

GTS Winter Update III – Racecraft and the Start

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Greetings!

In my first of my GTS Winter Update letters, way back in October, I offered my opinion that there were really only three components to racing: (1) your driving skills, (2) your car, and (3) your racing skills. While there are volumes more ideas I might have covered on each of these topics, the first of my letters concerned itself with basic driving skills you could hone over the winter. The second concentrated on how to begin (or how to improve) the process of refining your car and its setup to make it both faster and easier to drive.

What I haven't talked about so far are racing skills or, more specifically, *racecraft*, a term I use to mean the way you can use your head to improve your racing results.

Racecraft

Have you ever noticed that some drivers consistently slip through traffic like it's not even there while others continually find themselves held up by cars they ought to be able to get past? Or, that some guys almost always pick up several places on the start while others seem to be driving backward through the field? Or, that some guys in slower cars can consistently hang with—and even pass—what are supposed to be faster cars, even on the straights?

While, of course, some of the differences in any of these situations can, at times, be attributed to luck and/or circumstance, I would argue that a much bigger part of each of them, in most cases, is due to racecraft.

So, how are *your* racecraft skills?

When you're out there on the track, do you find yourself dealing with competitors on the spur of the moment as you catch up to them? Do you routinely make your pass/no-pass decisions as a snap judgment at the moment you need to actually start the pass? Do you regularly find yourself catching other drivers under braking but then have a hard time ever getting past them? If so, I can say with some confidence that you're going to have a hard time chalking up many wins, at least until you improve your game somewhat.

Why? Because, while you're out there living on quick thinking and lightning-fast reaction times, there are other drivers, running more or less as fast as you, who are planning their moves many turns—sometimes many laps—ahead.

So, while you're busy playing a dozen quick games of Tic-Tac-Toe, these guys are playing a single game of Chess and, in the long run, the Chess-players are going to win more of the time. Not always, maybe, but *more*.

The difference between these two approaches is racecraft, a subject which can (and does) fill volumes. But, while the snows of late winter are still swirling, I thought I might take a few minutes to talk about one part of racecraft—the race start—and how the choices you make both before and during a start (or a re-start) can influence the outcome of your race.

It sounds obvious when you hear it but sometimes we forget that all you have to do to win is beat everybody else to the finish line. There's no rule that says you have to be the fastest. Fast doesn't matter. What matters is being *earliest*. Lap times matter for qualifying. *Position* is what matters for racing. Being in front is good, being in back is bad. Speed, except as it contributes to position, is unimportant.

Really, it's just about that simple. But, there's a whole lot more to getting—and staying—in front than just lapping quickly, and all of it begins long before the start. Or, at least, it should.

Plan the work, work the plan.

Do you leave the false grid with a plan for the first few turns of your race? Or, are you more likely to just wing it and react to what happens around you? If you're just reacting to the situation, I would argue that you start the race at a disadvantage to those of us who go to the effort of spending a little time *ahead of time* to plan our starts.

Before you leave the false grid—or, better yet, before you leave your garage—you should have spent at least a few minutes thinking about what you hope to accomplish during your race's start and, more importantly, *how* you hope to accomplish it.

Yeah, yeah, I know you want to do as well as you can, pass everybody you can, and keep from being passed yourself. Join the club. The problem is, if that's all you have in mind it's a little like saying, "I want to become a billionaire," without any particular ideas about how you're going to actually make it happen. It might happen, sure, but there's a lot better chance of getting the outcome you want if you actually have a plan you can at least try to follow.

That's how it is with race starts, too.

The start of every race is pretty deep into the Value area of the *Risk vs Reward Chart of Auto Racing*. The start is time you have the best chance to pick up the most positions in the shortest distance if you do things right but, unfortunately, it's also the time you have the best chance to *lose* the most spots if you don't.

Since the goal is to be first, not to be fastest, any positions you gain or lose on the start can prove to be critical to your ultimate finishing position, particularly if they are in-class positions. A little advance planning can help put you in a position to do better, on average, than you might have done otherwise and so, on average, you'll be better off than if you didn't. And, once again, like pretty much everything else I've discussed this winter, planning is free. It just takes a little thought on your part.

So what should you be thinking about?

To some extent, that depends on where you are on the starting grid. Your available options change as your starting position changes, so where you are gridded is an important consideration, but only one of many considerations you need to take into account. You should factor in things like...

- Where you are in the field. Are you at the front? On the pole? In the back? Somewhere in the middle? You have different options in each of these and, therefore, should have a different strategy.

