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Simply log in from the Owners page, click on "OWNERS PROFILE," and fill in your missing information.



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THE BUELL SOURCE WINTER 2007



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BUELL LINES »



We want our readers to think of *Fuell* as a two-way communication device.

Well, here we are: standing on the threshold of a new era in Buell® ownership. The beefed-up, redesigned *Fuell*® magazine you hold in your hands is just one part of it.

What do you think? Does it contain more of what you'd like to see in *Fuell*? We've made an effort to include more exclusive technical and product-related content – as well as a more “behind the scenes” look at Buell racing and racers.

I hope you'll take some time to review the article “More than Just a Pretty Face” on Pages 30-31. It's about the new Super TT motorcycle, one of the most interesting models we've introduced so far – and it's very special to me personally.

I remember watching Scotty Parker as a young racer at the Peoria TT, and was amazed at how he tossed that big XR-750 V-twin off the jumps and slammed it into hard-packed corners. In the pits afterwards he was laughing out loud at the fun he just had. This type of racing is now resurging under the guise of Supermoto, and I wanted to celebrate the real heritage of this type of bike and riding with the Super TT. Everyone who rides it comes back with a huge grin. So I think we succeeded!

Do you agree? Let us know! We want our readers to think of *Fuell* as a two-way communication device. In fact, we've included several new (or improved) sections, where we'll need your input. These include Back Talk, Ask Abe (a technical forum), and Streetfighters.

And, of course, we're always open to hearing about your epic Buell adventures, like Kevin Smith's on Pages 9-11. If your story is compelling and the pictures are high quality, we'll be happy to share them with our readers. For more information on submitting items to *Fuell*, please read editor Matt King's message in Back Talk on the next page.

That seems like enough to get started, doesn't it? Sorry for all the housekeeping, but we had some business to take care of on the front end. I look forward to sharing more exciting thoughts with *Fuell* readers in the future.

Best of roads to you,

Erik Buell

« BACK TALK

WELCOME

Readers are an integral part of the new *Fuell*. Whether it's praise, criticism, or anything else you want to share with other Buell owners, we want to hear what you have to say about the magazine, your bikes, events, racing, trips, or just motorcycling in general. To make it easier to communicate directly with the magazine's editorial staff, we've established a new e-mail address, fuelleditor@gsdesign.com, where you can send letters or submissions for the Streetfighters section.

Of course, you can still send submissions the old-fashioned way too, since the post office still delivers to *Fuell*, 3700 W. Juneau Ave., Milwaukee, WI 53208.

Because we're starting pretty much from scratch, for this issue we've compiled a list of Frequently Asked Questions related to the transition away from BRAG® to the new Buell Owners section on buell.com, so log on to the site if you still have some questions after reading these. Or just send us a letter.

—Matt King, Editor

Readers are an integral part of the new *Fuell* ... we want to hear what you have to say ...

Q What are the changes from BRAG to the owners group?

A A new “Owners” section of buell.com has been created. This section will be the destination to find information about local Buell owner clubs and events, and to communicate with other Buell owners.

Fuell magazine will continue and be available at NO COST to Buell owners who reside in the United States and who have opted-in via their online profile. Simply go to the Owners section of buell.com and update your online profile to receive *Fuell* in 2007. If you do not have an online profile, you will need to create one to keep receiving *Fuell*.

The annual Buell Homecoming will continue and be open to all Buell owners.

Special hospitality for owners at races, rallies, and International Motorcycle Shows will continue and be enhanced.

Some previous BRAG member benefits (ex: Roadside Assistance Program, Travel Insurance, Shipping) will remain available for Buell owners, for a fee and where applicable.

Q Is there a name for the Buell owners group?

A The new group is open to all Buell owners, so there is no name at this time. Instead, Buell will establish an owner community on buell.com, develop events for Buell owners, and enable owners and dealers to establish local clubs if they so desire.

Q Why did you make the change from BRAG to an owners group?

A Based on feedback we received from Buell owners, BRAG members, and Buell dealers, we have come up with some new and better ways to enhance your Buell ownership experience.

Q What is the cost of the new Buell owners program?

A There is no fee to create an online profile and receive a complimentary subscription to *Fuell*. Check the “opt-in” box to receive e-mail and/or print information from Buell.

Q What do I need to do to register as a Buell owner?

A Update your existing online profile or create one (if you don't have one) via buell.com. Make sure to have your Buell VIN# handy and remember to opt-in to receive the benefits.

Q How can I find Buell clubs in my area?

A Continue to watch for details in the Owners section of buell.com and future issues of *Fuell*.

Q Will events like Wicked Twisties continue?

A Local gatherings of Buell owners, such as the 2006 Wicked Twisties tours, will continue. Clubs are encouraged to submit their events for possible inclusion in upcoming issues of *Fuell* and on the Owners section of buell.com.

TALK BACK TO US:

Send us an e-mail (fuelleditor@gsdesign.com). Submission of a letter constitutes permission to publish it in any form or medium. Letters may be edited for reasons of space and clarity.

FACTORY BUZZ »



HOME COMING 2007

Resistance is Futile

HOME COMING IS ALIVE AND WELL, AND COMING SOON

You know that irresistible urge you get every year to point your Buell® motorcycle toward Wisconsin? That's the homing device in your brain (installed free with every new Buell) telling you to head to East Troy for the annual Buell Homecoming event.

This year's festivities will take place July 5-8, coinciding with the ASRA Pro and MOTO-ST races at Road America on Saturday and Sunday. The event promises to include a few surprises you won't want to miss – plus, factory tours, technical seminars, Erik Buell autograph sessions, racetrack hospitality, and more.

For more details as they become available, visit the Owners section of buell.com. Don't fight it ... just go!

HOME COMING FACTS:

- **Started in 1992 with informal gathering at Road America**
- **Open to any and all Buell riders and enthusiasts**
- **Attracts owners from as far away as Australia**

Note: East Troy factory activities are free; participants must purchase tickets to attend races at Road America.

2007 BUELL DEMO SCHEDULE

Daytona Bike Week
Daytona Beach, FL
March 3-10

Road America
Elkhart Lake, WI
June 1-3

Moto GP
Monterey, CA
July 20-22

Sturgis Bike Week
Rapid City, SD
August 4-11

Mid Ohio
Mansfield, OH
September 28-30

Biketoberfest
Daytona Beach, FL
October 18-20

A \$1 MILLION CONTINGENCY

BIGGER AND BETTER IN 2007

Fuell® magazine isn't the only thing getting beefed up this year. Buell has announced an expanded racing support program for 2007, with more than \$1 million posted in cash contingencies for Buell racers competing in a variety of national and regional race series events and classes aboard XBRR and XB motorcycles.

"We're committed to supporting our dealer and privateer teams through this contingency program, and through trackside and technical support managed by our own Henry Duga," said Erik Buell. "Nothing makes Henry and me happier than helping privateer Buell racers achieve their goals. And we're proud to support their efforts."

For complete details on the 2007 \$1 million Buell contingency program, visit the Racing Support section at buell.com.

TRACK ATTACK!

Two words: Track days. One more: Premium. Okay, three more (but that's all!): Presented by Buell.

For details on Inside Pass, the ultimate track day experience, visit buell.com.

KNITTED. FITTED. FREE.*

Get a **FREE Buell Skullcap** to wear after those cold early-season rides. Hurry! Offer ends April 15, 2007.

Go to buell.com for more information.



*Free hat is available to U.S. residents only from February 1 through April 15, 2007, or while supplies last. Limit one hat per customer. Original coupon must be presented at time of hat redemption.

