, demo bikes, loaners and press bikes, meant for testing, evaluating and photographing for magazine articles and such. I was beholden, sometimes even contractually required, to keep them always looking their very best.

It would not be exaggerating to say that every single day I rode ended with either thoroughly wiping, or giving a complete scrub-down to the machine, top to bottom. This was part of my job, and became an ingrained matter of habit, for which I endured a fair amount of ribbing from some of my riding friends.

THIS GOT ME thinking about various riders and their bike cleaning habits. I at least had a rationale for my almost perpetual cleaning habits, but what about everyone else, from both ends of the spectrum? I'll catch flak for characterizing riders by stereotypes, but stereotypes only exist because there's a certain amount of truth in them.

At my end of the spectrum are riders that have a lot in common with each other, though each would probably deny it: Gold Wing and Harley-Davidson riders. Though these two groups rarely mix, each has a core culture almost fanatically devoted to keeping their bikes so clean they look as if they are never ridden.

Cleaning, waxing and polishing are raised to the status of religious rites at any major gathering of these clans, including competitions called "Show & Shine" events.

At such events I have personally witnessed contestants lying on the ground with mirrors and magnifying glasses, using cotton swab to clean errant bits of dirt from inside their tire treads. Such is their devotion, and I admit a certain degree of admiration for their diligence.

AT THE OTHER end of the spectrum would be riders of dual-sport, or adventure bikes. For many of these riders, a patina of grime and dead bugs is a badge of honor, signifying the degree of adventure they have experienced. I have heard from some such riders that a thorough cleaning of their machines is, at best, an annual rite.

This is merely an observation and most certainly not a criticism of either group. Most of us fall somewhere in the middle, simply cleaning our machines when the mood or opportunity arises.

I am no longer so fastidious about the cleanliness of my bikes as I was when it was an obligation, yet out of sheer habit I am probably somewhat more anal than most. The problem is I expended so much effort on my chrome wheels, and am so inordinately proud of their appearance that I am reluctant to take the bike out of the garage! MCN

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

OPEN ROAD > By **Dave Searle**

Variable Valve Timing

A GENERATION AGO, it wasn't uncommon to read, "the camshaft is the heart of the engine," because it essentially defined a motor's personality. Either muscular at relatively low rpm, like a cruiser, especially powerful at high rpm, like a sportbike, or somewhere in-between. When a cam lobe determined precisely when the valves opened and closed and how high they lifted, at every engine speed, this was absolutely true.

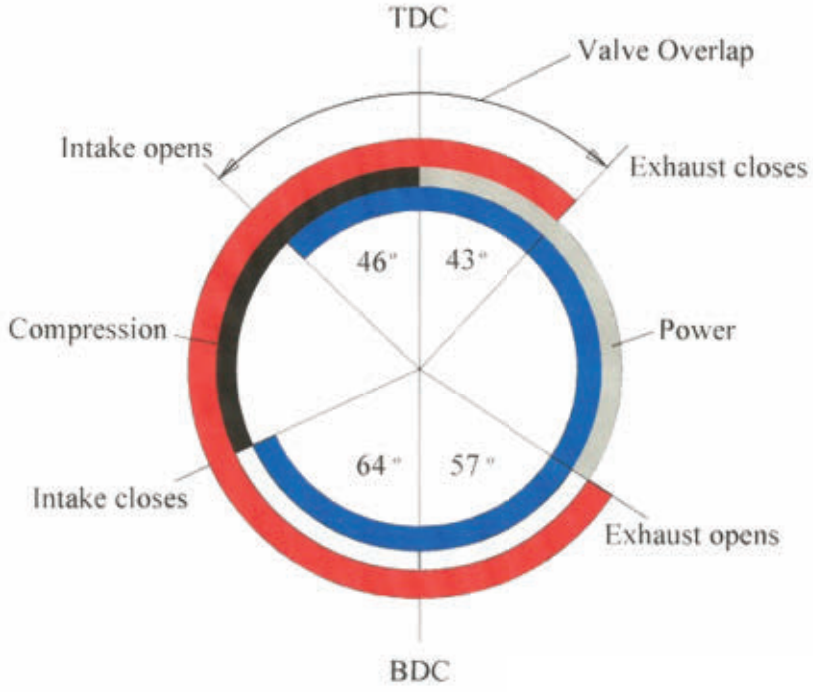
But there are two major drawbacks to the simplicity of this arrangement, both directly related to rpm. During the intake stroke, when the engine draws in its breath of fresh mixture, the engine's rpm largely determines the velocity of the incoming charge.

