

# **F1 2011 The Advanced Drivers Guide**

## **Going faster and more real!**



### **Introduction**

#### **A word on the purpose of this guide.**

The idea is to help you get faster, get to know the game better, get more out of it and have more fun and satisfaction. It was written to be used as an advanced resource additional to the standard user guide. It consequently does not deal with all items nor does it repeat items that are considered to be dealt with adequately in that guide. This guide is 100% unofficial and is not approved or endorsed by Codemasters. Although Codemasters did post the authors original 2010 Guide on their Facebook home page!

This is an updated 2011 game version of the original 2010 guide. The author had a great time with F12010 but the 2011 game is a big step forward. Better physics, better graphics, better AI, more interesting tyre model/strategy, much improved cockpit view to name but a few.

It is written for the driver who wants a central resource to help them get beyond the basics, improve their knowledge and insight and improve their performance and satisfaction in-game. This means gaining insights into the real world technique of racing, race-craft, strategy and car setups. It also deals with the specific in-game environment. It does deal with all race formats but its main focus is on the Career, GP and multiplayer environment. NB It was written post patch #2.

### **It is separated into Chapters:**

- 1) **Technique of Racing, Page 3:** How to actually drive a racing car fast and get good lap times.
- 2) **Race Strategy/Tactics, Page 13:** Qualifying, Tyre strategy, Overtaking.
- 3) **Online Play, Page 26:** What to expect and how to get involved, The rules of racing,
- 4) **Setups/Engineering and testing, Page 30:** How to get the car right for the circuit and conditions.
- 5) **Managing in-game. Page 35:** Game modes, Setting Difficulty levels, Assists and car performance.
- 6) **General resources, Page 43:** Other stuff you might find useful.

**Giving Credit:** I was inspired by the amazing piece called Racer Alex's advanced Formula 1 setup guide written by sim racer and author Eric Alexander which I have found invaluable in helping understand F1 engineering and creating setups. It forms the basis of the setup advice here with some minor additional game specific advice from the author.

Significant content, information and advice has been drawn from the Race Department website and the F1 2011 forums and my fellow league drivers. So thank you to all RD members who have put up posts to share their experiences and to help others. Much knowledge of the 2010 game and entertainment was drawn from Steve Stoops fantastic video series- "Let's play career mode on expert" and his multiplayer race edits. Steve has also proof read chapter 1 and kindly written a section which I have inserted as a link between chapters 1 and 2.

Another main resource has been Alain Prost and Pierre-Francois Rousselots' book "Competition Driving". Other Race Department drivers including Dylan Hember have assisted by reading the initial draft and suggesting improvements. Thank you.

Some excellent screen shots from the RD site have been used to illustrate the text. Permission has been sought from the original posters of the photos and where possible they have been credited.

Its only November 2011 and I confess I'm still in a rich learning curve and will probably update this guide in the New Year after doing some more racing. But for now there is nothing else online so best get this version up.

Happy racing see you on track.

David O'Reilly/ FigjamRACER

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## Chapter 1 Technique of racing



Ferrari with an early apex at Suzuka. Photo 007 Unlicensed.

### Part 1 Cornering

*"The maximum speed you will attain on a straight depends on your exit speed from the previous bend. This can be explained in simple figures: Exiting a corner at 125mph rather than 120mph gives you a 5mph advantage down the following straight. Supposing that the speed advantage remains constant after half a mile the difference will be .6sec or around 35 yards" ". Alain Prost.*

At the core of generating speed and good lap times is cornering technique. The crucial factor is corner exit speed. We will deal with the corner in three parts.

**1)Braking,**

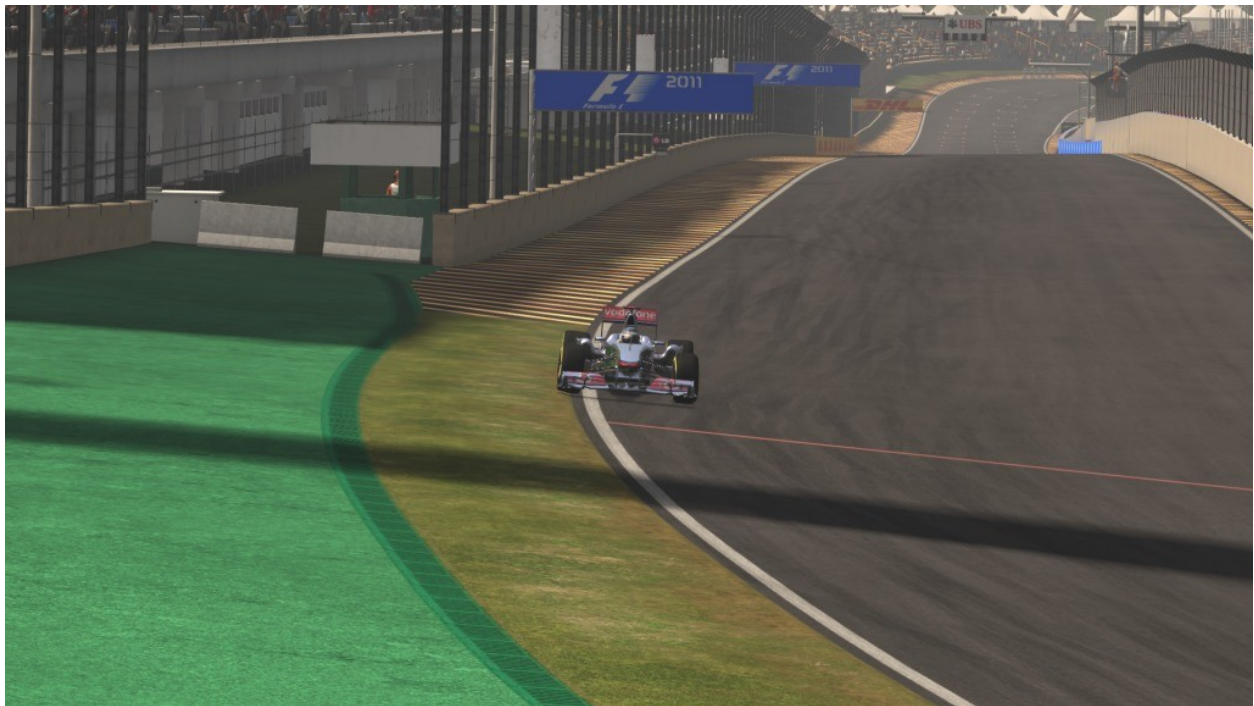
**2) Apex**

**3) Exit.**

**Summary:** Using all of the road that's available, braking at the right point, steering to apex, accelerating cleanly for maximum possible corner exit speed.

**Goal:** To generate the maximum possible corner exit speed.

- 1) **Braking.** You need to have established in mind a definitive braking point for every corner on the track for average conditions. Part of the purpose of the practice session is to find and refine this point. There will usually be a physical marker of some type on the track that can be a reference point. It won't always be a braking distance board. It may be an overhead banner, a tree, a camera, the start or end of a kerb or a point  $\frac{1}{2}$  way between two physical markers. You need to brake at the chosen spot and as wide (outside) as physically possible on the track to commence turn in. Your braking phase is complete when you are able to turn the car effectively (turn in point) to the apex. If you end up running a little wide of apex you braked a bit late, if you apexed a bit early you braked a little early.



McLaren turning in from widest possible point-for turn 1 Interlagos-Photo Scott Webber.

**Adjustments:** Your maximum possible corner speed and braking distances required to decelerate to that speed will vary due to changing vehicle weight and grip levels. Adjustments to this point will then be needed for fuel load, tyre type and condition and track condition. For example on your opening laps on primes and full fuel one may need to brake 15-25 metres earlier than your marker. In qualifying on low fuel or in the final stint on low fuel, fresh options and a rubbered- in track one might brake 10-15 metres after your marker. So a little mental arithmetic goes on after you have established a fairly precise point to adjust adding a few metres each for: "Green track", Primes , high fuel load, cold or worn tyres, wet track and deducting a few for a rubbered-in track, options, low fuel, fresh tyres. In this way the perfect braking point will migrate metre by metre lap by lap as such factors change.



“The front tyres steer the car far more efficiently if they are turning” David Coulthard. You really need to ensure that your braking is over when you start to turn in to the apex. The transition from braking to turn-in is managed best with a smooth transition from brake to feathered throttle. The car will understeer more on no throttle than with slight throttle. Your particular setup will influence the cars readiness to turn in on a trailing brake. In essence the goal is to achieve a balanced car that will be receptive to steering input. Still braking hard and the car will understeer, too much throttle too soon and the car will oversteer. *In Game note: You can get away with turn in while under brakes that would not be possible in real world physics.*



A McLaren about to kiss the apex nicely. Photo- Scrush

- 2) **Apex.** You can't get this part right without getting the braking right. You need to hit the apex with a car that is balanced and ready to accept the earliest and maximum possible throttle. The best way to achieve this part is to look to the apex as you are finishing your braking and preparing to turn in. This action alone will help manage a good transition from braking to turn in as you will see where the apex is in relation to your trajectory and when it's becoming "hit-able". In looking to the apex you will instinctively manage the release of brake and application of throttle. IE if you are turning in very well then you can afford more or earlier throttle (and more speed which will push you a little wider. If you are struggling to reach the apex (wide) then you are forced to delay the timing or extent of throttle application. *NB setup is critical to turn- in.* The better you have managed the braking and turn in phase the earlier and harder you can input throttle. This is where the axiom of "slow in fast out" comes from. The late braking manoeuvre only has the potential to influence your speed from that point to that very same corner! Corner exit speed will influence your speed from

that corner until the next corner! Quite a bit more influence really. *#The exception is overtaking where the need for track position supersedes the need for speed on that one lap.*

On choosing your line and apex: When having to compromise between the perfect apex for one corner or another in sequence of bends the golden rule is *“priority to the faster element”*. More is to be lost or gained through the faster section. This applies to a sequence of turns leading to a fast straight, the goal must be to optimise the exit onto the straight and work back from there making necessary compromises in the slower parts to achieve this.