Two-man Stoppie World Record

RECORD SMASHED ON WING AND PRAYER

Check out Wing Chui as he hangs on for dear life, while professional Buell® stunt rider Craig Jones pitches his Buell Firebolt® forward to break the world two-man stoppie record late last year. The pair traveled 305 meters (1,000 feet) on the front wheel only before bringing the bike in for a successful "landing."

By the way, you know these guys are professional riders on a closed course, and not to try this on your own, right? Good. Just checking.

TOP 5 Reasons you're not going to try this at home:

- 1» Adult diapers are not thick enough to protect your leathers.
- 2» Underestimating the stopping power of the ZTL™ brake and flipping 395 pounds of American sportbike (plus whatever you weigh) onto your (now former) best friend.
- 3» Your insurance premiums are already high enough.
- 4» You're not a professional rider and the supermarket parking lot is NOT a closed course!
- 5» If the stunt doesn't kill you, your spouse will.



NEWS BRIEFS

Buell Hits the Desert James Copple of Manteca, California became the first to ride a Buell motorcycle in the legendary Baja 1000 desert race in November. Riding a (very) highly modified Firebolt, Copple competed in the Sportsman Motorcycle Class.

Terms of Endurance Round 1 of the 2007 SunTrust MOTO-ST Endurance Series is set for March 3-4 at Daytona International Speedway. Buell will be the presenting sponsor of the SuperSport Twins (SST) class in the 500-km (311-mile) race. For complete race results, visit www.moto-st.com.

It's a Date The 2007 CCS/ASRA event at Road America in Elkhart Lake, Wisconsin has been moved from its traditional April weekend to July 6-8 (perfect for Buell Homecoming, btw). Recalling Wisconsin's typically miserable April weather, racers everywhere received the news ... warmly. For the complete CCS/ASRA schedule, visit www.ccsracing.com.

New at buell.com

As part of the new Buell owners program, the new Owners section at buell.com features exclusive content, including *Fuell*® magazine back issues, downloads, and more:



- Submit local Buell events to appear on the public buell.com events calendar
- Find local clubs in your area or submit your own club to appear on the club locator
- Get all the info about your Buell motorcycle with owner's manuals online



A COOL 0.1 MILLION

The crew in East Troy celebrates the manufacture of the 100,000th Buell motorcycle, a 2007 Ulysses™ XB12X. "We take great pride in knowing we've provided 100,000 bikes-worth of fun and unique experience for our owners and loyal enthusiasts," said Erik Buell. The bike was later presented to Erik as a gift.



ASK ABE

A Buell technical forum with **Abe Askenazi**,
Director of Analysis, Test, and Engineering Process,
Buell Motorcycle Company

Q Abe, can you help me understand Buell's patented Uniplanar™ engine mounting/isolation system?

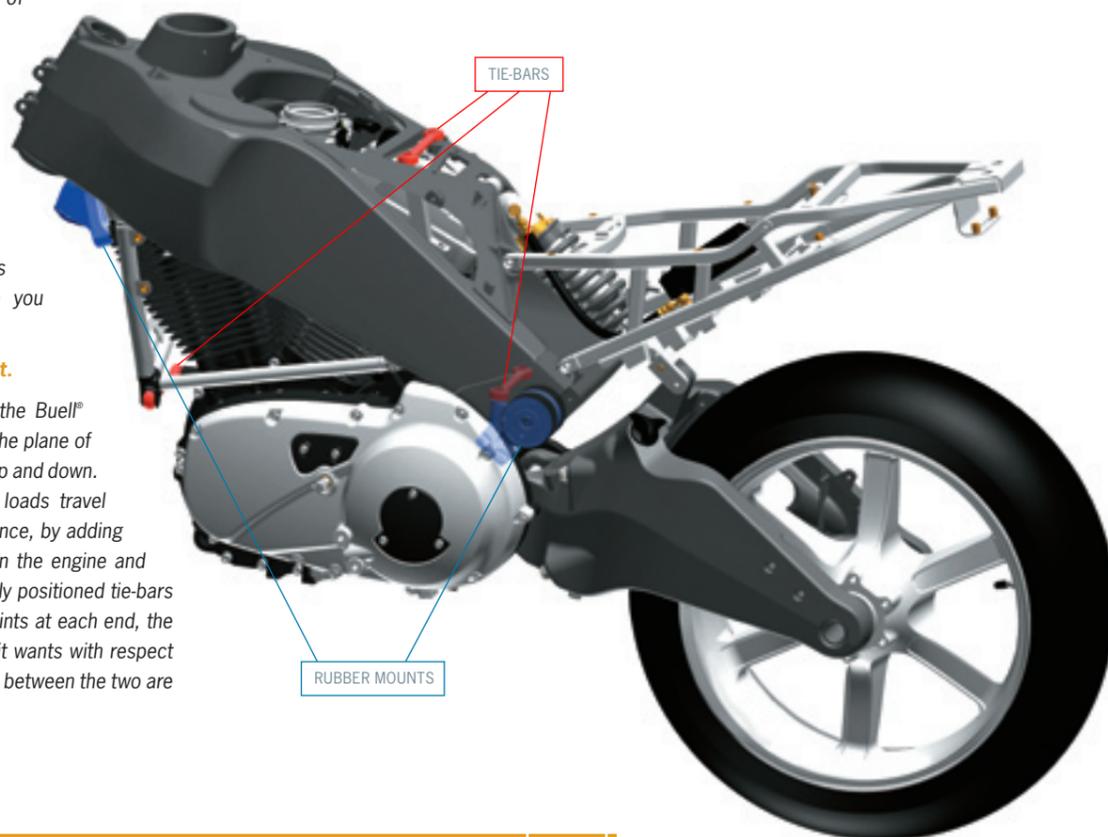
A Certainly! Erik Buell's patented engine isolation system accomplishes quite a few goals very efficiently:

1. The rider is isolated from the vibration caused by a non-counterbalanced 45-degree V-twin or single cylinder engine. This is the primary goal. Since the rider sits on the main frame of the bike, engine isolators (rubber mounts shown in blue) are placed between the engine and the main frame.
2. The engine provides direct power to the rear tire without going through "rubbery" isolators, so the rider's right hand communicates directly to the road. Hence, the swingarm assembly is connected rigidly to the engine. Of course, the swingarm pivots on bearings, but there is virtually no compliance in these bearings.
3. The rider has direct feedback from the road ahead, again without going through "rubbery" isolators. This is why the front fork assembly gets bolted "rigidly" to the main frame, where the rider lives; it pivots on compliance-free steering-head bearings.

4. Finally, the transmission of torsional inputs through the motorcycle are as flex-free as possible. This is the clincher of Buell's design. If the rear tire is connected rigidly to the engine and the front tire is connected rigidly to the main frame, but there are rubber mounts between these two, how do you transmit loads "rigidly"?

Enter the Uniplanar concept.

The engine, as positioned in the Buell® motorcycle, wants to shake in the plane of the bike – that is, fore and aft, up and down. However, the torsional/lateral loads travel perpendicular to this plane. Hence, by adding additional connections between the engine and frame composed of transversely positioned tie-bars (shown in red) with spherical joints at each end, the engine still gets to move how it wants with respect to the frame, while lateral loads between the two are transmitted "rigidly." —Abe



Q What's the difference in suspension between the XB12S and the XB12Scg?

A The XB12S and XB12Scg have altogether different suspension components. The forks and shock on the cg were designed to lower the bike's seat height by 1" at standard ride height (one third travel sag), while keeping the bottom-out condition the same. This meant reducing rear and front wheel travel by 1.5" and 1.6", respectively. (Note: The front travel needed to be reduced more than the rear in order to retain the attitude of the standard-height bike, since the rake angle eats some of the forks' vertical travel.)

