



**THE
CRASH
PAGE**

**HOW TRACTION CONTROL AND OTHER
ELECTRONIC AIDS ARE RUINING RACING**

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**RIDING BOULDER
MOTORSPORTS'
850cc DUCATI 749R
AMA FORMULA
XTREME RACEBIKE**

**HE'S CONQUERED AMERICA AND SEES HIS FORMER TEAMMATE
MAKING MILLIONS. NOW AMA SUPERBIKE CHAMPION**

**BEN SPIES IS HEADED
FOR MotoGP**

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**MICHAEL
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**RIDERS VERSUS THE
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REPRINT

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FX Rx

By David Swarts



I'm standing at pit wall along Miller Motorsports Park's front straightaway with Boulder Motor Sports Ducati Team Manager/Crew Chief Brian Sharp, Mechanic Jeff Leef and rider Marty Craggill, and we're waiting for Racing Editor Chris Ulrich to appear out of the final corner and complete his first flying lap of the 3.048-mile AMA course on the team's 848cc Ducati 749R AMA Formula Xtreme racer.

Knowing Ulrich can be a harsh critic of motorcycles at times and that he just finished riding his own 1000cc Superstock racebike for four days on the same track, including taking seventh in the AMA Superstock race, Sharp, Leef and Craggill are somewhat apprehensive. I do nothing to help their mood when I jokingly give them Ulrich's rating scale: Pretty Good, OK, Sucks, Completely

Sucks and Steaming Pile of Slag. They don't laugh and can barely fake smiles.

Then Ulrich roared by, tucked under the paint, throttle pinned, and the stopwatch read 2:01.9. "He just went fast enough to have qualified for the AMA Formula Xtreme race on his very first lap on the bike," I said. A collective sigh of relief was heard.

Ulrich rode the bike for a total of three short sessions during an APEX Trackdays event, got his lap times down to 1:57 (which, if repeated 13 times, could have earned him a top-10 finish in the AMA Formula Xtreme race) and did it all without changing anything on the bike except for the shifter position. This is not what normally happens when moto-journalists test front-line racebikes, but then again Ulrich isn't your typical editor and the BMS Ducati isn't just your average

racebike. And the story of how the BMS Ducati effort came to be is just as good.

Sharp, 35, previously worked for Advanced Motor Sports (AMS) Ducati's Jeff Nash, a New Zealander who won the AMA Pro Thunder Championship as a rider in 2000 and then won it again in 2002 as a team owner with Australian Kirk McCarthy riding and Sharp wrenching on a 748.

Fast forward a few years. The original AMS shop grew into an award-winning Ducati dealership and Nash then opened a second dealership in downtown Dallas, which Sharp was in charge of running. Sharp was then approached by a Ducati enthusiast and business investor from his hometown of Boulder, Colorado. The investor, whose name Sharp declined to reveal, asked Sharp if he would like to return to Boulder to open a high-per-

formance Ducati tuning shop. Sharp didn't have to be asked twice and packed up his wife and their three children and headed north to Colorado to open Boulder Motor Sports.

"We started off with getting the shop going," said Sharp, who with the help of his wife, Kim, runs the small but busy tuning shop, "and then we introduced racing into it as a way to promote it and kick the shop off. That's the reason you saw me at Daytona in October with Doug Polen."

Polen rode a Boulder Motor Sports Ducati 999R to win the CCS SuperTwins National Championship at Daytona, and with it a \$10,000 contingency award from Ducati. But to truly promote the shop, Sharp knew he had to keep racing, and AMA Formula Xtreme seemed like the perfect match.

"The AMA rules made sense

for us to race Formula Xtreme,” said Sharp. “I didn’t really see it as a viable option to race in Superbike this year, judging by what’s happened the last couple of years. They were going pretty good but not at the level where they needed to be. Then the AMA said, ‘OK, you can run an 850 (in FX) now.’ Just on paper it made a lot of sense, that we could be competitive with the 600s.”

Next, Sharp needed a rider, and he already had someone in mind, saying, “I used to work with Marty’s best friend, Kirk McCarthy. I sort of kept track of what Marty was up to. I saw that he was with Mat (Mladin Motorsports). I kept in touch with him. At Mid-Ohio, the last round (of 2006), I asked him if he had interest in doing something this year.”

In November of 2006, Craggill accompanied Sharp to Ducati Corse headquarters in Italy, where Craggill (a two-time Australian Superbike Champion and former World and British Superbike competitor) used his contacts to facilitate a support deal for the team. But after that trip, the racing team was put on hold while the final preparations were made to officially open Boulder Motor Sports in January. One month later, Sharp and his business investor had another meeting with Ducati Corse to finalize some details, and the race team was given its final green light.

“After that it was go, go, go,” said Sharp, who said he slept very little from that point until the season-opener four weeks later at Daytona. He had to finalize Craggill’s deal, purchase the ex-Parts Unlimited Ducati semi-truck and get it to Colorado, obtain three Ducati 749Rs (two that were ex-Ryan Andrews race-bikes, which were ridden by Doug Chandler before Andrews raced them, and one World Supersport-spec machine directly from Ducati Corse) and prepare the machines to go AMA Formula Xtreme racing.