As a rule of thumb when practising your line for any particular corner, start with a late apex and gradually move it back a few feet at a time until you find your exit speed is compromised adjust from there.

*In Game Notes remember that some rumble strips are deadly (e.g. some right handers in Marina Bay) and some look worse than they are (e.g. turn 7 and 8 Catalunya). On more user friendly rumble strips much time is to be gained by hitting the apex with your outside wheels IE whole car inside the apex except outside wheels.*



A Red Bull using all of the road and a little bit more at Spa F1 2011 Screen shot

“To operate at maximum efficiency, a driver should try to use all the space that’s available to him: the full width of the road- but also the rumble strip. So you have to make the circuit as wide as possible and sometimes a little wider”. Alain Prost.

- 3) **Exit.** The simplest and least cerebral part where you benefit from your good work in braking and apex phase. At this point you want to get the power down as fast as possible without breaking traction. The car will accelerate faster with minimum steering lock so once past apex allow the car to drift as wide as possible under throttle. If you leave track remaining unused outside you it means you could have carried more speed in corner or applied throttle earlier or harder or used less steering input on exit. All of these actions will net more speed. Exiting slow corners one must be mindful of avoiding wheel spin. This is because of the extra acceleration available in lower gears and the reduction in aero down force at lower speeds. In faster corners you can apply throttle more aggressively. The co-efficient of adhesion is higher than that of friction so wheel spin costs time. When dealing with throttle application a good mental image is that of a piece of string tied to the bottom of the steering wheel and your big toe. As you wind off lock your big toe is freed to apply more throttle. *Refer to an expanded piece on this skill at the end of the guide.\**

**Racing and balancing risk vs. return:** During a race when choosing/adjusting your braking marker it's good to remember that a few metres too early can mean a chance to get on the throttle earlier for a great exit and little is lost. Whereas a few metres too late and you are in all sorts of bother.



A Redbull uses all the track at Abu Dhabi. Photo: 007licensed

## Part 2 Overtaking



“Catching is one thing-Passing another” Murray Walker

Once you have developed pace through good cornering technique/setup etc you will find yourself with opportunities to pass other drivers. Different tracks produce varying opportunities to pass. Monaco for example is notoriously difficult to pass.

The overtake can happen when your competitor is pressured into a mistake allowing a clean drive-by but most times it will happen either in the braking zone or exiting a corner. If you have superior pace and are driving smoothly you may just get a better exit speed and pass on a straight possibly with DRS. Some battles for position are over before they really begin due to either one cars far greater pace or the others mistake. This section will deal with the more evenly matched battle.



Lotus applying pressure at Abu Dhabi

- i) **Applying pressure:** Your very presence and the noise of your engine and gearbox will make your competitor acutely aware that they are under pressure. Keep your rhythm and your smooth, fast racing line and hence maximum speed. This will inherently increase proximity and pressure. They will be aware that you have the pace to harass them and all but the best will tighten up a bit. You didn't get on their gearbox by accident! Avoid moves that will cause you to "prop" or brake hard where not desired.

Under brakes, the classic pressure move is to the move up the outside forcing the competitor to take the less optimum inside line AND brake late. This may compromise their corner exit speed and give you



the edge. A professional will know that most likely you can't drive around the outside of them but it's often worth a try to force the error.

The dummy pass: Dive out to the inside late in the braking zone as if you were able to pass. It's hard to tell from in front whether the attempt is real or not and he may be tempted to brake late. If not intending to pass get back in quickly to the racing line before the turn in point.

- ii) **Setting up for the pass:** The smaller the performance gap between the competitors the more you have to prepare your move. You will have a period of time (sometimes several laps) to observe where the competitor is less comfortable than you are. It may be due to setup, tyre choice and or condition (strategy) or driving style/skill. Try to establish where in the lap this is.



Battle for position. F1 2011 Screen shot.

**Alain Prost on disguising your hand:**

"The more composed your rival seems to be at a given point, the better it is to make him believe that he's not really going that quickly and that you are looking to pass. On the other hand if there is a spot where you really are quicker its best not to give the game away. Delay playing your ace in order to take him by surprise." Alain Prost.

## Part 3 Defending.



Lotus/Renault defending at Turkey. Photo Phil Ciborowski

**A few rules of thumb.** Most of the time it's wise to:

- Be aware of but don't start watching the competitor more than the track and your brake markers.
- Make your competitor drive around you. It's much harder to get a pass around the outside.
- Don't compromise your exit speed entirely with a defensive line.
- The slower the corner; track position vs. line increases in importance.
- The faster the corner; line vs. track position increases in importance.

A further word on braking. It again is critical that you have in mind a clear sight picture of your braking marker and the corresponding adjustment for that phase in the race. Many drivers will lose a place when, in battling for position they brake in a very different spot. Just because you are in a duel for position the laws of physics and the tried and tested braking points you have established do not change. One race driver coach puts it this way. There are three braking points: 1) One that you can depend on lap after lap for smooth consistent laps. 2) One that you will use on a low fuel qualifying lap, 3) One that you will use on an aggressive overtaking move to gain track position and happily sort out the exit to the

corner once you are in front. If you find yourself in a braking duel and you arrive at #3 then you should brake. Don't wait for the other guy to brake. You can give him a wave as he disappears into the scenery. IE he won't make the corner. If the competitor brakes after your final point, you will more often than not re-pass him/her during or just after the corner. If not sideways, off track or worse they will be so busy trying to slow their car and get it back on line to negotiate the next part of the track they will lose speed. What can you then do? This is where the over and under comes in.

- a) **When defending in a medium to high speed corner:** The high percentage move is to stay very wide and brake well, yet again focussing on your corner exit speed. By letting the other car pass you at a higher speed but on a less optimum inside line their exit is inherently compromised. In many cases you will simply drive past accelerating on the racing line past them as they drift wide under brakes past the apex. There will be times they pull it off but only a minority.
- b) **When defending in a low speed corner:** Track position becomes more critical than momentum and hence line and overcooking it is a mistake that is more easily overcome. If someone puts their car in front of you it is easier for them to get it back under control and defend. Position your car somewhat more to the middle of the track but where you can still get a decent line to the apex. Ensure that you hit the apex.

**In a series of corners** your tactic (a or b above) will be dictated by the exit speed of the corner. High exit speed use a) above, slow exit speed exit speed use b) above.

**Defending: KERS and DRS.** You need to be very aware of the DRS detection zone/s and activation zones. Your goal in defending is to ensure that the attacking car is 1.0+ sec behind you at the detection zone. You may want /need to use mix 3 (even just for part of the lap) and KERs tactically, saving it all for the sector B4 the detection zone to achieve this. If you are not successful and the driver gets a DRS run on you it's not all over. Take the inside line accelerate as hard as you can use mix 3 and any KERs available and make them drive around the outside of you, not always easy e.g. turn 1 Melb. He may be running more wing than you, may have used excessive fuel to catch you and need to back off, tyres may be on the way out so fight on! In attack you may choose to lift slightly so as not to pass just before the detection zone. In defence you may choose to let the attacking car slip under you just at the detection zone so as to fight back with DRS. Canada is a case for this as you then have 2 DRS zones.

## **Part 4: Steve Stoops thoughts on linking technique to race tactics.**

*Steve wrote this contribution for the 2010 game but it remains valid in the authors view.*

Firstly when it comes to adaptation, it's not just related to fuel levels and tyre degradation. We're not pro drivers, we'll have lapses of concentration, miss our braking points slightly, apply throttle too early, turn in too late, even when not in an on track battle. The key in race situations is consistency. It's of little use to have blistering one lap pace setting pole after pole but never transforming those in wins. Too often I see very fast drivers make too many mistakes come race time. They may be a few tenths per lap



faster but I'll still end up in front of them in the end as they then lose 5 seconds due to one big mistake in a lap. IMO this is because they are so fixed on setting fastest lap after fastest lap fixed on the optimal line, the optimal braking point that they can't deal with variations. You won't always have the exact same line on every lap. The key is to live with your mistakes and mitigate them so there is minimal time loss. A race is as much about endurance as it is about one lap pace. I usually drive a little below the limit (say at 90%) during most of the race, only to push 100% (what I like to call: "Hanging my balls out of the cockpit") on occasions where taking the risk of making a mistake is warranted. IE in and out-laps, tight battles on track, edging out a gap or closing someone down. Don't just race like a madman every lap, pace yourself, know when to push and you will finish higher.

2. Related to point one: Gears. Learning a track and finding the optimal cornering speed to me is as much about knowing which gear I'm in, and hearing how high the revs are as I'm going for the apex. With time you'll instinctively feel when you're going too fast into a particular corner, and have time to correct it before it is too late. EG, I know I should be in 3rd gear, medium revs going into this corner, however I'm coming in too hot as I hear that though I'm in my usual 3rd gear the revs are too high as I approach. A quick downshift to 2nd gear and/or perhaps a little added braking 'pump' will still let you make that corner and lose minimal time, as opposed to going with the flow, running wide on corner exit and losing much more time and/or risk losing a position in race situations. This is obviously also linked to point 1: adapting constantly, accepting you won't always have the ideal line no matter how hard you try and practice. Living with unavoidable small mistakes, minimizing their cost to you when they do occur (and also making sure they occur less frequently as explained in point 1 with regards to pacing yourself) is another key skill in my opinion.