In order to achieve this reduction in travel without sacrificing ride quality, the spring and damping of the suspension components had to be developed specific to the lowered vehicle. Compared to the standard-height components, both the initial and final rates of the shock spring were changed, and the forks got dual-rate springs versus the standard's single rate. —Abe

ANSWERING THE CHALLENGE

BY
KEVIN
SMITH



ONE MORNING LAST SUMMER, I WAS HAVING BREAKFAST WITH MY BUDDY REG. AS USUAL, WE WERE TALKING ABOUT MOTORCYCLES, MOSTLY ABOUT THE NEW BUELL® ULYSSES™ XB12X. HE'D BEEN TELLING ME THAT I SHOULD BUY ONE, SO I FINALLY SAID, "I'M HAPPY WITH MY THUNDERBOLT® S2. IT DOES EVERYTHING I ASK IT TO." HIS REPLY WAS, "MAYBE YOU'RE NOT ASKING ENOUGH."

That simple comment bugged me for months. How could he say I wasn't asking enough? I'd put three cross-country trips and 74,000 miles on my S2. It handled great and had good power. But then I'd think about all the fire roads I'd passed by over the years, while wondering where they went and that maybe the Ulysses™ would do better on those. I'd think about how my bike was more than 10 years old, and Buell had made a lot of handling improvements since then; test rides on other XBs had proven that. The XB12X also had more power than my S2, and it's no secret that a little more power is always better. A few months later, I had a new Ulysses XB12X in the garage.

The Thanksgiving holiday gave me an excuse for a road trip, and I decided to visit friends and explore new areas. California's Bay Area has a population of several million people, but in an hour I'd left them all behind as I headed south into broad valleys and twisting roads. Once again I was thankful that civil engineers once upon a time decided to build a road that hugged the hillsides rather than shooting straight down the valley. The weather was warming up nicely, the pavement was smooth, and there was hardly a car in sight. It was a perfect beginning to what would be a nearly perfect trip.

Before leaving I'd installed the Ulysses' factory hard bags and loaded them with my usual gear: rainsuit, electric vest (now easily plugged into the dash's auxiliary connector!), emergency kit, and so on. It wasn't a lot of extra weight, but I pulled out the Owner's Manual and checked the recommended suspension settings. Being a roadracer, I like a bike with firm suspension settings when things get twisty, so I decided to go one setting stiffer than specified for the load.

Putting the bike through its paces in the curves, I was really impressed by how well the "Uly" responded. I already had more than 2,000 miles on the bike, but this was the first time I'd changed the suspension settings, and doing so transformed the handling. The stock suspension settings are a little soft, soaking up bumps

and blitzing rough roads, but providing less feedback on smooth pavement. With just a few turns of a screwdriver, the bike became a canyon-carving machine. The great thing is that when returning to rough roads I can get that plush ride back in less than five minutes.

I took the long way to Las Vegas, heading into the Southern California mountains, stumbling across a section of old Route 66, and then onto the interstate. The Buell® Road Tech GPS lets me pick a general direction and not worry too much about getting lost, but asking it to pick the smallest roads meant a couple times I found myself at the end of the pavement. It's been decades since I rode a dirt bike, and even then I was the guy that everyone else waited for, never having been confident the tires would go where I pointed them when there's no pavement to stick to. The "Uly" will certainly do more than I can for now, but what impressed me was how easily it did what I wanted. I could roll along through the unpaved sections, and the bike tracked straight and true, soaking up the washboard ripples. When I reached the interstate with traffic barreling along at 95 mph, the "Uly" kept pace with nary a hiccup. In two days, I'd covered hundreds of miles of twisting pavement, kept going when there was no pavement, and cruised at high speed. I love my S2 but have to admit it wouldn't be as comfortable in any one of those situations, let alone all three.

The GPS led me straight to my hotel at night and showed me the quick way out of town the next morning, telling me where to turn and saving me from hassling with tank-bag maps. Leaving Las Vegas, I set the target for Tempe, Arizona, and let it take me onto new roads. The scenery of mostly sagebrush and desert was all new to me and still interesting. I was expected for dinner and was confident I'd arrive in plenty of time, but halfway through the day I realized I'd neglected the time change at the Arizona border and so, lost an hour on the clock. Sometimes we forget the simple things.



After a short overnight visit with friends, the next morning I was back on the interstate headed west. That part of the trip was all unscenic concrete slab, but every now and then the freeway skirted close to the mountains. They're much different than those in California, like big piles of little rocks, and were a welcome break from the monotonous desert views.

After detouring to Salvation Mountain, I got back onto two-lanes near the California border, and jogged alternately south and west. Cutting through old volcanic terrain with mounds of jagged black rock that could be a set from a science fiction flick, the road was mostly straight but rippled like a roller coaster up and down the dry washes, first compressing the suspension and then nearly lifting me out of the seat. I was laughing out loud at the sheer joy of it. For a brief time I ran next to the Colorado River, but it was barely more than a wide creek at that point, having been siphoned off for all those green lawns in Los Angeles. Further west, I passed through enormous sand dunes and off-road playgrounds, then back into more mountains. The road got tighter and tighter as it clawed its way over those natural obstructions, but the "Uly" was rock-solid, and I managed to scrape the pegs a few times.

After spending the holiday with family, I headed for home. Literally sticking to the back roads, I skirted the edge of a massive old Army base, passed through central California's vineyards and cotton fields, and didn't stop heading west until I reached the Pacific Ocean. A short time later the "Uly" and I ended the ride a week older, but 2,052 miles richer.

Reg was right. I had not been asking enough of my machine. The Ulysses™ opened new riding opportunities and an entirely different style of motorcycle travel. When planning a trip, I no longer look only at the red lines or the black ones, but at the thin gray lines that twist back and forth through interesting, out-of-the-way places. If the pavement ends on the way there, I know I can just keep going. **fuel**

“I WAS LAUGHING OUT LOUD AT THE SHEER JOY OF IT.”



THE JAMES GANG ENDURES FOR A
MOTO-ST PODIUM SPOT AT DAYTONA

COOL UNDER FIRE

“ONCE WE GET GOING, THINGS MIGHT GET A LITTLE INTENSE,” MIKE KIRKPATRICK SAID TO HIS RIDERS AND CREW. “AND I MIGHT GET A LITTLE EXCITED ...”

“You!?” someone interjected. And everyone laughed. It was moments before the start of the inaugural MOTO-ST Eight Hours at Daytona, and, indeed, emotions were running high. But the prevailing mood of the James Gang Racing team was eager excitement. And Kirkpatrick – a cold-blooded refrigeration company owner by day (“Cool Ice” is his online moniker) – was at the center of the storm.

The scene was controlled chaos, a mad scramble to take care of last-minute details – and at least one last-minute “basic”: “How can we not have any gas!? Go get some! Go – now!”

Team owner Paul James would be first out, and he was fretting about the rolling start – something he had never done before. Plus, due to his ASRA (American Sportbike Racing Association) and CCS (Championship Cup Series) racing commitments, he had missed the MOTO-ST riders’ meetings.

The team had grown out of a successful foray into endurance Team Challenge ASRA racing. James and John Fox had won two endurance races on that circuit, and when Fox broke his collarbone, Greg Avello stepped in, and he and James won another Team Challenge race.

“And all of a sudden we’re thinking, we’re getting pretty good at this endurance thing, and maybe the three of us should take a shot at the MOTO-ST race at Daytona,” James recalled.



