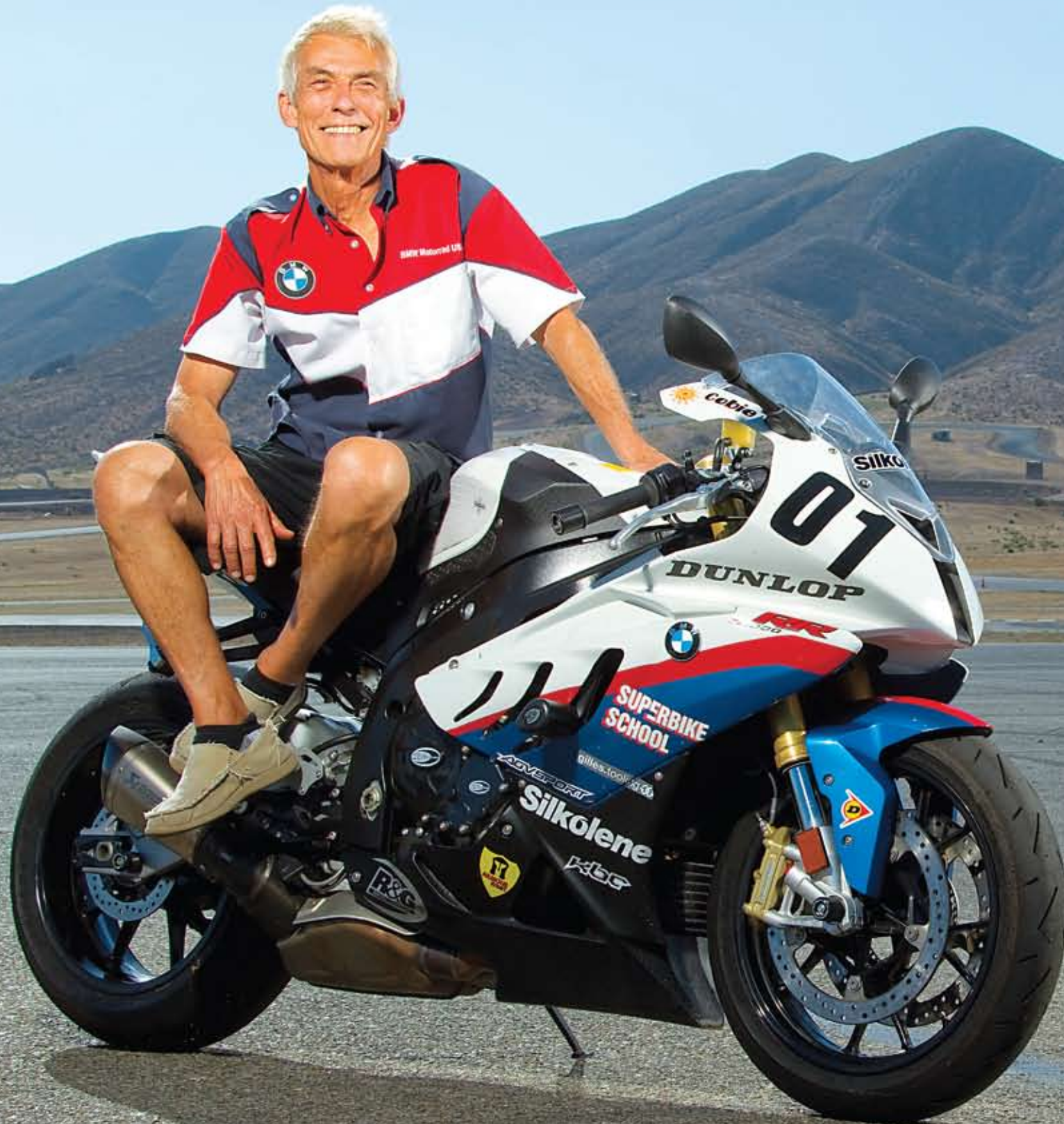


CRACKING THE CODE



Keith Code and his pioneering California Superbike School have continually evolved over 30 years to stay at the leading edge of riding schools

BY KENT KUNITSUGU
PHOTOGRAPHY BY KEVIN WING

BACK IN THE MID-'70S WHEN SUPERBIKE RACING WAS REALLY BEGINNING TO come into its own, an accomplished but looking-to-improve club racer by the name of Keith Code walked up to a famous professional AMA factory pilot and asked him a serious question about cornering technique. The pro rider's answer was a vague "just give it more gas and use less brakes". Hmm...not exactly a lot of useful information there.

