Steve Smith's

Secrets of Online Setups

Don't Worry. Be Loose.

Steve Smith's Online Setups (6 kb)

"Loose is fast," says Michael Hausknecht, who ought to know--he's one of the faster online racers. And so it is. If you want to go fast, you have to learn to drive GPL like an arcade game, not a simulation. Don't believe me? Watch replays of the so-called 'aliens'--drivers so much faster than the rest of us mortals (also relatively faster, by far, than Clark, Hulme, Hill, et al.) that there's almost no point in going wheel-to-wheel with them. In real life, you couldn't drive like that: the engines couldn't take it, the trannies couldn't take it, the brakes couldn't take it, and most of all, the tires couldn't take it--the infamous "stab-save" alone would put you on square rubber within a couple of laps.

In real life, only Brabham attempted to dirt-track 1967 F1 cars, and even then not all the time...certainly not at Eau Rouge nor the Antoniusbrucke. If you want to win online races, however, you have to drive like that always, everywhere. Neat and tidy may cut it against the AI (who, for all their faults, drive *somewhat* like their namesakes), but if you want a podium finish against flesh-&-blood opponents, you have to master the controlled powerslide. And that means you need loose setups. You need to be able to hang the rear end out to dry when and where you want to, and not just put up with a permanently tail-happy setup that you can't manipulate from the cockpit. You need oversteer-on-demand.

First and foremost, you need a lower power-side ramp angle than the 85 degrees most of us started with (see my earlier comments on "60/60" setups). The lower the number (you have a choice of 85, 60, 45 or 30 deg.), the more closely tied-together the rear wheels are--the differential tends to lock up and act like a spool axle when you stomp on the throttle. In the lower gears, where you've got a lot of torque available, this will bust both rear wheels loose at once, and you get oversteer (as opposed to a higher number, where the axle is unlocked, and only the inside rear wheel breaks free, spinning without much effect). The number of clutches ameliorates this effect. A higher number of clutches will make the lock-up sudden and clunky, like an on-off switch. A lower number will make it smoother and more gradual. You can use any number from 1 to 6.

An 85/*/1 setup is the easiest to drive; a 30/*/6 is the hardest. I suggest you start with a 60/*/1 setup and progress toward 45/*/* for tracks like Brands and the Oesterreichring, 'patience' circuits where you're fighting understeer anyway...and where you need to kick the rear end out more violently. (I'll get to the missing * numbers in a minute.)

The single greatest impediment to controllable oversteer is the dreaded Papy Push. The tire modeling in GPL isn't perfect, and nowhere is this more evident than the front end's behavior at or near the limit of adhesion. This usually manifests itself as front-end 'washout' where the front tires break traction--you back off (to avoid buying the fence), the front end grabs, you nail the throttle, the front end washes out again, ad nausium--in a kind of lateral see-sawing effect. (N.B. This aberration is much less evident in N4.) Most of the effort in arriving at setups that will allow you to drive like Stevie Smith (no relation, sorry to relate) should be directed to minimizing the traditional Papy understeer. No less than 8 parameters have an effect on this: 1. The power-side diff angle (see above), 2. the coast-side number, 3. the number of clutches, 4. the shock settings, 5. the toe settings, 6. the brake balance, 7. the spring weights, and 8. the bars.

There are basically three phases to any corner (nit-pickers take a number). On the approach, you segue from straight-line braking to trail-braking (increasing steering angle, decreasing braking effort), rotating the car with the brakes to angle it into the turn. Then follows the mid-corner phase, before the apex, where you're usually off the throttle, sometimes on it, and sometimes balancing the throttle and the brakes together, in concert. Finally, there's the exit, where you're tying to get the car to "accept the power" (in the immortal words of Beta-tester Doug Arnao), giving it as much throttle as early as you can to fulfill the racing dictum "in slow, out fast.'

It's the power-off condition that concerns us here. With either a trailing (partially or fully closed) throttle, or a neutral throttle (the throttle cracked just enough to maintain a constant speed, but not

enough to accelerate), the coast-side ramp angle of the diff comes into play. As with the power-side settings, the lower the second diff number, the more closely the rear wheels are tied together. If all that mattered was straight-line braking, a spool axle would be ideal, because you can't lock up just one rear wheel and thereby risk looping the car. A */30/6 diff is like having ABS; braking distances are phenomenally short. You could even move the brake bias further toward the rear wheels (which are bigger than the fronts), giving you even more stopping power. There is, of course, a catch.

Unfortunately, a */30/6 diff tends to make the car *continue* in a straight line with anything from a neutral to a fully closed throttle, making it hard to rotate the car in the first phase, and hard to keep the nose tucked in during the second phase. In fact, you want exactly the opposite (at least in GPL): a totally unlocked rear end when you're not on the gas. This kills mid-corner understeer (GPL's bete noir), and moves us closer to our goal of controllable oversteer. I suggest you leave the coast-side angle at 85 deg. and the number of clutches at 1.