FAR LEFT: Greg Avello negotiates the Daytona darkness.

LEFT: James Gang crew chief Mike Kirkpatrick gives instructions to rider Paul James.



Kirkpatrick had worked with James for more than a year by then and was an easy choice for crew chief. Other crew members included fellow Buell® racer Tom Michels and his wife, Kelli (more about her later); Nancy Birkenstock, who drag races an XB9S; John Kinzer, mechanic and body man; Brock Nummerdor, an engineering student ... and, when adversity struck, a host of other Buell racers, mechanics, and enthusiasts who pitched in to help.

Because they were the first entry in the GST (Grand Sport Twins) class, they had no real clue what level of opposition they would face. But as the field expanded, they realized some stiff competition would be going for the podium finish they were shooting for.

“There were some pretty strong teams entered, including a couple of other Buell teams, one with [eventual 2006 ASRA Thunderbike champion] Dan Bilansky and the Rozynski brothers,” James said. And there was a very strong BMW team entered in our class, with guys who had AMA and Isle of Man TT experience.”

They knew it would take their best effort to finish well, and preparations had been monumental. Kirkpatrick stripped the team’s XB12R down to the frame, installed a fresh XB12 engine, and painstakingly reassembled it bolt by bolt using plenty of threadlock and safety wire. And, because the inaugural MOTO-ST race would be run at night, the crew had to devise a lighting system.

Radios were another concern. Though not technically required, they were strongly recommended, as it would be difficult for crews to signal riders from pit row at Daytona.

“I was skeptical about the need for radios,” James said. “I didn’t want to add any unnecessary expense, but they definitely paid for themselves. In fact, they saved us.”

For instance, when the pace car came out early (something no one on the team, or few in the race, had dealt with before), there was a lot of confusion on the track regarding the proper procedure.

“Some riders were passing the pace car, and it was very confusing,” James recalled. “So I was on the radio asking Mike what I’m supposed to do.”

“Asking!?” Kirkpatrick interjected.

“Okay,” James clarified. “I’m on the radio, *screaming* at Mike, ‘What do I do? What do I do!’”

“And I just kept telling him, ‘Stay behind the pace car!’” Kirkpatrick replied.

Later, when transmission troubles developed, the radios would really earn their keep. In fact, it was the transmission problem that would become the defining challenge of the race for the James Gang.

Ultimately, the culprit was determined to be a countershaft retaining screw, which came loose and damaged the transmission. But when the problem first surfaced on lap 115, it was thought to be a broken clutch cable.

“Paul was on the bike when it first happened, and I was the next rider up,” Fox said. “He got off the bike ... and I probably didn’t hear all the conversations he was having with Mike. Paul said to me, ‘The clutch is gone.’ And I was like, ‘What!?’ And I looked at it and flicked the lever, and it was just flopping back and forth. And Paul said, ‘The clutch is gone, now go, GO!’”

“So I went out and did a few laps without using the clutch, but it was getting harder and harder to shift, so I came in. We made some adjustments and I went back out, but ultimately we knew we had to try to fix it.”

So with more than two-and-a-half hours remaining in the race, on lap 133, they brought the bike in behind the wall and began to tear it apart. But if it hadn’t been for the lightning reflexes of “fireman” Kelli Michels, their race might have ended much earlier.

FEELING THE HEAT

With 60 laps in the books, about 2:20 into the race, James brought the bike in for a routine pit stop. Fox was the rider on deck, and he describes what happened next:

As they’re filling the tank, I see it overflow, and I think, “Uh-oh, that’s not good!” But nothing happened, so I kind of forgot about it. As I’m pulling out, I’m looking behind me making sure no one else is coming down pit lane. I hear yelling, and right at that moment it got hot. I looked forward and the bike’s in flames. Not wanting to drop the bike, I let go of the handlebars and scooted back on the seat. And before I could even figure out what to do next, the fire extinguisher was on it. Kelli did a fabulous job putting it out, so I didn’t have to do too much thinking at that point.

But putting out the fire was only the first step in getting back into the race. The bike was covered with extinguisher residue, and a race official was right there telling them they couldn’t go back onto the track with the tires covered like that. So Kirkpatrick started scrubbing the tires. Meanwhile, someone behind the wall noticed there was fuel coming out of the back of the bike. More chaos ensued, that time not quite so controlled.

“The fire is out and the tires are wiped off and Paul’s yelling, ‘Go! Go!’” Fox recalled.

“At the same time, from behind the wall, others are yelling ‘Stop him! Stop him!’”

“And now I’m yelling,” James said, “‘It’s just overflow! Get him out of here!’”

Finally, once he sorted out the conflicting instructions, Fox took off in a plume of fire extinguisher “smoke,” and James and the crew retreated behind the wall, a little bit rattled. Again, it fell on Kirkpatrick to settle the team’s nerves.

“Okay, calm down,” he instructed. “No harm done. Good work, everyone. Now let’s get back to work.”

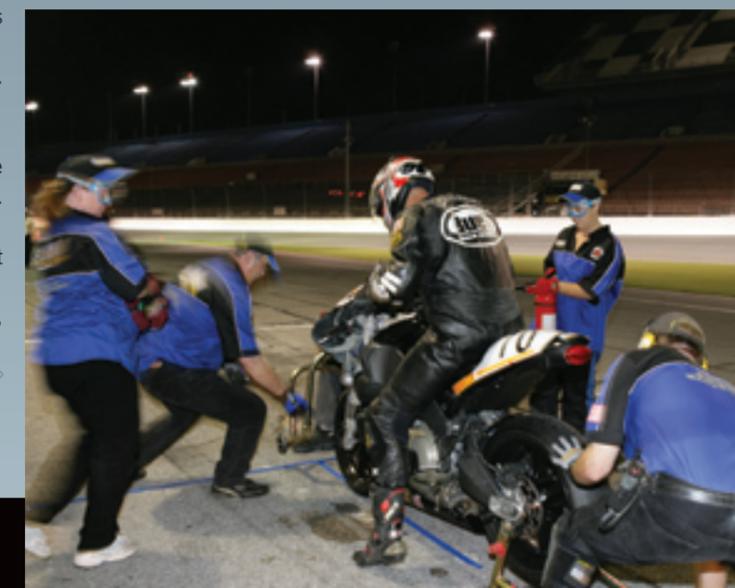
Moments later, Fox was on the radio: “Way to light a fire under my ass!” he said. And also, in appreciation of the crew’s quick work, “You guys rock!”

“SOME RIDERS WERE PASSING THE PACE CAR ... SO I WAS ON THE RADIO ASKING MIKE WHAT I’M SUPPOSED TO DO.”

“ASKING!?” KIRKPATRICK INTERJECTED.

“OKAY,” JAMES CLARIFIED.

“I’M ON THE RADIO, SCREAMING AT MIKE, ‘WHAT DO I DO!’ ‘WHAT DO I DO!’”





John Kinzer and Terry Galagan pitch in to help get the James Gang back out on the track.



James, Avello, Fox, and Kirkpatrick celebrate on Victory Lane.



“Seeing the crowd gathered in our pit was so exciting,” Avello says. “But it’s like that at almost every race we go to, no matter the track, no matter where you are in the country. You know there are going to be a lot of people rooting for you because you ride a Buell. And we really felt it during those last few laps.”

The James Gang had earned a hard-fought third place finish in the GST class. And when Team Daffy (Ducati) failed the dyno test, they moved up to second place, giving them an even bigger payoff for their efforts.