A few years later, Code decided to start his own one-on-one riding technique school, and held one on a race weekend at the now-defunct Riverside International Raceway in California. "I was practically laughed out of the paddock," remembers Code. "That I was actually going to do a school, and have people actually read stuff. 'That's not the way to do it. You don't learn how to ride motorcycles that way.' The prevailing opinion was, you either had it genetically or you didn't have it at all. I just didn't believe that."

Here riding coach Lonnie Etter uses the lean/slide bike to help refine my hang-off bike position in left-hand turns, which the coaches found was different from my technique in right-handers. The lean/slide bike enables the coaches to quickly and easily see body position and make corrections in a fraction of the time normally required.



As founder of the California Superbike School—the first actual advanced riding technique school, starting with 10 Kawasaki KZ550s in the spring of '80—Code has watched that initial derision morph over several decades into dozens of rival riding schools across the country. Code was also the first to publish a book on riding technique in '84, appropriately named "A Twist of the Wrist", and followed that up with "The Soft Science of Roadracing

Motorcycles" in '86, and "A Twist of the Wrist II" in '94. Now there's a library of other books on riding technique out there—some good, some bad—much of it due to the relative ease of book publishing these days. His first Twist of the Wrist video back in '85 also broke new ground, and has been recently followed up with a Twist of the Wrist II DVD—although the cost and work involved with producing video has surely prevented a similar

onslaught of imitations.

I actually met Code way back in '81 during my canyon racing/learning days. He used to frequent the old Mt. Hollywood Drive canyon road in Los Angeles' Griffith Park (known to the locals as the "Backside", now long since closed) where I cut my teeth learning the finer points of performance riding, and I recall having a brief conversation at the Observatory parking lot where everyone used to gather. After some prodding by my riding buddies, I attended a California Superbike School at Willow Springs International Raceway in '84 as a prelude to my racing career; back then, it was the only "school" around, but it was an interesting and learning experience nonetheless.

Now I had the opportunity to attend one of his schools again...26 years later. How have Code and his California Superbike School weathered the proliferation of riding schools, the struggling economy, and the changing technology of sportbikes?

THE TECHNOLOGY OF RIDING

The hallmark of Code's CSS philosophy is that riding motorcycles is a technology, a science that is both hard (for instance, traction is the friction coefficient between tire and pavement—the same for everyone) and soft (how all World Championship riders think about and achieve it is different). "All through the '80s, I was trying to find out what the underlying technology



Utilizing the camera bike—which has a tiny video camera mounted high above and behind the rider—allowed the CSS coaches to diagnose a difference in my body position on left-hand turns versus right-hand turns. The camera's view allows the CSS coaches to watch ten different aspects of a student's riding, and easily point them out to the student on the computer screen. Code feels that this method is much more effective than a camera mounted on a bike following the student because all riding aspects are more easily seen without the distractions common to following views.

of riding was all about. I had some ideas, but I knew there was something else going on," relates Code. "There were no basic skills outlined. There was no 'you do it this way, you're going to get this result.'"

Eventually Code dissected riding into various aspects that could be identified and studied. And he honed the curriculum into a concept that got its first acid test when Kawasaki hired Code to work with a dirt-

tracker that they wanted to turn into the next roadracing superstar: a young Southern California kid named Wayne Rainey. "I did the same thing with Wayne that I did with all the students before I even started the Superbike School. He would come up to my house once or twice a week, we'd sit down with dictionaries and drawing paper, make drawings, create material, identify problems, and then went club racing."