## **Chapter 2 Racing Strategy and Tactics**

### **Part 1) Tyre Strategy**

Over the season there are 4 types of dry tyre available. The race organisers will choose two of them for a particular race. The option tyre is the softer, grippier one of the two supplied for that race and is therefore faster but lasts about 1/3 less than the prime tyre. You are required to use both types during the race. Simple stuff isn't it? Let's review the implications and choices.

In-game tyre life in 75 and 100% distance is based on the 100% wear rate. 50% and less is based on 50% wear rate.

Your setup and driving style will impact tyre life slightly but the biggest influence appears to be fuel mix. Remember you need to deduct your qualifying laps (including out and in) laps from predicted tyre life. The difference in lap times between prime and option normally varies in a range from .5 sec to 1.0 sec

and will depend on set up, driving style and fuel load.



Virgin pits from options stint for primes Marina Bay. Photo Cougar888

**General notes on Tyre Temp:** 1) Even if you select “flying lap” to leave the pits both Primes and Options are quicker on their second timed lap by up to .5 sec! 2) Pit stops. You tyres will be cold on exiting the pits with a severe impact on handling. They will warm gradually over the first 1.5 laps. Recommend bringing up the temp graphic in the OSD on your outlap to monitor and remind you. The author selects fuel mix 1 B4 entering the pit lane and uses it for the out-lap to make it easier to manage the tyres and save fuel and. 3) Watch tyre temp under safety car to be alert for any grip issues on restart. Again recommend selecting mix 1 during this period and until tyres are warm again even if engineer Ed (Milliband) suggests mix 3 on restart.

**Starting on Options:** If you are starting on the option tyre the qualifying laps are a significant part of tyre life. If you do 5 laps in qualifying, then often and especially on the red super soft tyre in 50% distance, you start on tyres that will be on their way out after 4-5 race laps. Up to 50% of tyre life potentially used in qualifying! There are tactical choices that could reduce this impact. You could warm up for a few laps and then pit for fresh options for 1-2 hot laps (3-4 total). Or wait till 5 mins to go before your hot laps. Or do a few laps on primes then 5 mins on options.

**Starting on Primes:** Because the primes will last about 50% longer, the impact of qualifying on tyre life is reduced. Your strategic choice on tyres will decide when you are fastest and for how long. The authors early testing indicated (certainly at Melbourne) that the speed differential between Primes and Options was much less on a high fuel load than low fuel (.5 sec vs 1.0 sec on low fuel).

It will also be driven largely by your outright pace. If you are fast enough on the primes to run with the leaders in the opening stint then it can sometimes work very well. Even if say 4<sup>th</sup>-5<sup>th</sup> on the grid if you can hold them to say 10 sec lead the options runners will pit at less than 1/3 distance and you will pass them while they pit (especially nice at Monaco as they are dropped back into the melee). You then will have a lead of say 10 sec or so and clear air with them also on primes. At the next pit stop cycle you will pit, they may well pass you but you will return to the track on fresh options and a bit more room to fight with them possibly on primes. Be aware that in a 75 & 100% race that the option runners will have twice as many laps to build a gap before pitting.

Starting on primes can help if there is a chance of rain. The options runners will pit for primes at below 1/3 distance. If that rain comes between the pit windows for option and prime runners the prime runners will only stop once (for the wets) options runners will have to pit a second time for the wets.

**Drop a stop or not?:** Unlike in F1 2010 where the default strategy was a 1 stop it is (subject to race distance and tyre types offered) now a 2-3 or even 4 stop The engineer is usually a bit conservative with tyre life and generally an adjustment of a couple of laps on each planned pit stop can move you from 2 prime stints to 2 option stints. Reducing by a stop or not is often now the real choice to be made. You may consider dropping a stop but it depends on length of pit lane, your relative pace, your improved pace on fresh options (and the fresher primes) versus the extra laps on both worn primes and options and your relative position in the race. EG If your pace is good and you expect to be able to handle worn tyres you may consider doing so. All other things being equal the time gained with the extra laps on the options (never more than 1/3 race distance!) needs to equal or exceed the time spent in the pits.

**Example calculations:**

a) Track A: Full race distance 44 laps. Pit stop total time 25 sec.

Speed differential Option vs. worn Prime =2.0 sec.

Speed differential Option vs. worn Option=1.5 sec

Average of above is 1.75 sec

Maximum option laps is  $44 \times .3 = 13$ . So  $13 \times 1.75 = 22.75$  sec. sec minus 25 sec.= Net loss 2.25 seconds. It's often very marginal and the choice will be impacted on the dynamics of the race.

**If you are making the extra stop:** Your pit stop strategy needs to maximize the useful life of Options and minimize Prime use. No sense running primes as long as possible and then having less options laps than available.



**Throttle Map and Tyres:** Higher mix levels will increase tyre wear so spend fuel and rubber when you most want the pace. You may even decide that you want mix 3 for the primes stint on a 2+ stopper as you are going to hand the tyres in early anyway. **Eking out some extra laps on worn tyres:** Set throttle map to 1, on worn tyres you're less likely to spin out than on mix 3 the softer throttle map will increase tyre life a little. Use mix 1 on outlaps and during and after safety car periods on cold tyres.

### Summary of key 2 and 1 stop tyre strategies

Strategy	Requirements	Pros	Cons
Options-Primes-Options	None	Faster in qualifying and stint 1 and 3. Retain choice to 1 stop if req'd.	Slower in middle stint.
Primes-Options-Options	Need good pace on primes.	Jump options runners at 1 <sup>st</sup> cycle. Faster in final 2 stints. If rain occurs between option and prime 1 <sup>st</sup> pit window you will save a pit stop. Miss some opening lap drama.	Slower in qualifying Slower in stint 1. Early broken wing can lead to strategy change.
Prime –Prime- Option	Need good pace on primes.	Good tyre condition all race.	Less option laps.
Options-Options-Primes	None	Faster in qualifying and fastest in stint 1 and 2.	Time spent in 2 <sup>nd</sup> stop. Locked into 2 stop. Slower in stint 3.
One stop	Good driving skills on worn tyres	Save time of 2 <sup>nd</sup> pit stop	Vulnerable to attack on worn tyres at end.

Notes: Tyre life is impacted significantly by fuel mix and somewhat by setup, with very high spring settings, and toe in settings having the most detriment. You have to start on the tyres with which you did your fastest qualifying lap. So tyre strategy is dictated by what you do in qualifying. With a wet qualifying and dry race you can start on either dry compound and they will be 100% fresh. You will do a lot of race laps on primes (and high fuel). Your practice and setups should reflect this.

## Part 2) Qualifying

**Preparation:** You can rehearse qualifying in GP mode to your hearts' content. For optimum personal performance you should do qualifying practice sessions on primes and options as well as wet qualifying. You can sometimes get a stunning qualifying result just because you are the only one to have practiced and saved a wet setup. For qualifying practice use the RedBull car in GP mode as the online cars basic HP and grip is based on its.

As a guide for your progress in setups and qualifying practice- Legend AI pole time is most often no more than 1.5 sec or so slower than the fastest human players.

Remember to have dry and wet setups stored. While other drivers are groaning about a wet qualifying and adjusting their dry setups you can simply click "load" set your fuel load and hit the track.

**Once in the pit in qualifying session:** It should be a simple case of load the appropriate setup, adjust fuel load and hit the track. However before doing so check the weather forecast for race day. If it's dry qualifying but 100% chance of rain for the race you might as well qualify on the options-you won't need to start the race on them! If there is say 25- 70% chance of rain then consider the strategic flexibility of starting on primes. Remember to adjust your fuel load if desired. The less fuel the faster you will be.

In Multiplayer remember how long out and in laps will take. There is no "flying lap" or "return to garage" option in Multiplayer you have to drive out and drive back in.

**Warming up tyres and brakes:** The better you warm tyres and brakes the faster your hot lap will be. Weave where possible to build heat in tyres and do some extra braking. Options will be pretty good after 1 lap but better after 2. Primes in my view definitely need two warm up laps. Leave throttle map on mix 1 while you do this and also if you have to abandon a lap because of a mistake or blocking. It's possible to gain an extra lap this way and you may want that fuel for a final hot lap at the end.

Watch for drivers who are on hot laps whilst doing your out/in and warm up laps. Pull off the racing line after a corner and slow down, you'll thank them for reciprocating another time.

As you approach your 1<sup>st</sup> hot lap switch throttle back to mix 3 before the last corner and use all your **KERS** to get the best run to start/finish line.**DRS** needs to be explored. The more its open the faster the lap will be unless you open it in the wrong place!



Virgin pushes the limits in Canada. Photo Cougar888

**The “Banker”:** You will push braking points, line (including kerbs), early throttle application and DRS to the limit on a 100% qualifying lap. Consider putting a banker lap in at say 97% speed just so you have something reasonable on the board in the event of your 100% commitment laps not working out. Qualifying times involve risk and return. Just say for example you can on a great (but risky) lap do a 1m:25s which will get you pole. But you also know you can put in a 1.25.8 with relative safety. P4 might require for example 1m:26.5 – 1m:27.5s depending on the standard of driver. A 97% lap might net 3<sup>rd</sup> on the grid with say 1m:26s. Best have that in your back pocket when you start the attempted 100% laps. Look for enough space in front and slow to get room at the end of the warmup laps if required then go for it. The author prefers to mute his headset on qualifying laps for concentration, its personal preference, others leave sound on.