A few weeks later, Kirkpatrick reflected on the experience and what the team had accomplished:

For me, it was a dream come true. To be a crew chief at Daytona, and the bike that just wouldn’t stop. And it was a team that never gave up, either. The Buell community is always there for each other, and it showed during our transmission repair. Terry Galagan and [Buell Racing Manager] Henry Duga stepping up to help us, that’s the Buell spirit. To bring a podium finish to Erik and everyone else at Buell is just incredible. To compete at Daytona at this inaugural event and finish on the box ... it doesn’t get any better.

Sure, he might get a little excited from time to time. But “Cool Ice” Kirkpatrick and the rest of the James Gang know how to stay cool when the heat is on. And now they have the hardware to prove it. **fuel**

James Gang Racing thanks Hal’s Speed Shop, Kegel H-D/Buell, Henry Duga, and Bruce Rossmeyer’s Daytona H-D/Buell for their support.

PHOTOGRAPHY: BRIAN J. NELSON; MIKE ZIMMERMAN

“YOU KNOW THERE ARE GOING TO BE A LOT OF PEOPLE ROOTING FOR YOU BECAUSE YOU RIDE A BUELL ... WE REALLY FELT IT DURING THOSE LAST FEW LAPS.”

PICK A GEAR, ANY GEAR

The fire was but a distant, smoky memory as the team tore the transmission apart and struggled to assess the damage. Ultimately, with the help of seemingly every Buell® mechanic within a quarter-mile radius, they realized the renegade retaining screw had caused too much damage as it rattled around inside the gearbox. The bike would run, but it wouldn’t shift. So they settled on fourth gear – and fourth gear alone – to finish the race.

“Tall enough to be somewhat acceptable on the banking, although banging off the rev limiter,” James explained, “and low enough that we could still chug it out of the infield. It wasn’t optimal by any means, but it was a testament to how tractable the Buell V-twin engine is.”

In particular, Terry Galagan, from Hal’s Speed Shop, put a lot of effort into getting the bike going again. As Avello prepared to mount the bike and return to action, Galagan took him by the chin bar, looked straight into his eyes, and said: “Now take it easy. Don’t you dare crash! I’ve worked way too damn hard to have you throw it all away trying to make up for lost time.”

During the 35-minute stop, the James Gang had slipped from second in the class to third. But they still had a fairly comfortable gap over Team Ducati New York in fourth. But with only one gear, would that gap hold up?

“It was quite a challenge trying to maintain your corner speed and not get in the way of other riders,” James said. “Plus, it was getting dark. There were moments when it wasn’t much fun, and I remember wishing we could fast-forward time. But with a podium finish within reach, we had to soldier on.”

Once again, Kirkpatrick did his part. As the clock ticked its way toward the eight-hour mark, and the James Gang riders worked their way deliberately around the track, he kept in constant radio contact, encouraging his riders and making sure the mental strain of the long race didn’t take too much of a toll.

With about 15 minutes left, the fuel light came on for the last time, and Avello brought the bike in to hand off to James for the final few laps.

“I knew by that point that we were pretty close to having [our podium finish] wrapped up,” James said. “But I also knew that the last thing you can do is crash the bike or break it. Because we needed those laps. It was a long 15 minutes until we got the checkered flag.”

Meanwhile, the crowd in the Buell pit area had reached overflow proportions. Friends, fans, family members, and even a few race officials seemed to be rooting for the Buell to finish strong. When the checkered flag finally flew, a large cheer went up.



■■■■ RACER PROFILE ■■■■
WES ORLOFF



WIDE OPEN

WHEN YOUR PARENTS GIVE YOU THE INITIALS W.F.O., IT'S GOTTA BE SOME SORT OF SIGN, RIGHT?

So, even though your mom seriously frowns on you having any sort of two-wheeled motorized transportation (okay, maybe that little 5-hp Briggs & Stratton-powered mini-bike would be grudgingly permitted), you clamp that need for speed tightly to your heart, holding it at bay as long as you can until that moment comes, finally, when you can break free and buy that motorcycle you've always dreamed about. What other choice do you have?

And maybe it's that pent-up demand that compels you to ride that shiny new 600 a little faster than you ought on the streets of southern Indiana, where you lived after you earned an engineering degree from Ohio State. Like a *Survivor* cast-off at Taco Bell, you just can't control yourself, clogged arteries be damned.

Ultimately, though, you slow down long enough to realize that pushing the limits of your motorcycle on the street isn't where it's at. So, thinking you're "a pretty fast kid," you sign up for a track day, where your prematurely swollen ego gets deflated a bit, courtesy of some more experienced riders. It's just enough to make you mad, and want to come back and get better ... again and again and again.

Until finally, that part of yourself you've been repressing all these years is in full bloom, and it really and truly hits you for the first time: "Hello, my name is Weston Fred Orloff, and I was born to race motorcycles."



FACING PAGE: Orloff setting a land speed record.

ABOVE: On the Battle of the Twins Formula 2 XB9/12R at Barber Motorsports Park.





RIGHT: On a 1972 Harley-Davidson® XR750TT during a practice at Mid Ohio.

BELOW RIGHT: In 2006, Orloff led a group of Milwaukee bike enthusiasts in a vintage middleweight superbike build at Mid Ohio Vintage Days. Here he is taking the "new" bike – built from the ground up in three days with swap meet parts – to the track for the first time.

As fate would have it, your engineering skills lead you to a position in Product Development at Harley-Davidson, which just happens to be the mother ship of a little place called the Buell Motorcycle Company. You've admired Buell® motorcycles since you first saw one in 1993 at Daytona, so you take advantage of the employee discount to purchase a 1999 Lightning® X1.

It's not long before you're fast enough to catch the attention of some people who need a rider for their vintage motorcycles, so you take the "job" and get involved with the American Historical Racing Motorcycle Association (AHRMA), a national circuit that runs at premier tracks all over the country. As it turns out, the series includes a "Battle of the Twins" class that features modern machines, so you start bringing your Buell along to race for yourself.

This turns out to be a good thing, because before you know it you're winning races against riders on a wide variety of other brands. The X1 gets replaced by a pair of 2003 Firebolt® XB9Rs: one bone stock and one juiced up, blown out to 1200 cc with a ram-air system and chain conversion. The stocker you use for practice and to get the feel of a new track; you save the big one for winning races.

The Lightning? Every other Thursday night it becomes a drag bike at Great Lakes Dragaway in Union Grove, Wisconsin, where it helps you win seven of 10 events in the Harley-Shootout Money Class (along with a track championship) in 2006.

BELOW: Orloff's rare Factory Pro Thunder-spec twin carb Buell Lightning.



PHOTOGRAPHY: LINDSAY MAUK; EAGLE STAR PHOTOGRAPHY

You even find a girlfriend, Leah Bober, who not only loves racing motorcycles as much as you do (well, almost maybe), but who grew up two miles from you in Cleveland and is also an OSU Buckeye – though you never met her until you both ended up doing lots of advanced math and physics for the Motor Company. "Like a match made in heaven," you tell anyone who cares to ask (or just listen). If that's not fate

But there's more. In 2003, you and some engineering buddies decide to take a crack at a world land speed record at Bonneville. The "crack" is successful, and you're lucky enough to be the guy who rides the Team JDees Performance 2003 Buell® Firebolt® XB9R (984 cc with RR1000-derived bodywork) to a world-record 169.209 mph in the Modified Partial Streamlined 1000 cc Pushrod Gas (MPS-PG 100) class. How cool is that? It's a record that stands to this day.

Work, racing, romance ... it all seems to be about motorcycles now, but that's just fine. To make room for it all, you buy some warehouse space in downtown Milwaukee and start converting it into a combination garage/apartment. "A labor of love," you say about the project. "4,000 square feet of shop space that I can live in, too."