Where most other riding schools follow the usual lecture-based classroom method (the instructor does his monologue, leaving the students to absorb the lesson one way or another), Code's teaching style is more akin to a social sciences college professor. Instead of spoon-feeding the information to the students, he asks questions to get the students more involved in order to help them think independently.



Keith Code's style of teaching involves more of a discussion atmosphere than a monologue lecture, in order to get the students thinking more about their own riding and applying the concepts, instead of force-feeding the information in the hopes that it will sink in.



My on-track riding coach James Toohey was typical of the CSS coaches: friendly, attentive, knowledgeable, and very helpful to each student's needs. CSS coaches must undergo a rigorous test regimen before they are able to instruct students.



Needless to say, the BMW S1000RR provides an excellent mount to learn riding technique on the track. Surprisingly, Code says the school's crash rate was cut by over half since they've been using the BMWs.



The panic braking bike—a BMW F800 S with outriggers to keep it from tipping over—allows students to understand what it feels like to get up to and past the point of front wheel lockup (note the tire smoke trail from the front tire). This helps break through what Code terms one of the many “barriers”; survival instincts that keep us from exploring our potential as better riders.

“I want to get some agreement that there’s a problem area, have some examples of things that probably happened to the students,” Code said. “Make something real by agreement that it’s a common experience. Identifying that it is a problem and why it’s a problem.”

One of the riding aspects that Code concentrates on is what he terms “the barrier—the survival instincts, our reaction

The lean bike also doubles as the infamous slide bike, allowing students to feel and learn how to properly deal with slides without the usual dangers involved.



to things.” He feels that most of the problems in a student’s riding arise from these survival responses. “Some of them are learned, and some of them ‘come from the factory.’ Sometimes just being able to identify it will help you. OK, we target fixate... why? Because we’re scared of whatever it is we’re staring at. A rider target fixates on the outside of the corner because it’s considered a dangerous threat. Why is he scared? Because he doesn’t know where his location is on the track. Getting reference points to locate himself on the track can help push him through that barrier. Or say the bike gets out of shape in a corner; what happens with the throttle? We have a tendency to shut it because in our instincts, the throttle leads to acceleration, and surely something horrible is going to happen. But getting an idea of the feel, a little bit of information about it gives a rider a target to shoot for.”

Another pioneering CSS philosophy used to help break those barriers (and now oft-copied by other riding schools) is the



This unique apparatus is called the “body positioning and alignment trainer.” It was designed by a Swiss CSS student who wanted to practice body movements on the bike when he couldn’t ride outside. The “bike” actually leans from side to side according to steering inputs at the handlebars; movements are pneumatically controlled via electronics.

usage of riding “drills.” In the Level One and Two schools that I took as part of a two-day camp, riding drills were part of every track session. In one session, it could be steering quickness, in another, vision skills. But the one drill the CSS is probably best known for is the “no brakes” drill.

“I started doing the no brakes drill way back because I could see from past experience and simple observation that the harder racers dragged the brakes, the worse it got as far as turn entry speed,” recalled Code. “You remember the old ‘coast racing’ days (where you’d turn the engine off, leave the bike in neutral, and coast down a road to see who could stay off the brakes and maintain corner speed the best); I went through corners so much faster than I ever did when I was charging into corners and braking at the very last second.”

Don’t get the impression that your day(s) at the CSS will be nothing but mundane riding drills on every track session. Each drill is a small—but important—portion of the overall riding lesson,



With the increasing number of women students in the school, the CSS is well-staffed with accomplished female riding coaches for those who feel more comfortable in that scenario.



The student/riding coach ratio at the two-day camps is kept to a 2:1 ratio, ensuring personal attention to each rider's needs. The coaches pay attention only to their students on the track, meaning that each riding session debrief is personalized to each student.

so you won't be spending your day weaving through cones or only riding a couple of corners at a time. You will get plenty of laps in, believe me; the two-day camp had eight 25-minute sessions each day, and there were quite a few students passing on the final one or two sessions on the second day due to exhaustion.