**Wet Qualifying:** The track will frequently get faster during wet qualifying so take 7-8 laps of fuel. Depending on grip levels consider doing 1-2 laps on cruise mode, 1-2 laps on standard mode if there is enough grip then switch to fast mode doing as many laps as possible as grip improves and tyres heat up and fuel load drops. Pole position in wet qualifying often goes to the last man hot lapping!

**Changeable Qualifying:** There seem to be two trends in-game. Either a) dry track getting worse or b) wet track getting better. For scenario 1 get out there ASAP on options. There may be time for only 1 hot lap before all grip is gone. Make sure it’s “a banker”. For scenario 2 treat as per wet qualifying but check with 5 mins to go if dry tyres will work.



In wet and changeable qualifying, test grip levels with steering and braking, don't rely on what you can see. Sometimes the grip/times possible defy the apparent heavy rain depicted graphically in-game.

**Abandoning a lap.** If you are on a hot lap and make a big mistake or are slowed by traffic before say sector 3 and your lap will not improve on what you already have, consider backing off, selecting mix 1 and setting yourself for the next one. Be aware however that sometimes a red (slow) sector 1 can still occur in a fast lap. So don't back off just because you are say .150 or .250 down at the end of sector 1. You may have found more speed in 2 and 3 that will win this time back and more. Few laps are perfect and 2 great sectors will outweigh 1 that is just slightly "off".

#### Specific Qualifying Fuel loads for Tyre types

Tyre Type	Fuel Load	Reason
Option	Lightest 4-5 laps	Intended speed, plus the wear rate means need to conserve them.
Prime	Medium 5-7 laps	Longer warm up, less wear=more laps.*
Wet	Highest 7-8 laps	Improving grip.
Inters	Highest 7-8 laps	Improving grip.

The primes will give you the chance to get into a nice rhythm and build your pace if that's what you need\*

**AI quali pace:** Remember that the AI quali times are database generated and don't always reflect their race pace. You will often be faster in the race than AI that have out qualified you. So don't be disheartened.

### Part 3) The Race Proper



Massa pulls a nice gap at the start, Monaco Photo Phil Ciborowski

**Opening Laps- Multiplayer;** With full fuel loads and cold tyres the car will, relatively speaking, resemble a fuel tanker in terms of acceleration/braking and cornering. Especially lap one. The first goal must be to keep the car on the track. In the excitement, frenzy and perceived opportunity of the close proximity racing of lap 1 even very experienced drivers will make mistakes and run off the track. Often half of the field will have an off track excursion on lap 1. This means that if you don't you will win places. A good first lap can net you as many as half the places above you. There is however risk as well as opportunity in this particular phenomenon as these people will rejoin the track in the strangest ways. Allow plenty of space for braking and turn-in especially after long fast straights. In the authors view a tidy first lap will win out more often than a brave one. Allow plenty of extra braking distance (15-25 metres). You will smile as you drive past an apparent garage sale or lawn mowing convention on the grass.



McLaren and Renault pay for opening lap error. Photo Cougar 888

Grip levels build gradually and fuel levels drop and after 20% race distance the handling will have progressed significantly. For example in 50% distance you will be within 5 sec of qualifying times by lap 10 on primes.

**Opening Laps: Racing AI;** Here it is different. The AI will often be a bit tentative into the first lap on cold tyres etc and slow significantly for corners. Unlike in Multiplayer where we show respect you need to muscle your way past. It is often possible to make say 5-6 places in lap 1 then find the others have come up to speed. There is about 1 lap to take advantage then the ones ahead of you will be at a good pace.

**Early stages:** Your objectives in the early stages will vary a bit depending on your strategy and relative pace. If you are on options you need to use them: ie get clear of slower runners and build the gap for your inevitable early pit stop. If you are on primes you may be happy to stay in touch with leaders and wait to pounce at the first pit stops. At any rate you need to get into your rhythm adapt to the track conditions and fuel load and build your pace. You will possibly start to get a feel for your race situation. Are you battling for the lead or perhaps lapping consistently with gaps in front and behind you. You may be dealing with being out of position due to poor qualifying or a first lap incident that will impact your original strategy. No matter what get into your rhythm and build your pace. "Anything can happen and probably will" -Murray Walker. People in front can crash, lose wings, get drive-throughs, get disconnected.





Ferrari(Alonso) builds a gap in opening laps F1 2011 Screenshot

**Middle:** Be aware of what the drivers you are racing for position are doing. Have they pitted for primes at 1<sup>st</sup> stop (can you attack them later)? Has someone lost a wing or had a drive through? Sometimes such things will drop someone from “up front” back into the fight with you and you need to be ready to race them for position. Just because they are “faster than you” doesn’t mean it’s not a legitimate fight for position. Only in a blue flag (lapped) situation do you need to let them through. Otherwise they have to find a way to pass you so race them! Also be ready to change your strategy. A lost wing might mean you pit a few laps earlier than planned for a tyre change, can you make them last till the end? Do you need to run primes twice to get home with 1 more stop? Or if you have used both types is it a chance to grab fresh options for the run home.

**Closing stages:** Approaching 2/3 race distance you will have an idea of gaps in front and behind you. If you are running a prime-option-option strategy this is where (in the second pit stop window) you must be fast to pounce. How are your tyres and those of the drivers you are racing? If your primes are getting worn and the driver behind is pulling you in relentlessly on fresh tyres. (you on options-primes strategy and he on, say primes-options) do you need to pit for fresh options to cover him? Is the driver in front slowing (worn tyres) is it time to pressure? Is the challenge from behind going to fade due to him pitting too early for his last fresh options? Manage your car on its tyres but remember that fuel load is falling so your fastest laps should be possible. If you have big gaps in front and behind you may want to convert from 1 to 2 stop and pit for e.g. repairs to a wing and fresh options for a safe run home. In short 2/3 race distance is where you survey what risks and opportunities are facing you and decide what to do.



**A word on when to push for an overtake:** You need to be aware of the overall tactical situation. IE When will the car in front/behind need to pit for tyres? When did they last pit for tyres? Are you taking risks to pass someone who is pitting in 1 lap? Is the competitor behind you on his options stint and you on primes? If so will staying in front of them defeat their strategy. Engineer Ed is very helpful in this regard, keeping you informed of such strategic issues as fuel mix, tyre type and pit stops of surrounding cars. In early laps if following a fast driver and yourself being closely followed by others it may pay to allow the two of you to build a gap and attack him later. If you are on your options stint and others on primes it becomes more important to get clear air to use them to build a gap. Blindly trying to pass a.s.a.p. isn't always the optimum answer.

#### **Dynamic approaches to pit stop strategy.**

**a) Pitting to get clear air and the undercut:** If you are caught behind a battle between some closely matched drivers and you judge that it is detrimental to your/their pace you may wish to consider an early pit stop. You may re emerge in clear air on fresh tyres and be able to exceed their pace. If this works you will pass them when they pit. There are obviously small windows either side of planned pit stops where this will work without necessitating an extra stop.

**b) Covering the attack:** in a scenario where a 1 stop driver late in the race finds himself under threat from a two stop runner on fresh options in the last stint. He may also choose to pit for options to be in a position to defend. This is called covering. It will prevent the leader from having to defend on worn tyres from an attack on fresh options. Whether you will want to respond in this way will depend again on your relative pace, pace on your tyres, their predicted condition in the final laps, the track and your lead. The track is a factor as some tracks such as Catalunya require consistent high speed cornering and you are vulnerable if someone is on far better tyres. By contrast the tight street circuit of Monte Carlo means overtaking is much more difficult.

## Part 4) Responding to Weather

**Anticipate:** You have access to a weather forecast in-game so take note. If the chance of rain is high, take that into account with your (dry) tyre strategy. You may save a pit stop this way.



Virgin deals with damp track. F1 2011 screenshot.

There are two main scenarios in- game;

**Dry to wet:** -The high stakes gamble. When running on a dry grippy track and the rain comes the visual graphic will show rain for several laps maybe say 2-3 before the track loses any grip with consistent heavy rain. If it's a slight shower, don't panic –push on. If it's heavy rain you will need to pit for inters or wets. It can also be anything in between. The author has seen the transition from dry to wet take between 2 laps to 6 laps. A dry line will remain for a while and you can also monitor the water on track by looking backwards at your spray. When your spray starts to become heavier and less intermittent the game is signaling a wetter track. Be aware that when grip is lost in this scenario it is lost very dramatically and quickly. The combination of lower tyre temp and no tread create a double whammy and as Mr Brundle says (the dry tyre grip) “will fall off a cliff”. Once the game decides that grip is gone the dry tyre can be a full minute or more per lap slower. It will be like an ice rink and the transition from OK-ish to hopeless is brutally quick say 2-3 corners. There is also a downside to pitting too early as the wet tyres will overheat and blister very quickly say ½ lap on a fairly dry track. In essence wait until it all seems pretty wet. The inters work this year and are much quicker than wets in their own window. However be careful as for some unknown reason Engineer Ed has inherited last year's engineer Robs

love of inters. He will radio and tell you that teams are switching to inters and that drivers with inters are setting the best times. All false!