This apparent obsession with speed and motorcycles may seem a little excessive to some but not to you. Because you're Wes Freakin' Orloff: W.F.O. And you're living your life wide open. **fuel**

IT ALL SEEMS TO BE ABOUT MOTORCYCLES NOW, BUT THAT'S JUST FINE.

LEARNING FROM THE CURVES)

WHAT THE XBRR TEACHES US ABOUT POWER

BY STEVE ANDERSON
XBRR PLATFORM DIRECTOR

On the same rear-wheel dynamometer in East Troy that sees a production Buell® XB12 motorcycle put out 92 horsepower or so, models with the Buell XBRR racing engine routinely lay down spectacular power curves that peak as high as 152 hp. Torque is similarly huge, with a peak reading of 105 foot-pounds.

With this kind of power and a weight significantly less than a production XB, the air-cooled, 45-degree V-twin, twin-valve XBRR has clearly made its mark in the racing world. It has out-accelerated GSX-R1000s in endurance racing, on its way to winning. It packs enough power to have carried Jeremy McWilliams to more than 180 mph in the 2006 Daytona 200 – and enough *oomph* to win France's Bol d'Or Twins race in front of a pack of water-cooled, 4-valve-per-cylinder Ducatis and Aprilias.

But perhaps the most important thing about the XBRR engine is what it showcases about the inherent flexibility of the engine type, and what it teaches us about how to build a better air-cooled, 45-degree V-twin.



At the Buell R&D shop in East Troy, an XBRR engine is readied for action at Daytona.

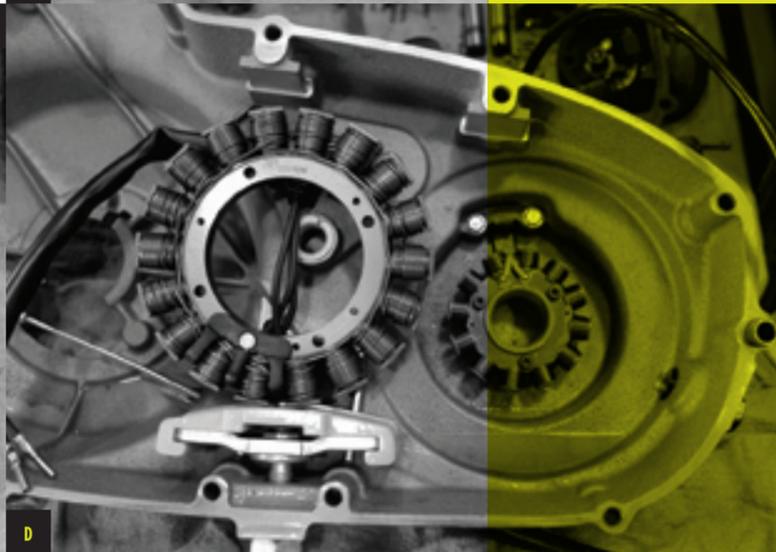
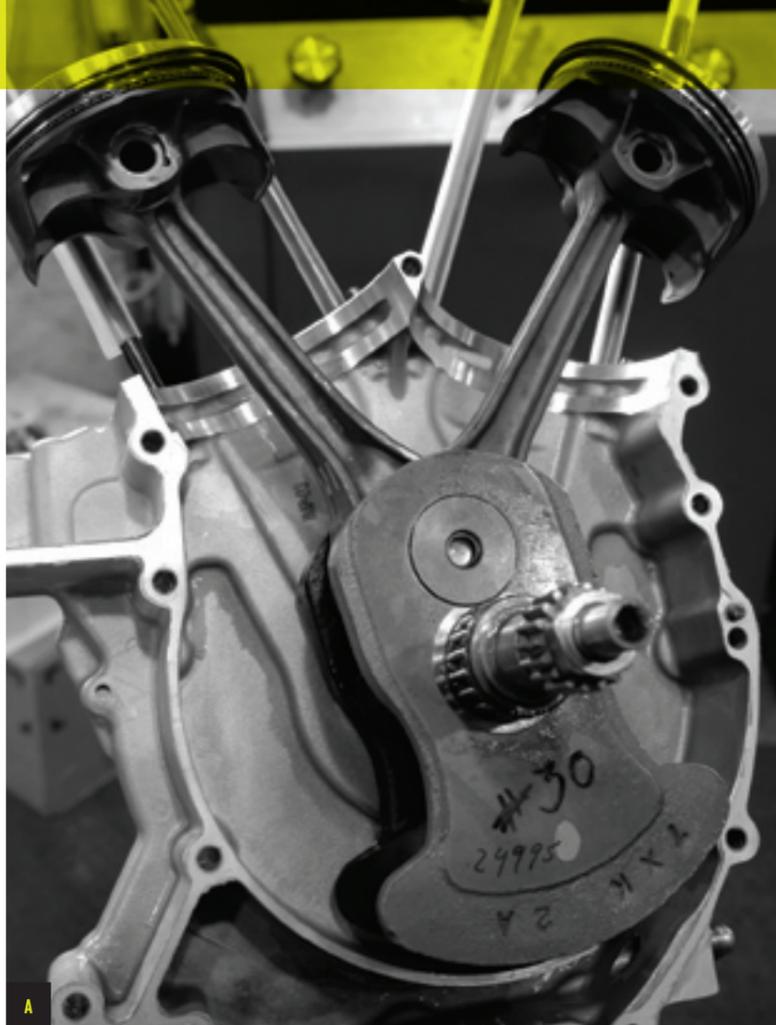
A STORIED PAST)

The air-cooled engines that power Buell® XBs have a long family tree, one that reaches back to the first 1957 Harley-Davidson® Sportster®. But while its unitized architecture was set a half-century ago, the details of the XB engine have been forged in racing. The lessons learned throughout the 1990s in Pro Thunder racing were incorporated in the 2003 Buell-only XB engine, with improvements everywhere, in rods and cases and bearings and heads – indeed, in almost every part. These improvements have caused one major European motorcycle publication to declare the Buell XB engine one of the most reliable it had ever seen. Its editors were stunned at how little wear there was after they ran it 50,000 km and tore it down.

But racing continued to teach as Pro Thunder gave way to Formula Xtreme (FX) racing in 2005. It's those later lessons that resulted in the Buell XBRR engine.

The intent with the XBRR was to modify further the Buell XB engine so that in a slightly modified XB chassis it would be capable of competing in many classes, even against highly tuned Japanese 600 cc four-cylinder race engines – some of the most sophisticated powerplants in the world for racing. The architecture would again remain the same: a 45-degree V-Twin, four camshafts along the right side of the crankcases, air-cooling and pushrods, and two valves per cylinder. Many parts are shared with the standard XB, but there are fundamental changes as well.

First, a larger bolt pattern and a higher case deck height allowed the bore to grow from the 3.5 inches of an XB12 to 4.08 inches, combined with the short 3.125-inch stroke of the XB9 engine, giving a displacement of 1340 cc. The short stroke, along with advanced metal matrix push rods, titanium valves, and NASCAR valve springs, allows the XBRR engine to run to 8300 rpm and beyond. (While the rev limiter on production XBRRs is set at 8300, both the Warr's H-D/Buell team with Jeremy McWilliams and the Deeley H-D/Buell team with Steve Crevier used rev limits closer to 9000 rpm on standard XBRR engines at the 2006 Daytona 200; on Jeremy's bike, data logging registered over 9000 rpm for downshifts.) But perhaps the most vital changes were down in the foundation of the engine, in the XBRR crankshaft.