- Who are your in-class competitors and where are they gridded? If they're ahead of you, what can you do to get closer to them on the start? What strengths of your driving match up to weaknesses in theirs?
- Who are the drivers closest to you on the grid—in front, in back, on the side—and what are *they* most likely to do? Are there things they can do to help or hurt you on the start, or things you need to be careful to watch out for?
- Are you going to be on the inside or outside of the track?
- What are the track conditions going to be? Dry? Damp? Soaking wet? Snow?
- Is it a single start or a split start? If it's a split start, is yours the first or second group?
- Do you know *all* the rules pertaining to possible start scenarios and have you given any thought to which might come into play today?

All of these can be factors in the plans you make for your start. Does every plan always work? Don't I wish. But a lot of the plans work at least partially and that's better than just winging it. And, having taken some quiet time to think through the options and the possible things that might go right or wrong during the start along with what your reactions to those possibilities might be, you'll be much better prepared to take advantage of whichever opportunities actually present themselves once the green flag finally flies (or, if you're lucky, slightly before).

Get ahead

Opportunity favors the prepared. Regardless of where you're starting, your overriding goal at the start should be to pick up at least a few places between the time the green flag flies and the first turn, hopefully without losing places to any in-class competitors.

The portion of track between wherever you are when the green flag flies to the first turn is, without question, the easiest part of any race track on which to improve your position. Once you're through that first turn, all the passing gets harder and it gets even worse after two or three laps when everybody has had a chance to warm their tires and the field starts to string out.

Are you good on cold tires? If so, you can make hay during the first few laps while those a little more tentative drive like they're on ice. If you're not good on cold tires, it's a skill you should work on developing. Try driving harder at the beginning of practice sessions rather than waiting for everything to get warmed up.

If you tip-toe through the first few laps waiting for your tires to get warm so you can throw down a few killer laps, well, I hope I'm starting behind you because you'll be easy to pass. Remember, it's not about going fast; it's about getting there first. You have to take the positions when they are available, and the time they are most available is early in the race.

Qualifying as your secret weapon for a great start

The ability to go quickly on not-quite-warmed-up rubber not only helps at the start of the race, it also helps during qualifying. That's important because, let's face it, the best strategic move you can make for the start is to qualify spectacularly well. With the mixed fields we run in GTS, it's sometimes possible to start with one or two rows of other-class cars between you and the next in-class competitor and that buffer makes it *much* harder for you to get caught early.

The only way to qualify spectacularly well is to have a clear track to do it on. You can't go really

fast in traffic. The problem is, if you are even moderately fast you usually won't get more than three or possibly four clean laps of qualifying before you start catching back-markers. And, once that happens it gets really hard to turn in a quicker time. So, if you have to wait three laps for your tires to warm up before you can put down a fast lap, you're going to have a lot fewer chances of qualifying well than somebody who can go hard from the start.

Very often my fastest qualifying lap is either the second or third lap in the session. And, unless the track is wet and likely to be drying (and, therefore, getting faster), I'm usually parked after no more than four or five qualifying laps. It's easier on the car and the tires and I know I'm not likely to do any better by then anyway.

So, the best thing you can do to start well is to qualify well. But what else can you do?

Know your position on the grid

I'm not just talking which number you're gridded at. I'm going to assume you already know that. And, anyway, that's pretty much out of your control. What I mean is *where* are you on the grid? On the front row? Bringing up the rear? And, who's around you? Where are the guys you're *really* racing, your in-class competitors? In front? To the side? Directly behind? Behind to the left? Two rows back and to the left? Which side of the track are you on?

Be specific because the answers to these questions can help determine what you want to do at the start. Let me give you a few examples (with visual aids, no less!) of how some of these considerations can factor into your plans.

Example 1: *Mid-Ohio, third row, class pole, left side, dry track, nearest competitor three rows back.*

This is one of my races last year. Here was my analysis before the start:

I'd had a spectacular qualifying time and, because of that, my closest GTS2 competitor was several rows back. That meant I wouldn't have a direct threat from anybody in-class on the start unless I did something really stupid. However, I was surrounded by GTS3, 4, and 5 cars, all of which significantly faster than mine on the straights so, if I wasn't careful, they would all leave me in the dust and I'd be back to racing with the GTS2 guys which, all things being equal, I'd rather not do.

The inside car on the row behind was a GTS3 driver I'd been stuck behind throughout virtually all of Saturday's race. My extra speed under braking and in the turns was never quite enough to make up for his power on the straights. But, I knew I was able to run faster laps, by half a second or more, when I had clear track so I wanted to do everything possible to keep him behind for the first few turns and then let my speed on cold tires build up enough of a gap he couldn't catch me when we got back to the main straight.

