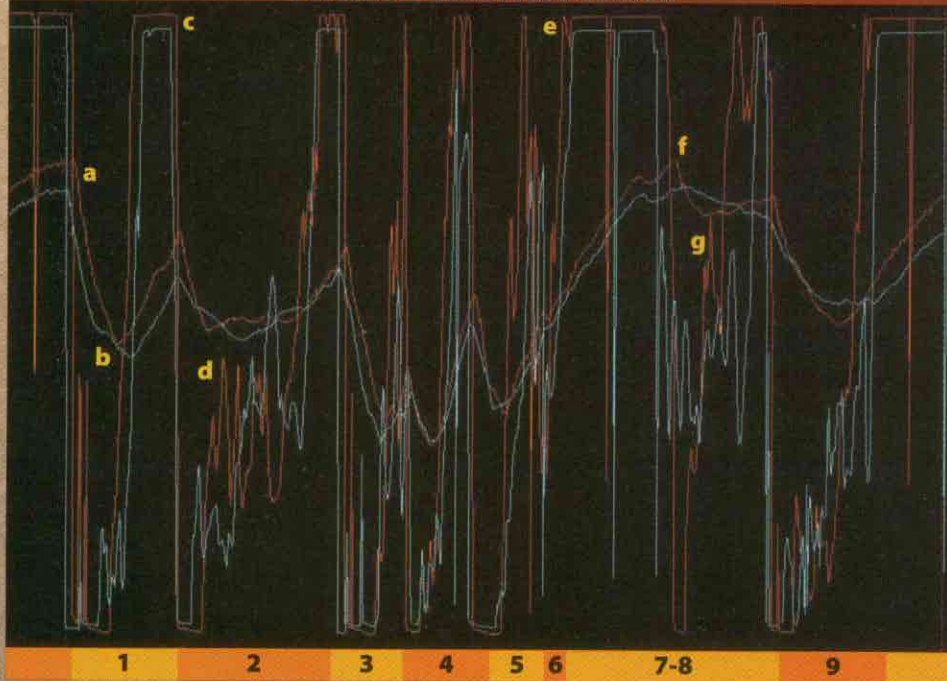


### SPEED AND THROTTLE POSITION

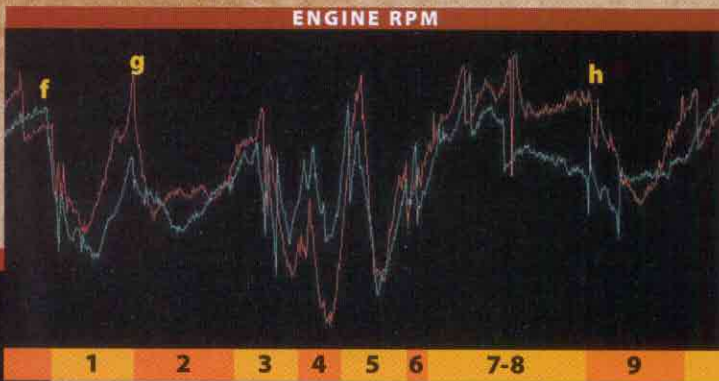
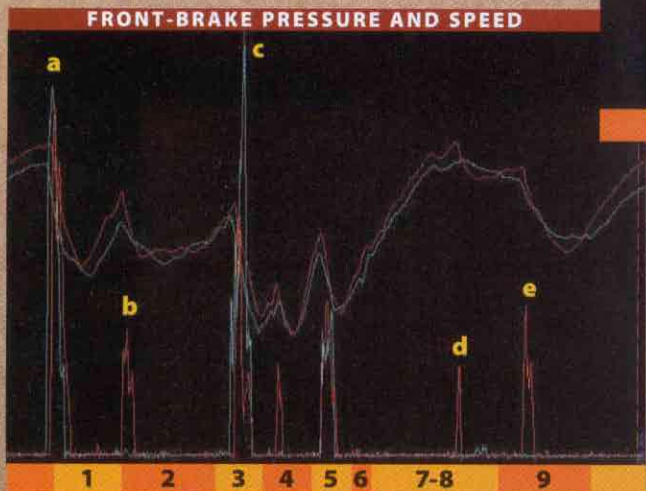
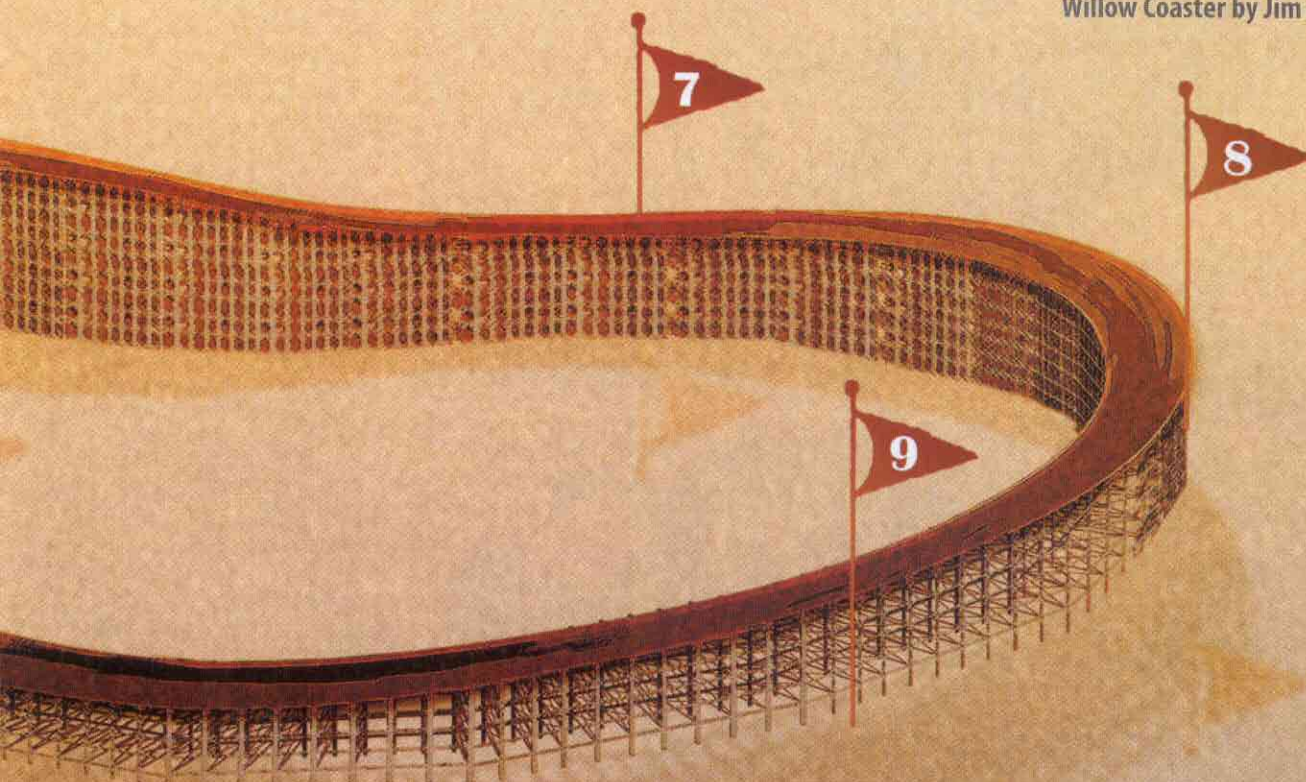


This graph represents two channels of information—throttle position and vehicle speed—for Gobert (red) and Boehm (blue), overlaid and indexed to the same piece of track. The traces with the big swings—very high, very low—are throttle position, with wide-open-throttle (WOT) depicted at the top. The shallower-amplitude wavy line is bike speed.