At high charge velocity, we can considerably delay the intake valve's closing, even as the piston rises, if the pressure differential favors the incoming mixture. Such a delayed intake closing is typical on a sportbike cam.

By the same token, at very low speeds, the rising piston may begin pushing mixture back out of the cylinder if the intake closing is delayed too long, reducing the volume of captured mixture, costing power and drivability. Cruiser cams close intake valves much earlier than those on sportbikes.

The second concern is valve overlap, which describes the period between the opening of the intake valve and the closing of the exhaust valve, when both are briefly open together. The idea is that an early intake opening and delayed exhaust closing helps to both pull the intake charge into the cylinder without waiting for the descending piston to do the job. It also works to push the last of the burnt mixture from the combustion chamber so that it doesn't dilute the fresh mixture as much.

High rpm engines typically have a lot of valve overlap, while low rpm engines have very little. But if the cam timing cannot be adjusted, these advantages are confined to a relatively narrow rpm range, and come with disadvantages at other speeds.



To make sense of the overlapping arcs, remember that a cam must control the valves through two full revolutions of the motor: intake, compression, power, exhaust. The pictured timing and overlap is from a very high-performance Formula One motor, and would be much less on most vehicles.

AS YOU CAN imagine, variable valve timing (VVT) can potentially allow much better engine operating efficiencies over a much greater rpm range. Ideally we would like to have both adjustable timing and lift on both the intake and exhaust cams. If we were forced to choose between systems for reasons of cost and weight, we would gain the most from an adjustable intake cam. Adjustable lift is available on many automobile engines, often accomplished by eccentric rocker arm fulcrums.

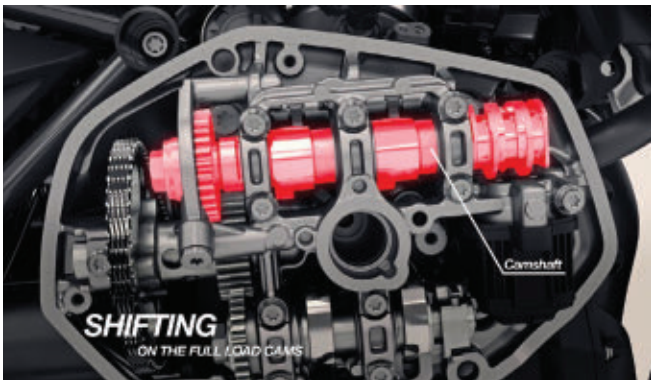
Engineers were quick to understand the potential of VVT, and various patents were filed as early as the 1920s. The first automobile with VVT was the 1980 Alfa Romeo Spider 2000.

The first motorcycle system appeared on the 1983 Honda CBR400F sportbike (never sold in the U.S.). Although it had a four-cylinder, four-valve motor, it engaged only one intake and one exhaust valve per cylinder at lower rpm, switching to all four at 9500 rpm.

The first bike in the U.S. to get VVT was the 2002 Honda VFR800 VTEC, which used just one intake valve at lower rpm, switching to two at 6200 rpm. Although the VTEC engine wasn't as powerful as its non-VVT predecessor, it not only met the EPA's future 2008 tier-two standards but reduced those allowable emissions by almost 50 percent. However, as the transition from

HIGH POWER MEDIA

Suzuki's SR-VVT system was designed to be legal in MotoGP racing. Available on its 2019 GSX-R1000 sportbikes, the mechanical system nonetheless creates smooth advance transitions—ideal for racing at the limit.



Using servo motors to shift the intake cams from low-lift to high-lift lobes, BMW's new ShiftCam 1250cc Boxers claim better low-rpm pulling power and greater top-end performance, with the transition based on throttle opening, not just rpm.

one to two intake valves gave an abrupt jump in power (14 hp within 300 rpm), potential drivability issues were MCN's chief concern.

When Kawasaki introduced its VVT-equipped Concours 1400 in 2007, it eliminated the problem of abrupt transitions by using a hydraulic cam phaser. Borrowed from its automotive sister company Mitsubishi, it gradually advanced or retarded intake timing to match conditions. This gave the C14 a very smooth and muscular powerband that nicely suited its touring focus.

Our only complaint was that the C14 gave noticeably less cruising-speed roll-on response and acceleration than less-complex competitors, like the Yamaha FJ1300 or Honda ST1300.