Scott Berkowitz was directly in front of me and I knew he would be aggressive on the start and go deep under braking so I figured I wouldn't have to worry about him holding me up. In fact, I reasoned, if I could stay close enough early I might be able to follow him through traffic in the twisties.

Starting inside Scotty was Chris O'Donnell, a GTS5 car but on his first-ever race weekend. I figured if push came to shove Chris, who was running as the only GTS5 car (and therefore, had no one to worry about losing out to) would probably give me room. If I could make it all the way up to him.

Being on the outside, I knew that the tendency for others would be to try to move to the inside as we got further down the straight and that, if the opportunity presented itself, moving left and going around a slower car, or line of cars, was always an option, particularly in the braking zone where I had a shot at making up some time on the faster guys.

I had a version of this plan in mind as we sat on the false grid and then, when several cars didn't show up and our grid shifted as we entered the track, I revised it to what I've described above while warming the tires and getting ready for the start. By the time we got close to the flag I knew what I was going to do.

You can see the actual start here: <http://www.vimeo.com/6178584>

I got a great start and Berkowitz was late to the gas. As you can see in the video I came relatively close to touching him but if you listen, you'll hear that I never let off the gas. I knew Scott's car was enough faster than mine to make up for my initial advantage and that I would need all the speed I could muster as we got further down the straight, so I trusted him to Get The Heck Out Of The Way.

While all the faster cars around me pulled away early (and started passing on the right from the row behind), I was able to late-brake the bunch of them and get back all those positions plus one more (almost two!) going into the right-hander at the end of the straight.

Bottom line, I picked up a place (on a "faster" car), beat the guy I wanted to keep behind me to the twisties and was running away while the rest of the GTS2 cars were fighting it out among themselves. Shortly after the start my flywheel broke and ended my race but the start was absolutely according to plan.

Example 2: Putnam Park, last row, on the inside, dry track, starting behind slower competitors, and with same-class leaders starting near the front of the pack.

This start is Sean Tillinghast's from last October at Putnam. After a problem in Qualifying, Sean was forced to start from the back of the field. Sean had a very fast car and had run the fastest GTS2 lap of the weekend (probably the fastest GTS2 lap in *history* at Putnam Park) earlier in the day. He knew he was fast but that he had to make up as many positions as he could quickly if he was to have any chance of competing for the class win.

Sean knew the rules, one of which was that as soon as the racing starts at the front, it starts at the back, too, regardless of where you are. He was watching the starter rather than the cars in front of him and was fully on the gas as soon as the green flew, well before making it to the apex of turn 10.

The video: <http://www.vimeo.com/6996309>

That early jump got him a few easy positions but his run down the front straight was foot-to-the-floor even as he put a couple of tires in the grass while completing a pass. He got four cars on the first straight but then kept at it incredibly hard, trying to get through the pack while it was

still not that far to the front. You can see how hard he is pushing on his cold tires and you can see how much it gained him. By the end of the first lap he'd already picked up 7 positions (including GTS3 and GTS5 cars) through smart, aggressive driving on cold tires. By mid-race he'd caught up to Brad Waite and myself, the class leaders, and his spectacular drive ultimately netted him a very close 2nd place finish.

Had he not had the plan (and the ability) for those first few laps, though, he may never have made it to the front. Had he waited around for traffic to thin or for his tires to warm he may never have made it to the front of the class. As it was, this was a great drive.

One of the pre-start decisions Sean made in that situation (I presume) was that he needed to be more aggressive than normal because of the distance he needed to recover early on.

Track conditions and your position

If you've driven in the rain at Mid-Ohio you know that the only line that gets you any kind of wet-weather speed is one that goes around the outside of the turns and, most importantly, stays off the high-wear coating that runs through all the apexes.

In a rain race there in 2008, I started 2nd in class to Scott Giannou, the Targa Newfoundland organizer and a very fast driver in the wet. Giannou was gridded on the outside of the row in front of me while I was on the inside. By all rights, his position was better because not only was he starting ahead, it also gave him the opportunity to pull left and go around the huge patch of high-wear coating in the turn at the end of the backstraight, leaving the cars on my side of the track to slide lamely across it.

Being pretty fast in the rain myself (but not quite as fast as he), my goal on the start was to find a way past him at the first turn so he would have to pass me on the track, which I figured would at least make him work for it.

During qualifying I spent some time studying the inside of the track at the end of the straight (in case I ended up having to start on that side...as I ultimately did) and discovered that if you went all the way over to the very edge of the track (on the right) you could make it all the way down to the apex before you actually had to get onto the slippery parts. In fact, because the patch was angled back toward the dry-line turn-in point, that meant the inside line of cars could actually go deeper into the braking zone before hitting the goo than those on the outside. The catch was, of course, that the outside line could go almost completely around the slippery part while the inside line had no choice but to go through it eventually.