Yet another pioneering CSS method is the school's various specialized riding drill machines. The first (and probably most famous) is the "panic brake" bike, which consists of special outriggers on each side to prevent the bike from crashing. "I built the first one in '84," recalls Code. "It was so easy to see back then in the '80s—I'd go over to what was Turn 9 at Laguna Seca, stand there and watch people come into the turn and you'd see these very strange braking maneuvers. They'd charge into the corner really hard and then there were all sorts of weird moves and cornering lines; it was clear to me that there was no trust in the front brake. So for street riders I knew it would be a key element as well on the safety side, not just the track side of things."

Another custom-built riding drill bike is another outrigger-equipped machine called the "lean bike", designed to help riders get over their fear of aggressive lean angles, in addition to helping study and

correct a rider's body position when cornering. "Body position on the motorcycle really wasn't a discussed subject up until about the early '90s, and even then, it was more 'that's what this guy looks like, and that's what that guy looks like,'" recalls Code. Typical of his analytical approach to another riding aspect, Code began to delve further into the subject. "When I was doing the research for Twist II, and riding my 250, I started experimenting with it. I started to discover that there was a lot of information in there; things with the body and so forth. From a chiropractor, I got myself a skeleton and started getting all these references to read to figure out how do bodies work, what kind of alignment do they need, and then what're the actual physics of hanging off.

"Say I have my butt hanging off, but my body's leaning back across the tank; I weigh the bottom of my body and my top, and find out I just made a negative gain because I've got most of my body mass across the top of the gas tank. We started looking at all the other alignment points on the body; what do the shoulders do, arm positions, different head positions do? I could see that it worked...then I went, 'it's too hard to coach it.' You follow a guy through a couple of corners...then you gotta pass the guy, try to show him the

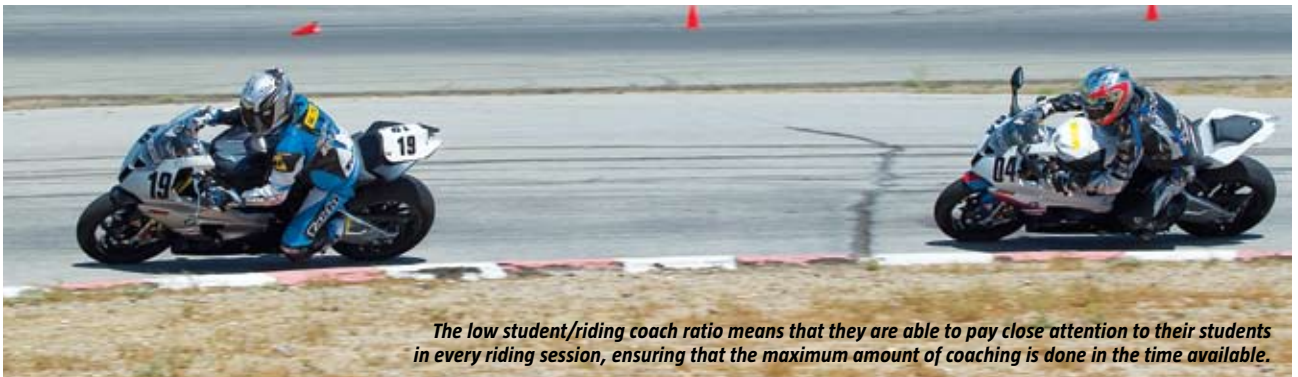
body language and all this other kind of stuff...it's going to take all day long to get that sorted out. I needed to build something where we could observe the students cornering and get a lot done in a short period of time."

The lean bike actually spawned another infamous practice machine—the "slide" bike, which is the same vehicle with different settings on the outriggers to prevent a highside. "We could make this thing to put people in control of being able to slide the rear wheel, or at least not panic when it does slide," Code said. "Which actually was the original idea behind the lean bike; bring them to the point where they could slide it, and then show them how to get out of it with the best possible chances of survival without the normal panic reaction."