**Wet to Dry:** This scenario is mercifully a bit more communicative. When driving in rain on the inters/wets you will notice five obvious things; Visually the sky will clear, rain will get lighter, a drying line will start to appear, braking and handling will improve gradually, and lap times will start to fall. You can also monitor the water on track by looking backwards at your spray. When it starts to become lighter and intermittent the game is signaling a drying track. Watch tyre temp and lap times. You will get very close to dry lap times on the inters (say 2-3 secs) when it's time to change. That alone however doesn't mean you should be taking dry tyres. If the inters aren't badly worn you can see there is less urgency about a wet-dry change. Wets will overheat very quickly.

**Race Dynamic:** These scenarios and your choices will be influenced by the situation. EG If you are in the lead by 15 sec with 2 laps to go and on worn inters/wets on a drying track and the racer attacking you has changed for options already you may consider staying out or depending on the gap behind him for 3<sup>rd</sup> pitting for a safe 2<sup>nd</sup> over a risky attempt at the win! There are no hard and fast answers as the weather is as variable as...well the weather.

## Part 5) An Example of Race Preparation

Everyone will have different time constraints and the willingness to commit large amounts of time to the game will of course vary. Some people will enjoy just grabbing an engineers' quick setup and hitting the track for a race. Others will then look for more personal performance in the multiplayer environment. What follows is an example preparation for a league racer for one race.

- 1) Practice and setup session: Starting with a familiar setup, jump into GP (or TT first if you prefer) mode using the RedBull car in Short Race weekend. a) track familiarization. Do enough practice laps on primes to be lapping consistently within .2 sec. b) Setups. Refer to the setup section for process. Test and refine setup. This process may involve 30-50 laps or more. But there is no right number. If you are new to Monaco it may take 200 laps! Store Race and Wet setups. Some drivers will have a qualifying setup also.
- 2) Qualifying practice/rehearsal. Qualifying sessions on Primes, Qualifying sessions on options, a qualifying session on inters and on wets. Understand your relative pace with both high and low fuel on primes, it may be plus .5 sec or 1.5 sec! As a benchmark it is helpful to track your gap to pole in Legend AI. In dry weather on most tracks beating pole by 1 sec plus is a very good standard.
- 3) Practice race. 1 Race starting on options. 1 Race starting on primes. There is no right number. Check durability of options (after quali on them )and relative pace of primes. Check total time of a pit stop.

- 4) Online Quali and race session. Your online car will be slightly different. You can create a session with a friend and queue up multiple Quali and 1 lap race sessions to tweak your setup that was generated in GP mode.

With the above process you will have learned the track, set up your car, increased your speed and determined your strategy. It is not uncommon to end this process with a lap time 3-4sec faster than when you started. The additional benefit to you of the resulting familiarity and awareness of possible scenarios is also helpful.

## Part 6) In Car tools: Throttle Map, KERS, DRS.

**Throttle map** is discussed in qualifying section. Mix 3 will deliver more power and higher rev limits and do it with a more aggressive delivery. It's easier to spin out on corner exit when on the fast map and the slipperier the track the harder it is to use. Mix 1 will save fuel and tyres and be easier to manage on corner exit.

You start a race with +3 laps fuel surplus. Mix 3 uses fuel faster than mix 1 saves it. Mix 2 for the whole race alone will eat into the 3 lap surplus. You have to manage fuel mix usage to have enough to complete. Keep an eye on the OSD and ensure that it is +1 lap by the finish as "optimal" means race distance + or - .5 lap! If you run mix 1 to build a surplus the max display value is +3 even if you have saved more. The OSD fuel level refers to full race distance so if you have been lapped and you will not have to run full race distance you can happily run into marginal fuel levels. Be ready to switch to mix 1 for a few laps until you see +1 in the OSD to ensure you have enough to race to the finish. There should be a non critical period to do this. Hint: Not the start or the few laps around either pit stop window or when you are attacking on options

### Summary of fuel map use.

Map	Potential situation
Mix 1	Qualifying warm up laps, out laps, safety car laps, fuel saving, extreme wet, tyre saving.
Mix 2	Most race laps.
Mix 3	Going fast!

**KERS** it seems that the consensus is that KERS is best deployed out of slower corners and once you have good traction. No point spending precious KERS when already on the limits of wheelspin. It seems to make sense as you will have greater acceleration before the limiting factor of drag kicks in and when ever increasing horsepower yield ever decreasing returns. The author would add that the longer the



straight the start of which you have used KERS the longer the residual benefit. If we take Turkey for example I would prioritise using a lot of KERS after getting 4<sup>th</sup> gear exiting turn 10 to hit higher speeds for the long straight. However exiting turn 7 climbing the hill in 4<sup>th</sup> /5<sup>th</sup> is a good spot also for a couple of seconds worth and out of the final turn into pit straight. In summary : a 4/5<sup>th</sup> gear tool mainly for where you won't be wasting it by braking for quite some time. Save it on warm up laps for the run to the start finish line on your hot lap.

**DRS** In a race get within 1 second at the detection zone and go. You still have to make the corner however and bear in mind greater terminal speed. **Setup note:** Ensure 7<sup>th</sup> gear is correctly set to reach full potential on a mix 3 KERS and DRS test lap. In quali DRS is available everywhere so use it as much as you dare. (not through 130R at Japan or Blanchimont at Spa).

## Chapter 3 Online Play, Racing Rules and Etiquette



Two competitors racing close and clean. Abu Dhabi. Photo 6e66o

### Part 1 Basic Racing Rules a General Overview

**Equal Cars or not?** The settings menu allows you to choose between 2011 or Equal performance. The Equal performance settings create cars that are equal in terms of HP and grip but they are not exactly the same. They differ in wheelbase and the impact on the game physics means they feel different and some require subtle adjustments to setup. Mainly ARBs and Springs to get the same lap times. So try out

different cars to see which you prefer. The author did an extended session and found that one car suited best of all. If using 2011 performance setting remember that the bottom 3 non KERs teams (Lotus, HRT, Virgin) are a lot slower.

People race for fun and challenge. It's more challenging to win without contact and more fun when people show each other respect. The following rules are and guidelines based on the tried and proven RD rules for clean racing.

Be friendly on the track and off it.

Follow all safety rules as if you were in a real car on a real track: use the pit speed limiter in pit lane, observe all safety flags and lights, no donuts in the pit lane or on the track.

If you are involved in an accident, do not intentionally leave your car parked on the driving line where it can cause interference to other drivers, or result in more accidents. Return to the pit box safely and repair your car to continue the race.

If you spin or crash advise the other driver and get back on to the track as safely as possible.

If you accidentally leave the track for whatever reason you must wait till there is a clear safe gap before rejoining the track. Upon rejoining the track, get up to speed as quickly as possible without blocking the racing line.

Do not attempt U-turns on the racing line. You will cause an accident.

## Part 2 Racing Rules



The cardinal sin, taking out your team mate. Two Renaults tangled. Photo- Magnificent.

Do not deliberately cut the track. The white (or yellow) line marks the edge of the road: don't cross them with more than two wheels.

No purposely crashing into each other.

When defending your position you are allowed one move off line and you are allowed to move back on line and that is it.

When exiting the pits stay within the white line on the exit or you may be penalized if you impede another driver by cutting the line. If there is proof of you cutting the white line you will be penalised.

If you hit another driver during a race and disadvantage him, we expect you to stop and let the other driver regain his position on you. If this costs you many places (e.g. first few laps) then consider this a penalty for your driving infringement. Doing this shows respect to your fellow drivers and will encourage drivers to be more careful. Please use some care when letting the other driver regain position, do not immediately stop your car on the driving line where it can cause further accidents.

### Part 3 Etiquette in qualifying and being lapped.

**During qualifying** if you are not on a hot lap always be aware of the people around you and do not hold up anyone on a fast lap.

**Blue Flag:** When being lapped in the race, move out of the way of the car lapping you as quickly but as safely as possible. Do not alter your line or braking for a faster car behind you. Unpredictable moves have a way of ending the race for both of you. Let the faster car dictate when and where to initiate a pass, and only then you are free to assist by easing off the throttle.

*Note: Watch the mini map and rear view, be aware when you are about to be lapped. Before corners we are all slowing down as fast as we can so **when being lapped** it is generally safer and more effective (and less costly to you) to get off the racing line and out of the throttle after a corner (early on a straight). Simply doing this in an acceleration zone will usually give a clean stress free pass. This is preferable to doing anything radical to stop your car in a braking zone or put it in funky places (grass, kitty litter, runoff areas) to make it disappear. Communicate with the other driver to let him know you have seen him.*

### Part 4 Communications and Miscellaneous

It is advisable to use a headset to be able to communicate with the other drivers and alert others of incidents.

Talking in a race is advised but only for crucial information as it can distract other drivers unless all drivers agree to more talking. *Note: Drivers are concentrating so verbalising a running commentary on your own particular race is not the way to win new friends.*

Do not quit, if you crash in qualifying wait until the race.

If you are involved in an incident discuss the incident with the other driver after the race in a friendly way. If you feel stressed out by an accident always take 24 hours to calm down, review the replays of the incident if available and resolve it in mature way via PM and don't make angry immature posts about it on the forum. If this doesn't resolve the problem please contact the staff member that organized your race by PM and send him a movie if available that clearly shows the incident from various angles so action can be taken after reviewing it. Failing this an objective witness statement.