Using that knowledge, my plan was to late-brake Giannou at the start and to get a little in front before hitting the goo. With luck, I would be in his way while my car was sliding through the slippery part (and until I got back to traction). From there, I hoped, it would be an even fight but starting with me in front.

As it turned out, it worked perfectly. Well...almost. I got a good start, pulled alongside into the braking area, then got in front under braking. As planned, I slid messily but nicely in front of him through the goo... only to have him lose control and hit me on the inside rear fender, spinning us both off the track. While getting knocked off the track hadn't been in the plan, the time I spent pre-planning and studying the track before the start had nearly paid off with a spectacular start I never could have made if I'd just run down in there without a plan.

Know the rules

More specifically, *know the rules and be aware of the current situation*. Last year at Putnam Park in the same race that Sean Tillinghast's video (above) is from, we were actually doing a split start in the Thunder group. GTS comprised one group with the rest of the Thunder cars in the other. GTS was the second start.

The first group got the green flag and started racing but because we were a bit too slow making it around to the start they had to go full-course yellow on the track so we didn't get run over from behind. That meant we didn't get to start racing our first time by and that GTS, technically, was starting under a full-course yellow. The GTS group continued around the track in our standard starting formation, two-by-two, until we got back to the front straight and, finally, the green.

I was starting on the GTS2 pole with Brad Waite (also GTS2) to my left. The two of us were the fourth row overall in the GTS group. Unlike everybody else in front of us (and me), Brad correctly interpreted the rules for the start and, because of that, got a terrific jump which nearly won him the race (a fuel pick-up problem mid-race let Sean and me past).

You can see the race in this video: <http://www.vimeo.com/6930567>

Brad is the white and orange car that gets nearly two rows ahead before quicker GTS3, 4 and 5 cars eventually get him back, but not before he totally smokes me on the start.

Looks like he jumped the start, doesn't it? He didn't. What he figured out that we didn't is that it didn't matter that we, the GTS group, had never seen the green flag. What mattered was that the other group *had* seen the green flag which meant that the race had been officially started. Therefore, we weren't working on a waved-off start, we were working on a full-course yellow. If both starts had been waved off, we would have had to wait for the green to go racing. But when the course is yellow, racing starts when the yellow goes down, *not* when the green flag flies.

Because he both knew the rules and was aware of the race situation, Brad got a spectacular jump on the rest of the group. That's very heads-up driving. While I was warming my tires, he was using his brain. Kudos.

So, it makes you wonder, how can you use the rules to your advantage at the start? Well, for one, if you're starting in the back you need to make sure you watch the starter like a hawk like Sean did in the earlier video. Your race starts as soon as the green flag flies (or, in this case, when the yellow drops), *not* when you finally make it around to the starter, or even around to the front straight. You are free to start passing as soon as the track is green, regardless of where you are. Catch somebody near you sleeping and that's an easy position to put in your pocket.

Take advantage of what you can

If you're starting on the overall Pole, you have opportunities nobody else in the group has. After all, you're the one who gets to set the pace speed. Have you ever thought about the pre-race speed being something you could take advantage of? It is.

I have a spreadsheet I always keep with me at the track which has calculations of the gearing of

all my closest GTS2 rivals. When I'm on the pole, and depending on who is closest to me on the grid, I use it to figure out a starting speed that will give me the longest in-the-powerband run before I have to shift, while putting the drivers I'm most worried about in an awkward-speed position where, if I get it right, they'll going a little too fast for one gear but a little too slow for the next one just as the green flag flies.

As the guy setting the pace speed, that's my prerogative and it gives me a little edge in getting to the first turn first (unless I blow the start like at Putnam, above).

The winnah and champeen...

No discussion of race starts is complete without a quick viewing of Scott Berkowitz's start at Mid-Ohio in August 2008. By my count he passes 15 cars between the green flag and the first turn moving, eventually, from 30th to second place.

You can enjoy it here: <http://www.vimeo.com/1574679>

If you made it this far (sorry for the length of this memo) and get only one point out of this entire missive, that point should be that there are ways you can improve your chances of doing better in race situations by improving your racecraft.

As discussed here, taking a few minutes ahead of time to rationally consider your options can greatly improve your chances of doing well during the Start phase of any race, and that is one (of many) steps in building your racecraft skills and moving yourself further up the finishing-position ladder.

I hope you have found this to be at least somewhat useful and, more than that, I hope you are hard at work readying that beautiful GTS car of yours for April's opener at Mid-Ohio.

See you on the track (in less than two months!),

Scott