The speed trace shows how much more speed Gobert's carrying into Turn One (a). Gobert rolls past the apex four mph faster (b), then gets on the gas sooner (c) for the drive out. Gobert's ability to search for the limits of rear-tire grip is evident through Turn Two as he modulates the throttle (d), while Boehm has the throttle just cracked open to settle the bike and only gets on it when the exit's in sight. Down off the hill onto the back straight, Gobert is on the gas earlier and stays on it later (e), which gives him enough speed (f) that he needs to brake slightly for Turn Eight (g).

# WILLOW SPRINGS

Willow Coaster by Jim Hatch



Left: In this graph, the sharp vertical traces are front-brake pressure, again plotted with speed. On the entry to Turn One (a), Boehm grabs a fistful of brake while Gobert's using some rear to actually decelerate harder. Then, amazingly, into Turn Two, Gobie swabs the brakes (b) to set his entry speed—necessary because he's going faster. Entering Turn Three (c), The Butcher once again paws the lever much harder than Gobert. Braking into Turn Eight and Nine (d,e)? Yep, Gobert does and Boehm doesn't—again, he has to due to his higher entry speed.

Above: Here's engine rpm. Gobert is going so much faster down the front straight that he's able to use a higher gear (f). And that extra speed he's carrying into Turn Two equates to higher rpm (g) and more power for the exit. Finally, the transition from Turn Eight to Nine shows Gobert's harder charge as he holds a heap o' revs over Boehm (h).



Historically, Boehm goes ridiculously fast for a big guy (especially so when there's a Republican in the White House). Gobert was understandably not super-enthused about sharing trade secrets with the rest of the motorcycling world, but loosened up as he warmed up, observing that it's one thing to tell somebody how to cut a fast lap, and quite another for them to actually *do* it. Besides, Gobert reckons, the one or two competitors who might benefit most probably don't read much anyway.

In contrast, according to those tuners who've worked with him, Gobert is a thinking rider who knows what he wants from a bike and how to get it. He doesn't fall off much, either. And say what you will about his well-publicized personal problems over the last few seasons; the "Go Show" we know is a reserved-at-first but quickly friendly and polite young man who seems to have turned toward the light. It was tough, he says, to live with the sudden fame and accompanying fishbowl when you were accustomed to being a rowdy 20-year-old Australian kid much like all the others. Anyway, the puffy Gobert of before has been replaced by a lean, fit, focused version whose 180 pounds of muscle have him at a power/weight disadvantage compared with some other pilots in the 600 class—but not against 225-pound Boehm (a.k.a. "The Butcher"), and that's without leathers and a helmet.

Part of Gobie's Yamaha deal is that he race the 600 Supersport class as well as Superbike, something he was reluctant to do at first, thinking it would distract him from the premier class. That's changed. "Every time I've ridden it," he now says, "I've liked it. Everything's a bit lazier than a Superbike, but there's enough

He's a new man with the same old speed. Gobert has his hair combed and his act together for 2001, and with the formidable backing of Yamaha is expected to do big things. For starters he whipped The Butcher into shape, then went on to a double 600/Superbike win at Sears Point.

power to spin the tire, wheelie off corners...I've done enough laps to realize the fun potential is there."

Fun for Yamaha, too, now that Gobert's third place at Daytona—and hugely impressive double Superbike/600 win at Sears Point—have him tied with Honda's Miguel Duhamel for the 600-class lead.

On with it, then.

### Turn One

Not to overstate the obvious, but the reason Gobert goes so quick is because he rides faster nearly everywhere around the track.

"I take more car lines. Motorcycle guys tend to go in, stop and turn. I like to use the whole track and keep the corner speed up."

Not slowing down so much obviously leaves less speed to recover. Gobert rolls through Turn One four mph faster than Boehm. It doesn't seem like much, but it's actually equivalent to a person walking past you at a brisk pace. The other benefit of speed, made clear from the data system's rpm trace, is that more speed is equal

to more revs, and has the R6 further into its powerband—literally a vicious cycle. Not only does Gobert have big momentum at the exit, he also has more horsepower.