(A) The XBRR's lightened crankshaft features the XB9's short 3.125-inch stroke with a larger 1.5-inch crankpin, redesigned connecting rods, and lightweight short-skirt forged racing pistons. (B) A removable cassette-type gearset allows servicing the XBRR's five-speed transmission without splitting the cases. (C) The XBRR's smaller front primary sprocket and alternator rotor (bottom) reduce rotating mass compared to the stock XB counterparts. Ignition timing is controlled by a trigger wheel, not used on the production engine. (D) The XBRR's much smaller alternator stator is sufficient to provide for the reduced electrical needs of a race-only bike compared to the production stator (left). (E) An external gerotor oil pump driven by the camshaft gears replaces the stock XB-style pump, which mounts under the cam box to this unused boss (arrow) on the modified XBRR cases. (F) The XBRR's massive 2.250-inch titanium intake dwarfs a stock XB12's 1.800-inch intake. (G) NASCAR-style dual-valve springs replace the stock single conical springs to allow rev limits up to 9000 rpm and beyond. (H) Large domes and a 4.08-inch bore boost the XBRR's compression to 12.5:1 compared to the stock XB12's 3.50-inch bore and 10.0:1 compression.

CRANK IT UP)

Between the power and the rpm, the RR's crankshaft needed to cope with loads never seen before on XB engines. According to Gary Stippich, the Harley-Davidson engineer who developed both production and race engines for Buell until 2005, Buell racing engines have come a long way: "When we started running Pro Thunder, we were happy with 115 horsepower. Don Tilley and I were in competition, and we kept pushing the power up."

He describes reaching more than 135 horsepower at 8000 rpm in 2004 – but at the cost of crankshafts that seldom lasted even 100 miles at a Formula Xtreme pace. The XBRR needed to make at least 150 horsepower at the rear wheel, with the capacity to develop even more with development. It would need a strong foundation.

Buell delivered with a thoroughly redesigned crankshaft. The crankpin grew substantially, to 1.5 inches in diameter, stiffening the crankshaft immensely, minimizing the bending and flexing that occurs under the enormous power impulses that coincide with making 105 foot-pounds of torque. New rods were made of 8620 steel, their shape defined almost entirely by finite element computer analysis. Supporting the strengthened crank are a pair of Timken tapered roller bearings on the left side and a needle bearing running directly on the hardened crankshaft end on the right. The crankcases themselves were thoroughly analyzed by computer, and actually became lighter as unnecessary material was removed. Meanwhile, very selective strengthening was also undertaken. This modified bottom end became the rock on which a strong engine could be built.



SUMPING SPECIAL)

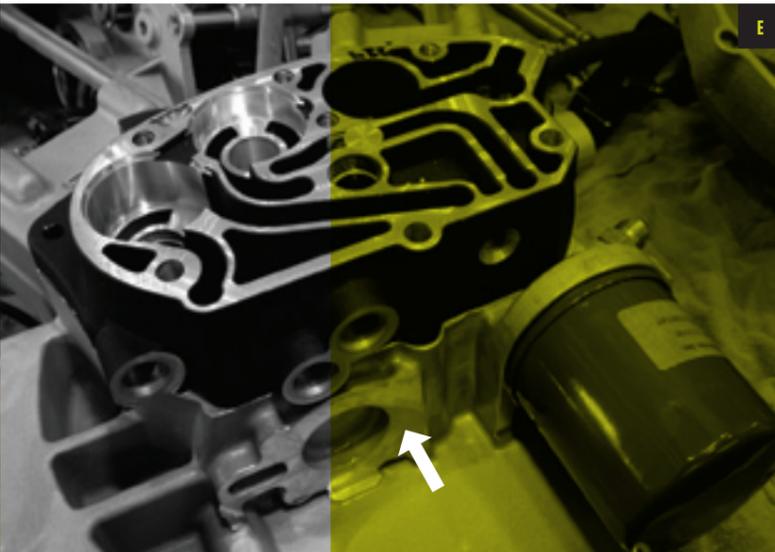
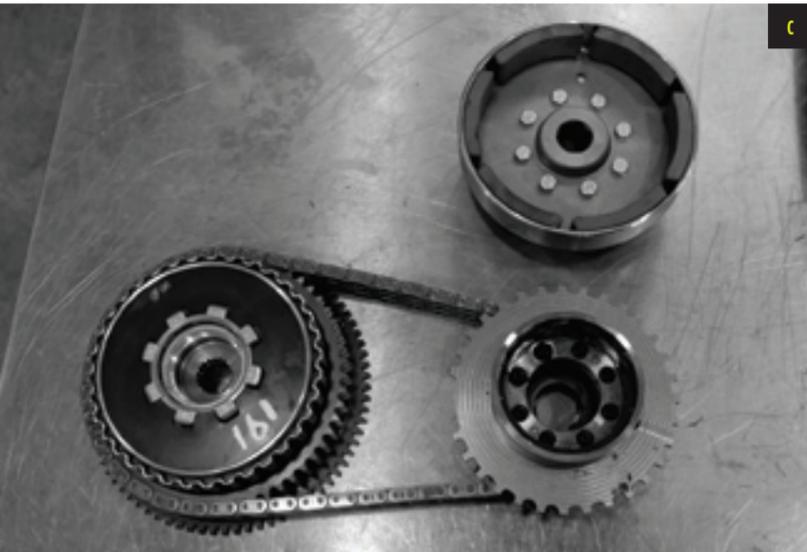
Along with the new crankshaft came a new oil system. Keeping oil in the crankcase sump – while getting it to where it wants to go – has always been an issue in racing versions of the Buell engine. It's much easier on a street engine, but when you add a few thousand more rpm, the crankcase pumping from the movement of really big pistons, higher oil flow requirements for cooling, and increased blow-by, it can be hard to scavenge all the oil in the system.

For the early XB engines used in FX racing, the solution was a three-stage Pro-Flow oil pump in place of the stock pump. With two very large and separate scavenge stages, the Pro-Flow pump helped keep the bottom end of racing engines dry. But it was also substantially larger than the stock pump, projecting out below the cam box. And it still kept what had been a marginal part in race engines: the screw gear pair that drove the pump.

So the new oil system drives two gerotor-style pumps directly from the rear cylinder's cam gears. The much larger of the two gerotors has two separate scavenge paths, one sucking oil from the cam box itself, the other scavenging the crankcase. Large external breather lines bring oil back from the cylinder heads to the crankcase, rather than draining back through the pushrods. Interestingly, the housing of the new oil system is one of the few die-cast parts on the XBRR; all other low-volume, XBRR-only parts are made from short-run tooling.

The XBRR engine breathes through individual intake runners and two-throttle bodies, rather than the Y-runner with single-throttle body of the production XB engine. The throttle bodies are huge, 62mm, and help flow enough air to support the XBRR's prodigious power output.

What are the limits of air-cooled, V-twin power for the street? Nobody knows. But it's an iron-clad guarantee that the amazing team of engineers Erik has put together at Buell will never stop learning from experience – and never stop improving on the foundational principles that make Buell motorcycles so special. **fuel**






DAN BILANSKY RIDES OUT THUNDERBIKE HIGHS AND LOWS

FROM SLIM TO NONE TO CHAMPION



The situation looked dire for Hal's H-D/Buell-Hal's Speed Shop rider Dan Bilansky. With just one race remaining, the team's money was virtually gone, and a championship seemed out of reach. He was third in the season point totals, but too far behind fellow Buell® riders Dave Estok (Veatch Motorsports) and Bryan Bemisderfer (H-D/Buell of Frederick) to have a reasonable shot at the title.