OLD DOG, NEW TRICKS

Like most schools, the student/coach (as the instructors are called) ratio is very low, with our group having only two students per coach. And the coaches themselves must pass a rigorous series of tests to show that they can properly help a student—"a technology all its own," said Code.

Even though I was taking the basic Level One and Two courses, as always I entered the school with an open mind. Anyone who thinks they know all there is to know



The low student/riding coach ratio means that they are able to pay close attention to their students in every riding session, ensuring that the maximum amount of coaching is done in the time available.

BMW AND THE CALIFORNIA SUPERBIKE SCHOOL

It's pretty obvious that the BMW S 1000 RR has turned the sportbike world on its ear, with monster engine performance and sophisticated electronics that have set a new standard. But before the BMW's speed was ever proven, Keith Code saw the S 1000 RR's engine modes as an opportunity for an excellent teaching tool. And needless to say, BMW saw the promotional prospects as well.

Of course, the inevitable question is, how has moving from 600cc sportbikes to full-on literbikes affected the school's student crash ratio? Would the increased power result in more problems with novice riders? "Since we've switched over to the BMWs, our student crashes for the year have dropped by more than 50 percent," said Code about the somewhat surprising statistic. When asked for a possible reason, he replied, "It's hard to say, but I think it's because they're intimidated by [a literbike], so they're less apt to take chances beyond their skill set." Before some of you think that it's OK to buy a BMW S 1000 RR as your first bike however, when we asked Code if novice riders would learn all the aspects of riding just as well on a literbike than they would on a 600, he replied, "Well, not necessarily...it definitely depends on the situation."

The promotional opportunities have been fruitful for both BMW and the CSS. Once word got out that the CSS would be using S 1000 RRs as their rental student bikes (students can use their own bike if desired), CSS school dates quickly filled up to capacity; nearly all their school dates for the year are completely full, so you'd better act quickly if you want a spot this year. And many of the students have found the S 1000 RR experience to their liking; "About 70 percent of the students stated on their evaluation sheets that they plan to buy an S 1000 RR in the future."

about riding is fooling themselves. Every riding school I've ever done has taught me something new, and this was no different.

Another learning tool the CSS uses is the camera bike, which has a video camera positioned high looking down on the rider from above. This allows the coaches to view numerous aspects of the rider's

technique; and for coach Jason Paden (who I used to race with on 250s back in the early '90s), it allowed him to notice that my hanging off technique in right-hand corners was different from lefts. My lower half was hanging off, but my upper body slanted back toward the center of the bike, so I was sent over to the lean bike to



work with coach Lonnie Etter on my body position. About 20 minutes with Etter permitted me to find a position that allowed me to keep my lower body stable while hanging my upper torso into the direction of the turn without putting any input into the bars (I was previously gripping the left bar because I was using it to support my upper body weight). A few sessions with my riding coach James Toohey to fine tune the position, and I found that I was able to corner better and with much more confidence in left-handers.

The Level Three and Four courses actually deal specifically with riding position, so I'm looking forward to attending those to see what else I can learn.

BIKE TECH ADVANCES, RIDING IS THE SAME

The rapid pace of development in motorcycle performance and technology hasn't resulted in any average riding skill improvement, according to Code. "New riders don't make more or less mistakes on say, a '74 Norton Commando than they do on the new S 1000 RR—they're the same errors. The bike's improvements like stability, steering response, brakes and throttle may make them feel better initially, but the improvements did not make better riders. Because the riding technology is underneath all that; the underlying technical skills needed to ride a motorcycle haven't changed. The bikes got better, the tires got better, but there weren't huge changes in the average lap times of first-time guys at the school.

"Features like ABS and even traction control do provide a buffer zone of sorts to keep the over-enthusiastic types from committing a heinous error, but the basic skills need to be there." And it's the science of those skills that Code will continue to study and reveal to the rest of us. 🏍️