You can't really see it from the saddle, but the first corner has a pretty positive camber, and Gobert knows that makes it less likely he'll lose the rear end with too much throttle.

"I keep it out wide as long as I can before I tip it in...otherwise you wash off too much speed midcorner. Then I get on the power early and run it out to about a foot from the edge."

While Boehm tentatively gets the throttle open again, Gobert has already been at WOT (Wide Open Throttle) and is gone.

**BOEHM'S TAKE:** The differences between Pretend Racers (me) and Real Racers (Gobert) are apparent right off: Gobert is more comfortable on the bike than I, and way more comfortable riding it at its limit. His sense of traction—combined with his understanding of the bike's limits—means he can squeeze significantly more grip from the rear tire at the exit, and literally explode toward Turn Two. Conversely, I'm going "Ooohhh, ooohhh" through the corner, and praying I don't high-side at the exit. I'm a wimp.

### Turn Two

Carrying those four extra mph into Turn One, opening the throttle 20 or 30 feet sooner on the way out and pulling some 50 fewer pounds has Gobert arriving at Turn Two with nearly 12 more mph than Boehm. Look no further as to the reason why Gobert needs a quick tap of the brakes as he tosses the bike on its side, while Boehm simply shuts the throttle—eight to 10 feet sooner. Let that

be a lesson: No coasting! That quick brake-stab puts Gobert at the entrance speed he wants, and as soon as he's leaned over, the throttle-position trace shows he's aggressively probing for how much grip the right side of the rear Dunlop has to give, maintaining a pretty constant speed all the way around until he sees the exit, and "carefully" getting to WOT. Wait...Gobert, careful? The exit of Turn Two is bumpy, goes off camber and you can't see the edge of the track you're aiming for; it's an excellent place to high-side [*Burns knows this all too well!*—Ed.]. At Gobert-speed, even on a 600, "Soon as I get on the throttle," he says, "it [the rear end] wants to come around. You always have to be ready for it."



Go too fast around Turn Two, Gobert says, and you arrive too wide at the exit, which messes up the drive out and toward Turn Three.

Boehm, meanwhile, bleeds off speed until halfway around Turn Two, sees the exit, scares himself with a rear-wheel slide, opens the throttle again and cedes Gobert six mph at the end of the straight leading to Turn Three—130 to 124 mph. Boehm begins to realize he should've accepted Yamaha's offer to fit a stiffer rear spring



for his laps; as he picks up the pace, the bike squats too much in the rear, overloading and spinning the rear tire, and sapping front-end confidence, especially in faster turns such as Two.

**BOEHM'S TAKE:** Again, a superb sense of traction—and knowledge of the limit—are required if you wanna go fast here. I don't have

much of either, which is why I don't (or can't?) open the throttle sooner and get a better drive toward Turn Three. I'm also not as aggressive going in; Gobert goes in hard and then brakes. I just coast. I'm a wimp.

### Turn Three

Into Turn Three and it's time for some "crazy late brakin'" in Gobert parlance. "People don't realize how fast they can go in there; it's just like a big berm on a motocross track." Gobert's braking skill took a lot of U.S. riders by surprise when he first came to America; now his braking advantage is less apparent, largely because the latest youngsters are onto the benefit of using the rear brake. Gobert doesn't back it in as blatantly as, say, Nicky Hayden, but he definitely uses up rear pads. Hopping on the rear slows the heaviest gyro on the bike, keeps the rear end from rising (and the front end from diving), and makes *really hard* braking possible.

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Our boy Boehm is old school—taught to not use the rear, and doesn't like to. A massive squeeze on the front lever (250 psi of brake-line pressure) has him slowing no faster than Gobert as the Turn-Three wall of asphalt fills his face shield and he decelerates to just less than 70 mph. Gobert carries eight mph more speed into Turn Three, though, and arrives at Turn Four with that much more as a result.