Sharp says that increasing the displacement of the Ducati 749R to 848cc was very straightforward. “It’s basically taking

the stock 94mm bore pistons out and putting 100mm (Pistal brand) pistons (which are lighter even though they are larger) in bored-out cylinders,” said Sharp. “The cams are just the 749R kit cams. Stock rods. Stock crank. It’s essentially a 749R with bigger slugs in it.”

Sharp said he didn’t get baseline horsepower numbers when his bikes were still in 749 trim, but according to Andrews’ father and former Crew Chief Mark Andrews, their bikes made about 130-135 rear-wheel horsepower on a Dynojet dyno.

“We’re pretty close to the

150 mark,” said Sharp, who has done porting work to increase flow through the cylinder heads. “And it’s pretty broad. The torque curve is really good. It does tend to make more power up top. That’s where the cams work.”

Ducati recommends that a 749R World Supersport race

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(Opposite page) Chris Ulrich’s first flying lap on the Boulder Motorsports Ducati at Miller Motorsports Park would have been fast enough to qualify for the previous weekend’s AMA Formula Xtreme race. (Above) A pair of 100mm pistons brings the 749R’s displacement up to 848cc, and raises horsepower on a Dynojet Dyno from about 135 to about 150. Photos by Brian J. Nelson.

FX Ducati

continued

engine be torn down, inspected and rebuilt every 750 kilometers, or 466 miles. Sharp does this 20-man-hour task each time one of his six engines reaches 300-400 km, or 186-248 miles.

"It's more a preventative maintenance type thing," said Sharp. "I probably could go further on them. And honestly, when I've been pulling them down between 300 and 400 kilometers, the rod bearings and everything looks pretty good. But at this level, competing against the factory guys, it's something that you can't not do. You can't let it go and have it come back to bite you."

As far as the engine performance goes, the team is very happy. Peak power comes at 12,700 rpm and the rev-limiter kicks in at a conservative 13,000 rpm, even though stock-bore World Supersport 749Rs can be revved over 14,000 rpm. The team's only real engine concern is a pronounced dip in the mid-range, between 7000 and 10,000 rpm, which complicates gearing set-up and hurts Craggill's drives compared to riders on the the 600cc Inline Fours he races against.

"That's one of our major goals during the break," said Sharp, referring to the FX class not racing at the U.S. Grand Prix at Laguna Seca. "That dip tends to be where you're coming off the corners, so that seems to be where we're struggling a little bit. If we can get a little more power out of the corner it would help."

And to help diagnose and fix problems like the dip, the team first needs to get a full data acquisition system on the machine to monitor and record information while the bike is circulating the track. Currently the bike only runs a reprogrammed, stock Magneti-Marelli ECU, no traction control, no launch control.

"We have limited data, very limited compared to what we're competing against," said Sharp. "We should have some stuff here



Chris Ulrich found that the Boulder Motorsports Ducati 749R turned very well, easily finishing the corner. Photo by Brian J. Nelson.

by the end of July, a little bit more engine management stuff, some wheel speed sensor stuff, potentiometers on the suspension so we can really see what it's doing. But Marty's a really good gauge for what's happening. He's obviously very knowledgeable for what the bike is doing and what it needs, but to have the data helps a lot. Plus, in the future having data from some of these racetracks will help later down the road."

Even without data acquisition or any real testing, Craggill has been able to get his Ducati to handle very much to his liking and very unlike the hard-to-turn-or-transition reputation the brand has carried for many years.

"It was like that when I first got on it," said Craggill, who was 13th in the Championship standings with three top-six finishes and three DNFs after six of 10 rounds. "When I first rode the bike at Barber, which was the first time I got to ride the bike properly, it was like that. I was hanging off, looking around the corner but going over there (points away from the direction he is looking).

"I spent all day that first

Thursday talking to people with experience riding Ducatis trying to figure out what to do, and I was still sucking. Then I talked about it with someone else I respected in the paddock, and he said, 'It's a motorbike just like any other. It doesn't need anything special.' So we put set-up numbers from my Suzuki GSX-R1000 on there, and I instantly went three seconds faster than what I had been doing. I ended up getting fourth that weekend."

But it wasn't quite that simple, as Craggill admitted the crew had to sort through valving, spring rates and oil heights with the Öhlins FG700 forks and different steering head angles before they got the front-end set-up dialed. Lately, Craggill and company have been focusing on the rear suspension, using five different Öhlins shocks, each set up with a slightly different spec, to cover as much ground as possible in the limited amount of FX track time on an AMA weekend. Craggill added that the bike is also very sensitive to the position of the rear axle (wheelbase),

but nothing is holding him back more right now than that dip in the midrange of the power-band.

"We're trying to work that out," said Craggill, "because I'm finding where I've been losing the guys is out of the slow corners, where typically that should be a strong point with all the torque. It's good up top, and it's really good aerodynamically. When I get into someone's draft it sucks really well and slingshots past really well."