*Note: Reports of unfair driving should be submitted in a factual, objective and professional manner to the race organiser for a fair unbiased review of the incident. Write as calmly and objectively and accurately as possible. There is no point to offensive or insulting messages or language.*

In summary just show respect to other drivers-simples!

Go fast, learn, compete and have fun.



## Chapter 4 Setups.



I just thought this was an excellent photo of the authors online car. Photo Phil Ciborowski

Each track is unique in its requirements. Some tracks/ sectors require high down-force, some low. Gearing will be certainly unique for each track. Certain combinations of corners or straights may dominate the lap time at a particular track.

The subject of setups is a huge one. Hundreds of man hours are spent developing and testing setups and even then two of the fastest drivers may have very different setups for the one track.

How does one navigate through this massive area? The Author will suggest that there are three main approaches to choose from.

- 1) **The “keep it simple I’m here for the racing on track” approach:** This driver can whilst in the pits click on the engineers menu and choose from about 6 ready- made setups. Varying from very high down-force to very low down-force. Each setup is quite well explained in game. This is the “set and forget” approach. Probably still adjust gearing to hit max revs on the longest straight with DRS and KERS activated or you will have left power unused!
- 2) **The “There must be some other setups I can use to gain an edge” approach.** This driver can go onto the RD website and in the sticky thread called “setups” every track has a thread. Here you will find many setups recommended by various people. You can write them down try them and compare to the engineers setups. You can then tweak them further based on your testing on track and customise further. Even here, often the best starting point is to take the engineers quick setup and tweak. Again each setup parameter is pretty well explained in game. Different drivers have their own style of driving and this reflected in their setups. You may find one particular driver's setups suit you. You can then use his unique setups for each different track.

- 3) **The “I want to fully understand all this and make/test my own” approach.** This driver needs to absorb and use quite a bit of race engineering information. There are some great resources available and the author is going to refer the reader to these. The RD website has a comprehensive generic setup guide written by Ramon Van Rijn. It is available for download.

The second is a fantastic piece that runs to some 55 pages by a sim racer and author called Eric Alexander aka “RacerAlex”. It is based largely around real F1 engineering and the EA Sports 2002 F1 game but don’t be put off by that. It explains in straight forward language all the engineering principles surrounding your setup choices and a guide as to the process. It doesn’t get any more real than this. You can find it with Google, just type in “**Raceralex Advanced Formula 1 Setup Guide**”

There is a wealth of setup info in the above documents. The author won’t pretend that he can add technical content. However If you do choose to develop/tweak your setups you will need a process to test them.

**The author is going to recommend a process.** Firstly you need enough practice laps with a familiar setup to be within .2sec every lap on the track. This may be 10 laps to get back in the zone at a familiar track or 200 laps to learn Monaco. There is no point testing or tweaking setups if your times are going to come down anyway simply through improved driving. If you haven’t got the feeling of track grooved in you can do some TT laps to get an initial feel then a longer race just to come to grips with it.

Save for a quick 7<sup>th</sup> gear test run with low fuel options mix 3 KERS and DRS all testing/setting up to be done on primes first. Due to their lower grip levels they will more expose car handling issues than options will and you will normally do about 1/2 of your dry racing on primes. Use 25-30 laps of fuel. Again it’s your average race load and as the car handle better on low fuel it’s harder to detect issues on low fuel. For example the author tested a setup improvement yielded .250 in TT but that was worth .9 sec with high fuel/primes. Resist the urge to want impressive times just yet. The author also recommends using mix 2 only as this will replicate most of your race laps. Also recommend not using KERS (or DRS) as your usage thereof will vary and when testing we want to remove variables.

**Regarding Assists and setup:** The same goes for assists TCS off, ABS off. So we get the car naked in its engineering and balance weaknesses no options or assists for balance issues to hide behind! The reason is that the assists will camouflage any setup imbalances making testing harder. As an example: you may want to try setting rear springs a little harder. When doing this, at a certain point rear traction under acceleration will become problematic. If you have TCS on you won’t lose traction and spin the rear wheels as the TCS will starve the engine of power to keep the rear wheels from spinning. You won’t get the wheel spin but your acceleration will be reduced. This is much harder to sense. Brake balance

changes/efficiencies will be dulled also by ABS as you won't get lockup even if balance is too far fwd in the wet. At the same time the cars handling characteristics whilst allowing these things is not optimized. So my take on it is that one should always do setups with no TCS or ABS and on prime tyres and significant fuel load. If it handles beautifully with high fuel and primes it will be awesome with low fuel and options.

**The Process:** You do need to choose a base aero setting to begin. Pick numbers firstly that make sense to you. Having an idea from your engineering knowledge, what may help the setup make one change at a time. Do 2-3 laps and monitor the results. Use “flying lap” option or you will forever be warming tyres from cold. Ensure you record the times for the second and third timed laps. You should get a feel in certain critical corners if the setup is improving i.e. tighter line, earlier throttle possible, less lock up under brakes, less wheel spin. Maybe it will just be more speed on the straights. Part of the process is to understand and exploit the advantage you are looking for in setup. You may have added some wing. If so you have lost some straight line speed but have gained some cornering speed. You need to push to exploit this. You might have reduced rear springs a notch or two for increased traction, see if there is less wheel spin. You will also need to see improvement in the lap time. You see the setup will never be perfect for every part of the track so the task is balancing gains in some areas with losses in others. When you hit the correct balance the gains in critical areas will be greater than the compromises in non critical ones for that particular track. *NB use external view for checking brake bias.*

When you have an improvement save it and move to the next parameter. Remember though if you are making radical changes that there is a link in dynamic car balance and one parameter can impact others. For example if you are running lots of front wing it may be helping with front braking and turn in. If you lower the wing angle, springs, brake bias and camber/ toe in adjustments may be needed. Another example: you could be adding more and more rear wing to improve rear grip whereas the solution may be springs adjustment. Once you find a solution via spring settings or other you may be able to take some wing off. If you have changed wing angle you will need to re-visit gearing.

If you get lost in a frustrating “setup circle”, go back to a base setup and just do laps for a while to clear your head and get you driving on the track right. Then start to tweak again.

Once happy that you have got a good setup it's time to switch to options and low fuel for an attempt at your PB. Once you are finished testing, if racing with assists then its time turn them back on and get that little bit of help again.

If you are preparing for a league race you might then do a practice race with your setup to check tyre strategy and groove the track into your memory.

**Wet setups.** The author has had some success with the approach of: Take the dry setup then; Two clicks more wing, two clicks softer springs and roll bars, brake bias rearwards 3 clicks, brake pressure and size to low, two clicks off top speed, one click less front and rear camber, ride height to 5 for inters 7 for wets.

**Qualifying setups vs Race setups.**

*“It’s all a question of tactics and being able to pass your rivals in the race. Being slower in the tight sections is no great penalty because it is not easy for other drivers to pass you there.” Alain Prost.*

OK strictly speaking we have “Parc Ferme” in 2011 but: Some drivers will have a separate race and qualifying setup, many do not. The theory is that in qualifying with DRS open a lot, low fuel and possibly options your corner speeds and top speed will be higher than in the race setup. This will impact gearing and wing decisions. Also while your qualifying setup is to find the ultimate solo lap time conversely your race setup may be optimized for certain overtaking points on a given track. Importantly if we consider extra wing in a quali setup; other than in tight corners so for much of the lap the DRS will be open negating speed loss from high wing settings. Take Valencia for example: long fast straights and slow corners. In such a race one may decide that there will be overtaking opportunities on the straights that suit a low wing setup. One may also decide that the aero influence is negligible in many of the corners and that the slow corners don’t represent an overtaking opportunity or threat. The decision may be made to move away from the high wing setup that with DRS gave you the fastest lap time to one that makes you faster on the straights. You will then need to manage the inherent compromise in the corners. There may be a slight compromise for race setup on 7<sup>th</sup> gear so it’s a bit more useful for most race laps but possible hits max revs with DRS a couple of seconds too early (by which time you have made the pass anyway).

When one thinks this phenomenon through it becomes clear that DRS/more wing availability aside the characteristics of the track will dictate whether it (two setups) is a strong option. In the authors view tracks that are consistently fast or offer medium to high speed corners (Monza, Spa, Cataluña, Silverstone) and tracks that are consistently tight (Monaco, Hungary) will offer the least to gain from divergent setups. This is due to the fact that what gave you the fastest qualifying time will be needed in the race. At Monza for example you need ultra high speed in qualifying and the race. At Spa you need a balance of high speed and good high speed (aero influenced) cornering.

On the other hand tracks that feature a big variety of some high speed sections and low speed (mechanical grip) corners (Valencia, Marina Bay, Abu Dhabi) will potentially offer gains from divergent setups from qualifying to race. It’s not a cut and dried topic and all open for experimentation-enjoy.

The setup menu in- game offers good explanations but just for the record here is a simplified list and “lay mans” explanatory table of the setup adjustments follows.

Setup Parameter	Notes
Front/rear wing, 1-10	More wing means more aero down force and more grip in medium to faster corners. Little impact in slow corners. Also means car is slower on the straights. Rear wing is now critical. Aero balance will impact over/under steer.
Brake balance,	Moving slightly rearwards will allow more trailing brake. Needs vary track to track and subject to aero balance and ballast. Move back significantly in wet.
Brake force,	Consider in wet and damp conditions to avoid lock up.
Brake disc size	Smaller=lighter unsprung mass for quali. Bigger takes longer (more heavy braking) to heat. If Ed keeps telling you that you need to warm the brakes they may be the wrong size.