The shocks affect transitions. For instance, they don't control the total weight transfer, laterally or longitudinally, only the length of time it takes to get from one state to the other. When you turn in, it's usually a sudden movement. On a right turn, say, how quickly the orifices allow the juice to squirt from the lower to the upper chamber of the LF shock will affect your turn-in. If the shock is stiff in jounce, the steering response will be felt immediately, but the weight transfer may be so sudden that it momentarily overloads the LF tire (i.e., spiking outside the tire's traction 'circle'), causing it to wash out momentarily: the front wheels will feel like they have no more traction then Pluto on a freshly waxed linoleum floor. Thus, I recommend very soft jounce settings in front. Trickier to control (you don't have as much 'feel'), but you get less understeer. At the rear, I suggest fairly hard jounce settings, because when you mash the throttle, the rear end squats, unloading the front wheels, causing them to lose some traction. Harder rear jounce settings promote exit oversteer.

The rebound settings address a different issue. Unlike the jounce settings, which react to the weight of the car pushing down on that corner, the rebound settings only affect how easily (well, how quickly) the unloaded wheels drops back down on the pavement: the front wheels under acceleration, the rear wheels under braking, and the inside wheels when cornering. To keep the unloaded front wheels planted on the road under all conditions, I recommend fairly soft rebound settings. Finally, if the rebound settings at the rear are too hard, the inside wheel will tend to spin under hard acceleration, so I use this parameter as a variable, to set as much or as little oversteer under acceleration as you think you can handle.

Net-net? Diff settings from 60/85/1 or 2 to 45/85/1, front shocks from 1/1 to 2/2, rear shocks from 3/1 to 4/2. Overall, these soft settings will make the car feel wallowy. To tighten up the feel, I suggest you tend toward the high side of the spring and bar values. The springs should not be used so much as tuning aids as simply to hold up their corner of the car. Each of the cars in the game has about 60% of its weight on the rear, so about 60% of the spring weight should be at the rear: in the range of about 90-110 lbs. at the rear (vs. 65-85 lbs. at the front) for one of the lighter cars. Since the low power-side ramp angles will tend to make the car loose, you can go lower on the rear bar value to find some additional traction, and/or you can stiffen up the front. With some of my setups (see below), I have disconnected the rear bar altogether (the way some Indy car teams do on the street circuits, where they disconnect *both* bars and let the car roll freely, thus maximizing mechanical grip). The total bar weight (front+rear) should be in the neighborhood of 200-300 lbs.

This leaves toe and brake bias. A high amount of (negative) front toe will help the car turn in (the inside wheel pulls more than its own weight, so to speak, than with less toe-out). In real life, this would make the car squirrelly in a straight line, scrub speed off the top end, and wear out the front tires, but these penalties seem absent in the game. A high amount of (positive) rear toe will allow you to catch stupendous rear-end slides. I'd suggest -.100 to .-225 in. in front, and .000 to +.175 in back. Generally, the softer the rear bar, the lower the rear toe-in you want, to maintain the same balance.

Brake bias is tricky...and depends on how you drive. If you use the brake and throttle at the same time (as most online drivers do), you can move the bias forward from its normal position (56-58%), permiting deeper trail-braking without losing the rear end. It also allows you to shift the brake balance rearward with the throttle, somewhat compensating for the loss of stopping power caused by 'opening up' the coast-side ramp angle. On a track like Imola or Rouen, or a turn like Goodwood's St. Mary's, you want maximum stability, so the bias should be more forward. At places like Zandy's Tarzan or Monza's Parabolica, you want all the stopping power you can muster, so you move the bias rearward. I've seen everything from 52 to 60%, so use whatever you're comfortable with.

Follow these guidelines and you'll have oversteer that you control with your right foot (with a little

help, sometimes, from your left). It should neutral steer with a neutral throttle. It should have lift-oversteer if you go in a little too hot and need to tighten up your line. It should oversteer with anything from a slightly leading throttle to full throttle, depending on how much torque you have available for acceleration. It's not as easy to drive (read: hypersensitive) as a conventional setup because you have to re-educate your right foot *not* to firewall-it-and-forget-it once you're past the apex. In slower corners, you will have to modulate the throttle until the car is straight and true. But unlike static understeer that you apply with a wrench in the garage, this understeer is under your control.

I am not an alien. I'm neither a hot-lap specialist nor even competitive at Monaco or Mexico. However, I am a reasonably good test driver, because I can feel when a setup is right, even if I can't do it justice all the way around a track. I do favor the F2s because I feel that they're the best-balanced cars in GPL (and more realistic than the FDs), so I'm including a suite of F2 Ferrari setups (attached) which are designed as thought-starters for online wannabes. They're not easy to drive--oversteer is never easy--but they should get you used to loose. Give 'em a try and let me know what you think.

[There are a couple of other values that aren't affected by these studies and observations. You should still keep playing with the cambers and TPs to get the temps even across each tread. Slightly higher TPs will give less rolling resistance--good at high-speed circuits and, particularly, ovals. Lower TPs will give slightly more grip at slow circuits...although Monaco is not the place for a sloppy setup. And your gearing, experience shows, should be a little taller than the numbers would tend to indicate. The fastest online drivers always seem to be lugging the engine a bit, although I have no explanation for this. None whatsoever.]

--Steve