But then, not much had been "reasonable" about Bilansky's season so far.

Coming off a strong finish in 2005, the team entered the 2006 ASRA (American Sportbike Racing Association) Thunderbike season with high hopes. But the goal of taking the #1 plate suffered a setback with a DNF in the opening round, also at Daytona. Round Two saw Bilansky finish third at his home track, Road America. A win at Summit Point in West Virginia the following week, however, put the team back in the points hunt.

That's when disaster struck. Back-to-back DNFs in June (a crash and a mechanical failure) put the team in a big hole going into July, an "off-month" for the Thunderbike schedule.

"It was extremely frustrating," Bilansky recalls. "With no races scheduled, we had the whole month of July to think about things, and I wasn't even sure I wanted to continue. I thought about quitting, letting the stress level go down, then getting ready to start fresh in 2007."

What kept hope alive was knowing that the August schedule worked in his favor. With races scheduled at Barber (Birmingham, Alabama) and Autobahn (Joliet, Illinois) on consecutive weekends, he could run both events with a minimal expenditure of resources (including lost work days). And thanks to the downtime, they went into Barber with "two really fresh motors."

But misfortune struck again. During a CCS (Championship Cup Series) race they decided to run as a warm-up (and, hopefully, to generate some purse money), they lost the engine in the primary bike. The backup bike ran well, but they couldn't seem to get the suspension dialed in. So Dean Hagemann, the team's mechanic, swapped suspensions with the primary bike.

The result was a strong second-place finish, which they followed with a win at Autobahn. But even with the back-to-back top-tuos, the title seemed out of reach. Going into the season-ender, Bilansky trailed leader Dave Estok by a whopping 27 points, with second-place Bryan Bemisderfer trailing Estok by 11.

"We almost didn't go to Daytona," Bilansky says. "But we wanted to do right by our sponsors and get them the exposure they deserved."

That was easier said than done, however, as the team's 2006 budget was virtually depleted. If it weren't for the supplemental support of some loyal friends, family, and a few local businesses, the team might never have made the trip.

The weekend started off strong with a win in the CCS national Thunderbike race on Friday, which provided a good preview for Sunday's final. "The bike ran great," he says, "but it also gave me the chance to pinpoint a few things to adjust for the ASRA final!"

On Sunday, Bilansky knew he needed a win – and, most likely, DNFs from both Estok and Bemisderfer – to have any shot at the title. A strong start gave him the early lead, where he fully expected to be joined by Estok and Bemisderfer, as well as BMW rider Nate Kern, who had been running strong all weekend. But after a few laps, he was surprised to find only Kern pulling away with him.

"I didn't know exactly what was happening with Dave and Bryan," he says. "We had worked out a system with the pit board to let me know their status, but I was having trouble reading it. So I just kept plugging away."

By the halfway point, it had become a two-man race; Estok and Bemisderfer had dropped out. Bilansky would take the lead in the infield, Kern would take it back on the high-banks. Knowing that strategy was now more important than horsepower, Bilansky let Kern stay in front with about five laps to go, setting up a dramatic last-lap drafting pass for the win.

Following some last-minute maneuvering on the infield, Bilansky positioned himself perfectly going into the final turn, put himself in Kern's draft, then executed a textbook slingshot pass just a few hundred yards from the finish line. Those final few seconds of the race were the only time all season Bilansky held the 2006 points lead. But now he would hold it for good.

The results, however, were not yet final. As team members celebrated in Victory Lane, they learned that Kern was to be disqualified from the race for failing to report directly to tech inspection. That meant everybody else, including Estok, would move up a spot in the race results – and no one was quite sure what that would do to the season standings.

"It wasn't until about an hour later, while we were packing up back in the paddock, that they officially announced the final standings," Bilansky says. "Until that moment, I was pretty sure Kern's DQ was going to cost us the championship. Because that just seemed to be the way the season had been going."

In the end, when the dust finally settled, Bilansky took the season title by a single point over Estok.

Eight races, three DNFs, three wins: not the formula for a season you would draw up on a blackboard. But for Dan Bilansky, mechanic Dean Hagemann, and everyone who supported them, it all added up to a very memorable – if unlikely – Thunderbike championship. **fuel**

... BILANSKY POSITIONED HIMSELF PERFECTLY GOING INTO THE FINAL TURN, PUT HIMSELF IN KERN'S DRAFT, THEN EXECUTED A TEXTBOOK SLINGSHOT PASS JUST A FEW HUNDRED YARDS FROM THE FINISH LINE.

PHOTOGRAPHY: WENDY MELLINGER, BRIAN J. NELSON



XB12STT

MORE THAN JUST A PRETTY FACE

With the recent introduction of the Buell® Lightning® Super TT XB12STT motorcycle, Buell continues to expand and refine its lineup of sweet-handling, high-performance “streetfighter” motorcycles. While the three easy-to-customize white body panels have garnered much of the early attention, there’s much more to the Super TT than creative styling.

If it reminds you of other bikes in the Buell stable, take a closer look. You’ll see that some subtle, but vitally important, design and performance differences make the Super TT a unique machine. Combining some of the very best features of other Buell models in the Lightning line, the Super TT is perhaps the most versatile Buell model to date.



SEAT HEIGHT (inches, standard): Even with the added suspension travel of the Super TT, its seat is still within reach of those with shorter inseams. Plus, its narrow, flat, motard-style solo seat lets riders easily shift their body position as they flick their way through the urban jungle.

XB12STT	31.4
XB9SX	31.4
XB12X	31.8
XB12Ss	30.5

WIDTH (inches): As on the CityX, the Super TT’s wide, flat, cross-braced handlebars provide the extra leverage riders need for aggressive street riding.

XB12STT	32.3
XB9SX	32.3
XB12X	35.1
XB12Ss	29.7

RAKE/FORK ANGLE/TRAIL (°/inches): As on the Lightning Long and Ulysses, the steering head angle on the Super TT is more relaxed than the fork tube angle. This provides increased trail for more stability on rough and unpaved roads.

XB12STT	23.1/21.6/4.7
XB9SX	21.0/21.0/3.3
XB12X	23.5/22.0/4.8
XB12Ss	23.5/22.0/4.7

SUSPENSION TRAVEL (inches front/rear): The Super TT suspension system provides 5.63 inches of travel, front and rear. While it can’t compete with the Ulysses™ on rutted, unpaved roads, it’s a notch above the other models in taking on potholes, railroad tracks, and other urban disasters-in-waiting.

XB12STT	5.63/5.63
XB9SX	4.72/5.00
XB12X	6.51/6.38
XB12Ss	4.72/4.97

WHEELBASE/OVERALL LENGTH (inches): As with the Lightning Long, taller riders have plenty of room to stretch out. Its 54.0-inch wheelbase, while slightly longer than a CityX model’s (or a Lightning XB12S), is still relatively short, retaining the quick, nimble handling Buell XB models are known for.

XB12STT	54.0/81.9
XB9SX	52.0/76.2
XB12X	54.1/85.0
XB12Ss	54.0/81.5

TIRES: Like the CityX and Ulysses, the Super TT is shod with Pirelli® Scorpion Sync tires, which combine the best street sport and off-road tire technology available. They’re designed to shake off road debris, while still delivering a vicious bite in the corners.

XB12STT	Pirelli Scorpion Sync
XB9SX	Pirelli Scorpion Sync
XB12X	Pirelli Scorpion Sync
XB12Ss	Pirelli Diablo T



Lightning® Super TT



XB9SX
Lightning CityX



XB12X
Ulysses™



XB12Ss
Lightning Long