**BOEHM'S TAKE:** Again, aggression (used correctly) pays dividends here for Gobert. He sees a wall of asphalt, a "berm," and uses it to his advantage. I just see cartwheels, flying fuel tanks and huge dust clouds. Here's the thing: I know I can get into Turn Three faster, but my right hand simply won't oblige. Controlling your extremities just *sounds* simple. Gobert's also smooth here (I watched him). It's one thing to be aggressive, quite another to do it smoothly.

### Turn Four

Having flung the bike on its side through Turn Three and pointed it up the hill, Gobert gets to full throttle for just a second driving up to Turn Four, gives a little tap of the brakes to slow himself to 69 mph around the top of the Omega, and gets back again to WOT driving down the hill. It's hard to get the throttle open going down there as it's bumpy and steep, but it results in an extra 10 mph before it's time to begin slowing for way-scary, downhill-then-uphill Turn Five.

The Butcher can't get WOT going up to Turn Four, nor driving down toward Turn Five.



**A.G. whipped up on other Australians in motocross and dirttrack for years before turning to pavement racing.**

JOHN BURNS

**BOEHM'S TAKE:** My excuses here are twofold: Turn Three goes off-camber (or seems to) at the exit (cartwheels again), and Turn Four goes off-camber and downhill (even bigger cartwheels). Funny how much fear for one's personal safety plays in all this; Gobert doesn't wanna get hurt, but avoiding pain and plaster is positioned lower on his personal priority list than going fast and winning. Me? It's right at the top. (Meet my wife Susie and you'll understand.)

### Turns Five/Six

Turn Five is the key that unlocks a fast lap around Willow, and in an effort to get it lined up just right, Gobert drops down to Butcher-speed. Or does Butcher pick it up to Gobert-speed? Either way, Gobert gets turned and back on the throttle hard and fast, spinning the tire to get rpm, modulating the gas until the tire hooks up, finally getting to wide open and holding it there. He rolls out of the throttle less over the blind (and humped) Turn Six as both ends of the bike unweight, drives hard to the edge of the track—scary!—and receives his

10-mph dividend over Boehm in Turn Eight—158 mph says the front wheel (optimistic, because Gobert's on the edge of the tire).

"I try and keep it really tight on the inside of that left-hander [Turn Five], and I shift a gear just before the crest, cut across, come over the hump already leaned over to cut across the ripple strip there. [The] closer I stay to the ripples, the harder I can drive it. I use all the track at the exit, run it all the way out to the edge."

Gobert then rides along the left edge of the track until boring straight into Turn Eight, ignoring the Turn Seven kink; the 600 isn't fast enough, he says, to need to set up wide for Turn Eight.

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Boehm's fast through Turn Five, too, but Gobert again gets the drop on the throttle, has fewer pounds to push up the hill to Turn Six—and has no wives or children.

**BOEHM'S TAKE:** Wives and children... see what I mean about priorities? Doing Turn Five/Six the Gobert-way is truly scary; running aggressively downhill into Five looks like certain death, and ripping over the crest of Six wide open while leaned way over is just asking to be thrown clear. Short-shifting just before the crest is smart (even I do it!), though if you don't do it quickly enough (like me) it's a moot point. Gobert does it quickly enough. It really is all about being comfortable on the edge of traction, which is impossible if the desire to do so and the will to practice it incrementally ain't there.