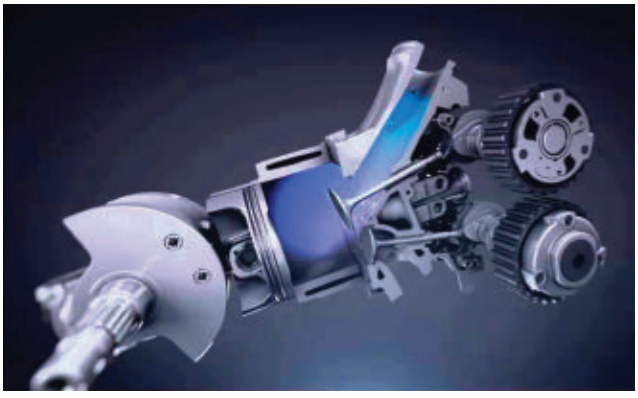
Similar hydraulic phasers are used on 2015 and newer Ducati DVT Testastretta L-twins, as fitted to the latest Multistrada and Diavel models. And Ducati is also the first motorcycle manufacturer to use phasers on both the intake and exhaust cams, for double the range of cam timing variation and more precise control of valve overlap.

Suzuki has been using VVT on its MotoGP bikes for years, not that it was well known outside the paddocks. Because electronic or hydraulic VVT systems were banned by the Fédération Internationale de Motocyclisme (FIM), Suzuki devised a clever all-mechanical system that's both light and compact, and will be part of every new GSX-R1000 superbike starting in 2019.

To give a smooth transition that doesn't compromise traction at the limit, the SR-VVT system uses a pair of discs fitted with grooved tracks that capture 12 ball bearings between them.

Because the disc turning the cam has angled grooves, and the driven side has axial grooves, as the balls press outward due to centrifugal force, they push the discs apart and cause the cam to retard the valve closing point (see illustration).

To make this action progressive, the discs are pressed together by a calibrated spring.



SUZUKI, DUCATI, BMW

By using hydraulic phasers on both the intake and exhaust cams (two for each cylinder, four altogether), the Ducati DVT system doubles the range of variable timing. Fitted to the latest Multistrada and Diavel models, which previously favored mid-range torque, the new VVT motors have both stronger high-rpm power and better low-speed drivability.

THIS BRINGS US to BMW's recently-announced R 1250 GS and RT models. Always interested in cutting-edge technology, BMW's newest Boxers now offer a VVT system, called ShiftCam. Working much like many automotive VVT systems do, each intake valve has two different cam lobes and the camshaft can be moved laterally to engage either one as needed.

In low-rpm running, the first set of profiles move both intake valves, but give greater lift to one of them, for an asymmetrical flow that creates desirable swirl in the combustion chamber, increasing burning speed for better efficiency.

When shifted to the high-rpm lobes, both valves open with the same duration and lift, to maximize cylinder filling and power. However, unlike some other step-transition systems that can create an abrupt power change, the BMW system is computer controlled to respond primarily to throttle opening, not rpm.

WE CERTAINLY HAVEN'T seen the last of VVT systems on motorcycles. When they can provide everything from greater top-end power to more low-end torque, less emissions and better fuel economy, we should have a lot to look forward to. MCN

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

MCN MOTORCYCLE CONSUMER NEWS

Next Month

- Yamaha Star Venture
- Aprilia Tuono V4 1100

Vintage

1939 Crocker Big Tank

Mecum Auctions will conduct a sale January 22-27 at South Point Hotel & Casino in Las Vegas, featuring the MC Collection of Stockholm.

Sales begin Tuesday, Jan. 22 at 1 p.m., and then resume each subsequent day at 9 a.m.

One of the stars of the show is sure to be a 1939 Crocker Big Tank, meticulously restored by Michael Weigert, the process overseen by Crocker expert Chuck Vernon. Sotheby's previously auctioned the Crocker pictured above for $300,000.

Also scheduled to be on the block will be a 1951 Vincent Rapide, a retired race bike that has not run in 50 years. The engine is described as a "lightningized methanol burner with big port heads" and has 38mm Dellorto carburetors and two-inch pipes.

A beautiful blue-over-cream 1936 Harley-Davidson VLH purchased at a 1984 Steve McQueen Estate auction will also be up for bid. The 80ci engine has only 700 miles and is perfectly restored.

Yet another bike of interest is Craig Vetter's 1973 Triumph Hurricane, which appears in this issue (Page 33). The unrestored triple was built in November, 1972, and is signed by Vetter. ***mecum.com***