Roll bar stiffness	Softer in the wet and slower tracks. Refer to RacerAlex's guide.
Suspension: Ride height front/rear	Lower ride height means more "free" aero grip. If very bumpy track or riding kerbs may need some height.
Suspension: stiffness front/rear	Stiffer front springs will improve initial turn in but reduce actual cornering grip inducing understeer. Stiffer rears will increase oversteer by reducing rear grip. If you like understeer, have front stiffer, If you like oversteer have fronts softer (than rear). Adapt for the track. Stiff rear springs also reduce traction (acceleration). Slightly softer rear springs (say 9/7) will reduce snap oversteer and improve traction.
7 gear ratios	Set 1 <sup>st</sup> for the slowest corner, 7 <sup>th</sup> to max out on the longest straight with KERS/DRS. Initially the others evenly spaced then minor adjustments for specific corners gearing.
Alignment Camber front/rear	Fronts need more camber than rear. Front: Test for turn in and grip mid corner in med speed corners. Don't assume max (-1.5) is best! Rears flatter (less camber) means more acceleration, more angle may improve med speed corner handling.
Alignment Toe- in front/rear.	More front toe- in will improve initial cornering bite but cost some top speed and tyre wear. Rear toe-in is controversial.

## Chapter 5 Managing in-Game





Massa with some space at Monaco. Photo Phil Ciborowski

## **Part 1:**

### **Game Modes**

#### **Grand Prix:**

In this mode you choose the track, weather, distance, car, and all other settings. Either one-off races on your favourite track or a custom designed season featuring your choice of tracks. Handy for practicing tracks and developing setups without the engine wear in career mode. Just grab any car, any track, choose your settings and you are away.

#### **Career:**

It takes the GP mode and the name implies adds the depth of embarking on a realistic career in F1. You can choose the length of career from 3- 5 years. You will be offered drives initially in lower tier cars (e.g.

Williams, Lotus, Virgin, HRT). They don't have the same performance as the top teams. The bottom 3 don't have KERS. You will struggle at first. You need to set realistic goals e.g.: Beat your team mate, make qualifying 2, get in the points. This is what career is all about the realistic journey from bottom rung teams to the top of the sport. You get to decide if you want to progress quickly to the fastest teams or grow a team around you that will take you to the top. The beauty is in the realistic fight to get say a Williams into Quali 3 or a Lotus into the points.

### **Key factors in career mode:**

**-Car improvement:** Your tier 5 car will improve in "base performance" year on year provided you get the team up in the constructor's standings above their current position. This is achievable but not always easy. You may want your team mate to do well on your bad tracks! It will also improve during the season with R&D upgrades.

**-R&D Upgrades:** The team will upgrade the car during the season. To facilitate this, both you and your team mate will be required to test upgraded parts. When you arrive at certain Grand prix practice sessions the engineer will tell you that you have some "performance tests to perform". This is the signal that R&D upgrades are available/achievable. You must enter the engineer menu and click on the upgrade to accept the challenge. NB ensure you have selected your setup first as this choice will take you straight to the track. Normally you will have seven laps within which to hit a target time which will show in the HUD. The top RHS of the HUD will show Upgrade lap ..../7. If you hit the target time (it will appear in green and the HUD will change to simply say lap # and you will get the upgrade. If you are running "long race weekend" format you will need to do this in all 3 practice sessions. NB you must not use the Event menu to skip forward, re start a session or end the session by an engine change or you will not earn the upgrade. Depending on the upgrade it may take a week or so to be implemented. With the upgrade the cars performance will improve. Typical upgrades are: New throttle map (Fast or cruise map), increased down-force, reduced drag, improved braking materials, reduced engine wear. The cumulative effect over the season/s is significant. This is of course dependent on the Key software component known as the driver-you.

**-Reputation points:** these grow with your achievements. As they grow you will become of interest to other teams.

**-Team mate challenge:** Everyone will compare you to your team mate. If you want to progress you need to prove your value by beating him consistently. He will appear as a yellow dot in your mini map.

**-Becoming #1 Driver:** If you get this status you will determine R&D focus. This choice is made once per season late in the season (at Abu Dhabi) and determines focus for next season of Standard, Balanced or Aggressive paths. The more aggressive the path you choose the more upgrades car will receive but the teams' expectations of you in qualifying and race result will also be higher. One imagines that this replicates higher investment and higher level of expectation from sponsors etc. As #1 driver you will find that your team mate will do some of the Testing and earn R&D upgrades for the team.

**-Championship Rival:** Getting an offer from a top team can and probably should be a long haul in a “realistic career” and take some impressive performances. Not everyone has the patience. This feature was inserted to give the less patient player a fast track into the top teams. You will be asked in an interview around half way through the season to choose between three drivers. Once you have chosen a championship rival they will appear as a blue dot in your minimap to help you track and hopefully beat them!

**-Interviews:** Your answers will help partly to decide how happy the team is with you and is your method to signal to other teams your interest in getting an offer. If you say that you are delighted and everything is great other teams will lose interest.

**Contract offers:** Your agent and team management will communicate via the lap top. You can monitor what teams are interested. You will receive offers from time to time. It’s for you to decide what you want to do. The offers will last a few Grand Prix then be rescinded if not taken up. If you refuse the first offer they will sometimes make another. If you re-sign with your current team all other offers will disappear. In the case where you have ignored all offers and they disappear, you will at the seasons end get an offer from someone.

**Engine management:** You have 8 engines to last the season. Engine wear at this point doesn’t seem critical but worn engines take a power hit. Save them for critical horsepower races where you need an edge e.g. Monza. So in theory it’s best to practice and do setups on worn engine units and qualify and race on fresher ones. To do this you need to select another engine unit in the pits setup menu. Be aware that this change will take the rest of the remaining practice session. If you want to actually then have a practice session best be in the long race weekend format. The technique is to enter P1, select the engine unit for practice. It will then use the remainder and take you to P2. Practice in P2 and P3. Remember to swap engines at the end of P3 to the race unit. Consider the impact on gearing if the race unit is much fresher. Also be aware that changing engines will lose any R&D upgrades you have earned for that weekend. Remember basic practice, track familiarisation can be done in TT and initial setups can also be done in Grand Prix mode.

## Co Op Career Mode

This is a blend of multiplayer and career where you and one buddy pit yourselves as a team against the AI teams and do a 1 year season with a team of your choice. You can fight it out at the back trying to be the best of the smaller teams or compete for podiums with the top teams. You can have short or long race weekend and race distance of your choice as well as all other game settings. Your status as driver #1 or #2 will depend on your relative performance. You may even find yourself having to decide whether to help or hinder your team mate on track. An excellent training and setup tool for two guys who might be team mates in a multiplayer league. You can only run 1 season at any time and only have team mate.

## Multiplayer:

This is where you pit your skills against up to 15 other real flesh and blood racers and for many it is the most engaging and stimulating aspect of the game. Standards of course vary a lot but it can be great fun for anyone who can get around the track. At the highest standards on line play is very competitive. As a rough indication you can gauge your performance against the pole-sitter in GP mode with Legend AI. It will vary from track to track but the faster players are seldom more than 2 seconds faster than this.

On line racing is available in the form of a full 19 race championship season, custom seasons, individual events or regular club events.

Game settings can be varied as in the GP mode or career mode except of course the speed of your opponents. The multiplayer game can however be manipulated by for example asking the fastest drivers to use the slower cars (2011 performance) or using reverse grid (from qualifying). Again more assists means easier fast racing. Less assists will lead to more errors, more skill required and more overtaking opportunities. On line play against random people often results in biff and barge type racing. This is why it is far preferable to join and race in organised club racing with a licensing organisation such as Race Department. [www.racedepartment.com](http://www.racedepartment.com) this ensures you are racing with people who have read and agreed a basic set of rules that ensure clean racing. Race Department also offers a wealth of resources in terms of setups, discussion forums, league and club racing for the sim-racing gamer and has a strong F1 2011 community. It's free and welcomes new members.

## Time Trial

Is a place to compare times with all other players in the world across all gaming (PC, PS3, Xbox) platforms. In TT mode conditions are perfect. Its more realistic than 2010 but still grip levels are highest, fuel load is zero. It can feel a bit like a quali lap in GP but it's the same for everyone. Setups aren't quite the same as the high grip/ low fuel levels don't require as much wing, don't respond adversely to extreme camber, tyre wear is not a factor, and higher corner exit speeds mean higher top speeds. Your personal best ghost car will appear for you to compare your current lap so its a good way to push for your best. You can also choose a ghost lap from the global or friends leader boards to chase. Ensure you return to paddock from the engineers menu rather than the pause menu or progress will not be saved.

Some drivers like TT mode to initially simply learn the track in a format uncomplicated by damage, fuel flags etc. It is somewhat useful for setups but as TT is more forgiving than a high fuel run on primes it is harder to feel improvements so they need to be tested / adjusted with Primes and higher fuel loads in GP.

## Part 2: Setting Game session and Difficulty: Sims and Assists



HRT Final turn Japan Photo Phil Ciborowski.

### Tuning the game to your current level.

**View:** One of the biggest factors on the “immersion” in game is your chosen view. The author drove in T-cam view in 2010 as regrettably the cockpit view was quite restricting. Happily the 2011 cockpit view is excellent and I for one could never go back. The feeling of what the car is doing and realism is on another level. On the odd occasion I am required to go outside (say to check brake bias). It’s like watching the car versus driving it. To experience a 100% race on Expert with cockpit view is something.