Another area the team has been working on is the clutch in hopes of improving Craggill's launches while still working at corner entries. "My starts haven't been great," said Craggill, "so we've been going backwards and forwards with clutch set-ups, spring rates and pack thicknesses. We're getting better." According to Sharp, they have also tried two different styles of clutches, a 12-tooth Ducati Corse unit and a 48-tooth clutch from STM.

Tires are a non-issue partly because the Ducati and Craggill are easy on tires, and partly because Dunlop only offers two choices, front and rear, each weekend. Typically, Craggill has been running the 3136/Medium rear, instead of the harder 3167, and the 758/Medium front, instead of the harder 336 choice.

The first thing Ulrich noticed about the Boulder Motor Sports Ducati was the seating position. "It's amazing. This is the first racebike I've gotten on that fits me," said Ulrich, who at six-foot-tall, is just an inch shorter than Craggill.

"I actually do fit on it very well," said Craggill, who uses custom clip-ons that are pushed forward, lowered footpegs and extra seat foam to get that fit. "I can get my knees in front of my elbows going down the straight. I couldn't do that on the Suzuki 1000. You would think it would be the other way around."

"The tach is all LCD, so it's hard to read a little bit," Ulrich said after his very short first session on the bike. "It took me the first lap to learn it's got a three-stage shift light—blue, orange, red and then you shift it. The shifter was a little low. I'm just trying to figure out the gears and all that stuff."

"The clutch has got a really heavy pull to it. And I almost stalled it coming out of the pits because first gear is so tall. I was having a little bit of a hard time (down) shifting it because it has such a heavy clutch pull. Upshifting is no problem, but the shifter kill is really sensitive. I kept finding myself hitting it. If you put your foot on it at all you're gonna kill the engine. It's got good power. It's got more torque, way more torque than a 600cc FX bike."

In Ulrich's second session, he got three flying laps of the long circuit, recorded a best time of 1:58.4 and came back to report: "So far it's pretty good. I'm still using my 1000cc braking markers. Like in Turn One, I know I can go past the four but I haven't quite got there yet. In a few other places, it seems like you have to carry a lot of corner speed on this. It's got decent power down low and all through the range, but sometimes the shifter is really touchy. And it doesn't like to shift if you're on the rev-limiter. It kind of weeble-wobbles when it slides. It has a bit of flex to it. The forks feel pretty good. The brakes are really powerful."

Craggill's bike stops with 310mm dual Brembo rotors grabbed by monobloc radial-

mount Brembo calipers with titanium pistons, Brembo pads and plumbed with a Brembo radial master cylinder. More than enough for the 363-pound machine (13 pounds over the class' minimum weight limit), according to Ulrich, who said, "It stops on a frickin' dime!"

"I just remember some other Ducati FX racers complaining

for the FX race at Miller. But the bike wasn't perfect, as Craggill had already said.

"If you get it down in second gear it takes it a while to get spun up," said Ulrich. "It makes all the power up top. It's got to be above 9000, or above 8000 at least. A lot of people say it has so much more acceleration, but talking to Marty,

Asked to sum up his experience with the Boulder Motor Sports Ducati 749/848R, Ulrich said, "This is not an inline Four. This is a Twin. You hop off an Inline Four 1000 and hop on one of these it's night and day. It's comparing apples to oranges, because you have to ride the thing so differently. I'm just now starting to push the bike into



The Boulder Motorsports crew, with Chris Ulrich at Miller Motorsports Park. (From left) Walter Trujillo, Chad Kemmerlin, Marty Craggill, Ulrich, Brian Sharp, Jeff Leef. Photo by Brian J. Nelson.

about his bike not turning," said Ulrich. "Maybe those guys need to go to the gym and lift more weights or something, because this thing is perfectly fine. It turns really easily. It finishes the corner. But then again I am still running off the (winning) pace."

"I think I saw 13,000 rpm indicated on the tach. It revs pretty high for a Twin, I think. It's fast down a straightline, 100%, it's fast. I know there's more time in it. You've just got to be on it. I'm going to try some new lines and shift points this next session and see what happens."

Ulrich's final session resulted in five flying laps (for a total of nine) and a best time—while negotiating trackday traffic—of 1:57.8, which would've qualified him 16th

he said the 600s pull him off the corners. I can actually see how, because you get on the gas and open the throttle and it gets to a certain rpm and then it just takes off. It's not really a hole. It's more a lag. It just takes a little while to get it wound up in second gear. But you can pick the throttle up so early on it. It's easy. In terms of performance, once you get it spooled up it goes. It's fast! It's holy crap fast for a 600.

"The biggest problem I have right now, I can run it in harder on the brakes, but I wasn't 100% sure I could get the downshifts done quick enough with the clutch. But the more comfortable I got with the clutch the easier it was to get the downshifts."

corners as opposed to what you do on a 1000—get it in there, square it off and fire it out. This thing you have to carry a lot more corner speed. I'm changing my lines and adapting to it, but it's such a different beast compared to my bike. I would need at least a day on it to get down to a decent lap time and then two or three days to be able to push with the front runners and be competitive. But it's definitely really nice. It's got a lot of potential." **RW**

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