#### Turn Eight

Time to separate the men from the boys, then. Gobert has just given his R6 a good decarboning all the way through fifth and sixth gear, and carries enough speed into Turn Eight that he actually sees fit to brake a little—unheard of!—and downshift to fifth gear. Turn Eight is a Big Momentum corner, where you're mostly trying to make yourself small behind the bubble while keeping as much weight on the front of the bike as you can, and asking the tire, "Please don't fail me now." Ever drug a knee at a buck-forty? It's fast. Most of us are so fully occupied just surviving that we forget to open the throttle. Boehm's throttle is modulating in the half-open range nearly all the way between Turns Eight and Nine, and he is losing ground. Gobert, meanwhile, has fired into Turn Eight, shut the throttle completely and braked to a speed the tires will take through the corner (eight mph more than Boehm), and gotten back to WOT down the short straight into Turn Nine—more of a bent straight than a straight, really, at 150 mph. He be The Man.

**BOEHM'S TAKE:** Gobert's whole roar-in/brake/roar-out thing in Turn Eight mystifies me. I'd always looked at Eight in a *I'm-going-fast-enough-and-all-I-need-to-do-is-keep-my-momentum-up-and-not-lose-the-front-end-cause-then-I'll-die* sorta way—but obviously that's not good enough for the pros. Here's an actual (and honest) excuse: Having a too-soft spring on the rear shock slowed me a bit in here; the front end went vague and loose there while leaned way over, and I wasn't able to push very hard in a zone where you can really make good time if you do it right. Still, even with a better setup and more nerve (it takes a good combination of these two to really go quickly on the race-track), I'd only have gained a half-second or so, which still leaves me miles behind Gobert.

#### Turn Nine

Schwantzing up to Turn Nine, Gobert brakes from 146 mph to approximately 108 mph, while Boehm uses the air brake (his body) to coast down to the same speed

from about 138 mph. The Butcher didn't accelerate much at all between Turns Eight and Nine. Turn Nine has a slight positive camber and a dip at the apex. Gobert and Boehm both slow to approximately 107 mph as they enter it. Interesting to note that the two points on the track where our riders are closest are the two most important spots to get right, as those two corners—Turns Five and Nine—lead onto Willow's fastest sections, where the most time is to be gained. Both riders roll through the apex at the same speed, and then, for one last time, Gobert gets to WOT faster, his tailsection pulls impossibly away and there he is crossing the start/finish some three seconds ahead of our beloved Butcher—whose best lap of 1:27.5 is far from hanging around.

**BOEHM'S TAKE:** Turn Nine is really, really tough for me, mostly because you come ripping in at about a buck-forty and have to scrub speed and brake while increasingly leaning the bike over as you prepare to clip the apex for the drive out onto the front straight. As our similar apex speeds indicate, it's not difficult to go *through* the apex quickly, but to *enter the corner* quickly enough so five guys don't go flying past. The roar-in/brake/roar-out thing would work wonders for me here—if I had the refined sense of speed and traction Gobert does, or the *cojones*....

Racing, like life, is all about perception, and Gobert is fast because he keeps his head in situations where all around him have lost theirs. Is he braver than the next guy? Data acquisition can't measure that yet, but he doesn't appear to be scaring himself. Smarter? Maybe. By the way, Boehm covered 147 feet more to get around Willow Springs (due to less-precise lines), and he's been riding around it since Gobert was a schoolboy. (See, Gobert *is* smarter.)

**BOEHM'S FINAL TAKE:** It's hard not to learn something when you study someone as fast as Gobie. One of the most helpful hints came in the morning session, when Gobert told me that I looked "tight," and that I should relax. Sounds simple, but it helped. His advice to look "through" the corner helped too, as did some of his clues regarding certain lines. Watching him brake for—and accelerate out of—corners also really opened my eyes, though unfortunately they're feats I'll not come close to equaling in this lifetime.

So, can this stuff help you on the street? Sure. Learn to be smooth with throttle and braking inputs. Think more clearly about what you're doing—how hard you're braking for that possibly slippery corner. Know your limits, and become familiar with them so a sudden dangerous circumstance doesn't automatically erase your margin and punt you into your personal red-zone (or the scenery).

All in all a fascinating glimpse into some of the "hows" and "whys" of one of the best roadracers on earth. **MC**

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