**Weather-** The extra dimension. You can choose the weather or set it to dynamic. Dynamic weather adds a whole extra dimension to the game: Setups wet or dry, tyre strategy and timing of change wet-dry, dry to wet. Some rain can really throw a cat amongst the pigeons.

**Race Length:** Shorter or longer races change the dynamic of the racing. Longer races mean that you can possibly build a bigger gap before pitting, can afford to spend several laps chasing one or more drivers down and passing them. The selection of race length alone will alone have significant impact on the dynamic of tyre and pit stop strategy. Longer races will facilitate extra stops as the time to be gained on option tyres can be enjoyed for more laps making it feasible to make up for the time taken by the extra pit stop.



**Difficulty: Getting the right balance and progression.** Setting difficulty and assist level is where you find the right balance for your current skill, your progression and is decided by what you want to get from the game. You can make it very easy or very hard. You balance the speed and difficulty of a) the event with Difficulty settings and b) your speed with Assists.

There are essentially two schools of thought. You can a) develop as a driver with realistic car behaviour and start to win as you get faster or b) start winning and gradually reduce assists as you get better. The first method is the driving realism approach is where you set all at the most realistic and improve your driving while possibly lowering the AI level rather than enhancing your level with assists. These drivers feel they have developed good skills quite quickly without the numbing effect of assists. The second school is the “want to be competitive” school that prefer to use assists to allow achievement of a given standard e.g.: say a Top 10 position or a podium. In essence speed yourself up with assists (the “trainer wheels”) or slow the AI down. More assists and less realistic settings will allow you to compete against faster AI but then are you really?

One racer suggests that to gauge your correct level of assists one should set them so you have to work to beat your team mate in career mode. If you are thrashing him and have any assists still on then it’s time to reduce them!

The game is definitely more immersive and more rewarding for the serious driver with less or no assists. It is rewarding and instructive to see gamers who are very quick with all assists on, hit a steep learning curve when they are switched off. From the Authors experience to get the best from the game one should move as quickly as possible to minimal/no assists.

It’s harder to pass with full rules and damage on and therefore the race is harder to win. You simply have to get faster and better at racing to win and that’s the beauty of the depth of the game.

As you progress through say a 5 year career you can make adjustments to settings to gradually make the game harder as you get better.

Bottom line is that no one has any bragging rights outside their own home for results that occur with assists or against any other than Legend AI. It’s your method of getting to that point that you choose.

Career difficulty and assists menus are accessible in the garage when selecting career. Assists can be accessed in the pause mode in car.

**Game Difficulty settings summary table:**

Item	Setting	Comments
Rules and Flags	Off, Reduced, Realistic.	Biff, barge and corner cut or Realism. Harder to win clean.
Damage	Off, Cosmetic, Realistic.	As above. Car will break if you are careless/aggressive/unlucky. Lost time in pits more care/precision required in overtakes.
Fuel Sim	On-Off	Car is heavy with fuel at start, impacts acceleration, braking and cornering. Lightens as used up. Significant impact on you versus the AI drivers.
Tyres Sim	On- Off	Tyres wear out, losing grip as they do. Must be warmed for optimum performance. Pace, qualifying and strategic implications.
AI Level	Amateur, Intermediate, Professional, Legend.	Slow to fast.
Flashbacks	1-4	Extra lives to cover your costliest mistakes.

**I am a driving god, what else can I do to make it harder?** Allow yourself no restarts whatsoever. Don't make kamikaze passes in the opening lap when AI drivers are more vulnerable instead hold position for a lap. Only use options for 1 stint. Don't take R&D upgrades, don't use KERs, stick with slower teams.

**Assists Summary Table**

Brake assist.	On- Off	Very basic aid for those who need it. Slower in lap times than average drivers braking. Essentially brakes when AI does.
Dynamic Racing Line	Full-Corner only-Off.	Shows optimum racing line and also guides whether to accelerate or brake. Use for first sighting of track. Turn off a.s.a.p. it will numb your sighting of real brake markers.
ABS	On-Off	Slight help only, mostly at end of braking zone. Will allow more turn in on trailing brake. More help in wet.
TCS (Traction Control). See expanded piece below*	Off-Medium-Full.	Big assist, allows you to stomp on throttle where you would normally have to feed it in gradually as turn radius, gear and speed increases or risk spinning. Extra helpful in the wet. Big loss of feel and immersion.
Auto gearbox <i>see notes below#</i>	On-Off	Automates gear change (really!). Manual is of course harder but you can brake later in manual through engine braking.
Pit assist	On-Off	Helps you in pit lane exit (esp Abu Dhabi)

**\*An expanded piece on driving without TCS (Traction control system).**

**Corner Exit:** The more steering lock you have “wound on” and the slower you are going the greater the propensity for wheel-spin. TCS will manage this by taking off power the moment there is a hint of wheel-spin. For you to drive well without TCS the key skill really is to manage a progressive throttle application. If you stomp on the throttle with the wheel turned you will get wheel spin and possibly a slide. In essence you gradually/progressively apply throttle as you wind off steering lock. As your wheel straightens the foot goes down. It is really a movement that is linked as if by an invisible piece of string. This is why Walter Rohrls’ brilliant mental picture of a piece of string works so well.

In your head there is a piece of string tied from the bottom of the steering wheel to the big toe of your throttle foot. So you can only access full throttle when the wheel is straight. Automatically as you straighten the wheel exiting a corner your string gets longer allowing more throttle.

If we want to get even more precise and technically correct the aero down-force influence starts to kick in as speed picks up. Delivered torque per wheel rotation also decreases. By 5<sup>th</sup> gear the string is replaced by elastic, by 6<sup>th</sup> gear it’s not there at all. Hence Eau Rouge you can have near full lock at full throttle in 6<sup>th</sup>-7<sup>th</sup> at 250kph.

Another interesting phenomenon is where you might in a fast corner wind off lock temporarily to allow more throttle/acceleration then as aero influence kicks in wind on more lock. This happens in Spa corner 10-11 “Pouhon”. Under full fuel approaching in 6<sup>th</sup> gear I will brake at about 65 metres and downshift to 4<sup>th</sup>. Once getting good turn in, feed in more throttle on slight lock and as corner opens in 5<sup>th</sup> give full throttle then 6<sup>th</sup> at corner exit with full lock. The higher speed gradually allows more lock due to aero influence (and in a small way centrifugal effect of the wheels).

So in essence you have to develop a connection between the movements of your hands and of your feet.

**# Some notes on the transition to manual box.**

**Why**

The auto transmission makes it a bit easier at first as you don’t have to worry about gear changes so it’s one less job to do. This allows you to concentrate on learning the track just braking, steering and accelerating. In fact you can race quite well in auto mode. You are free to use KERs, DRS, and adjust throttle map any time without interfering with a gear change. The gearbox will change down through the braking zone and provided that you brake and lift off at exactly the right moment it will select the gear you want for corner entry. This part is however the biggest advantage to manual gearbox.

**Benefit 1,** Later braking. In the braking zone you can firstly brake later as the progressive downshift precedes and leads/assists the braking whereas the auto downshift follows the deceleration.

**Benefit 2,** Positive gear selection; You decide which gear that you want (which can vary dependent on fuel load and tyre type/condition ) for the corner and get it every time assisting turn-in. Rather than

waiting, staying on the brakes and hoping or tapping the brakes again to get the downshift you actually want-such a messier process.

Both the above points lead to more precise control and consistency.

**Benefit 3, Short shifting.** You may need to manage low traction or low fuel. In either case it's possible to shift up earlier or on lower throttle to get less revs / more traction whereas the auto box will only up shift when you hit the rev limit. This reduces your available responses to less throttle.

In essence the manual box will allow you to more precisely use the engine through the gear ratios to do what you want.

### How

You need to learn the track and know what gear you need/want for each corner. Once you have done that it's a case of getting to that gear in the braking zone and making any adjustments for conditions.

## Part 3: Car Characteristics and Performance.

Cars have varied power and handling characteristics and for convenience are placed in performance tiers from 1-5.

Tier	Cars
1	Red Bull, McLaren
2	Ferrari, Mercedes,
3	Renault Toro Rosso, Force India,
4	Sauber Williams
5	Lotus, Virgin, HRT

### Circuit Guides

[http://sponsoring.allianz.com/en/formula1/about/circuit\\_graphics](http://sponsoring.allianz.com/en/formula1/about/circuit_graphics)

<http://www.vivaf1.com/portal.php>

### Pit stop times

This data was posted by an RD member. Silverstone intuitively seems very short as it feels that you could read a short novel as you exit those pits. It may be deceptive however as you miss 4 (count them) corners.

	PIT DRY	STOP WET
Spa Francorchamps	19	20.75
Monza	18.133	18.88
Circuit de Catalunya	18.466	19.31
Hungaroring	18.533	19.28
Yas Marina Circuit	16.96	17.72
Bahrain International Circuit	22	22
Autodromo Jose Carlos Pace	14.43	15.22
Istanbul	15.8	16.55
Melbourne	21.6333	22.38
Monaco	20.533	21.28
Montreal	13.933	14.72
Sepang	20.366	21.1
Shanghai	21.2	21.95
Singapore	19	20.75
Suzuka	16.5	17.25
Valencia	20.767	21.58
Silverstone	12.633	13.38
Korea	19.867	20.6
nurburgring	16.567	17.41
delhi	16.43	17.29

### Nearly Everything Else

[www.racedepartment.com](http://www.racedepartment.com)