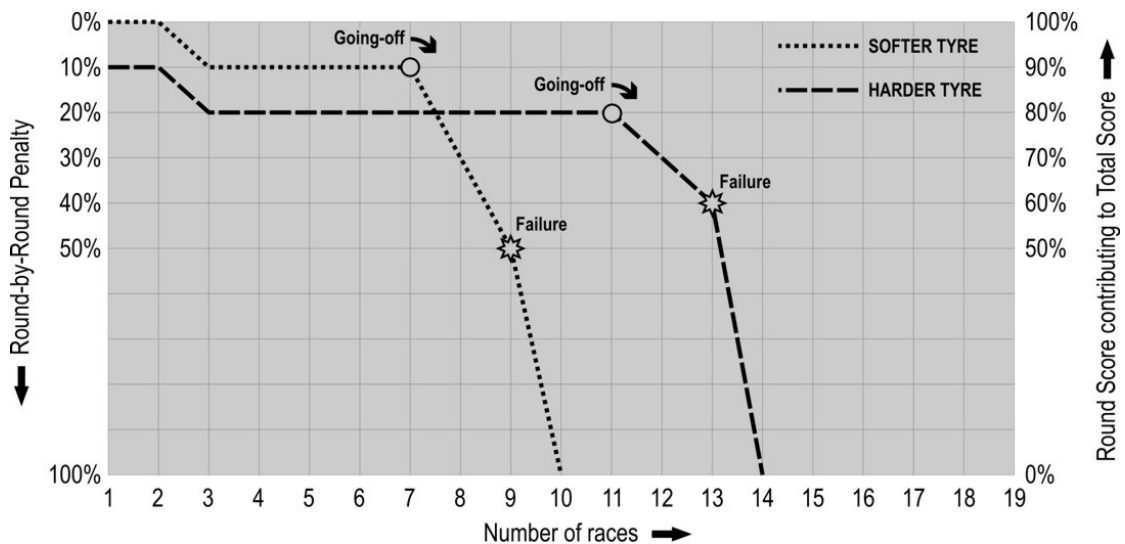


## The GPL Pit Stop System

How does the GPL Pit Stop System work? Well, having decided on the Entry Form the Tyre on which you'll start your season, you can sit back and wait for your Pit Stop Signal. When it arrives, the Pit Stop Signal will have attached to it a Pit Stop Proposal Form. You can use this form to tell me which Driver you wish to drop, who to replace him with and which tyre you wish to use until your next Pit Stop.

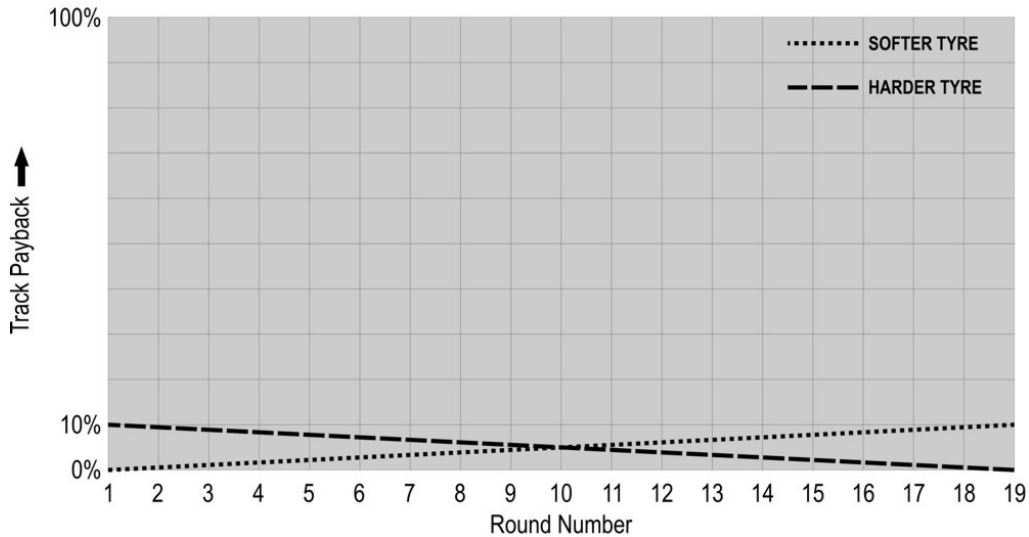
And what of the penalties themselves? Well, the underlying principle is to use penalty points to mimic the effect different tyre strategies have on a car's speed during a race. This is done by giving each Tyre a Speed Profile, a simplified curve that represents the changing grip (and so speed) a real Formula 1 tyre produces during its brief life. The so-called 'rubbering-in' of the track is also simulated, again in a very simplified form.

So, first of all let's look at the Speed Profiles for our Softer and Harder Tyres. The **Round-by-Round Penalty** is shown up the left vertical axis (as a percentage of your Round Score), the number of Races along the horizontal axis:



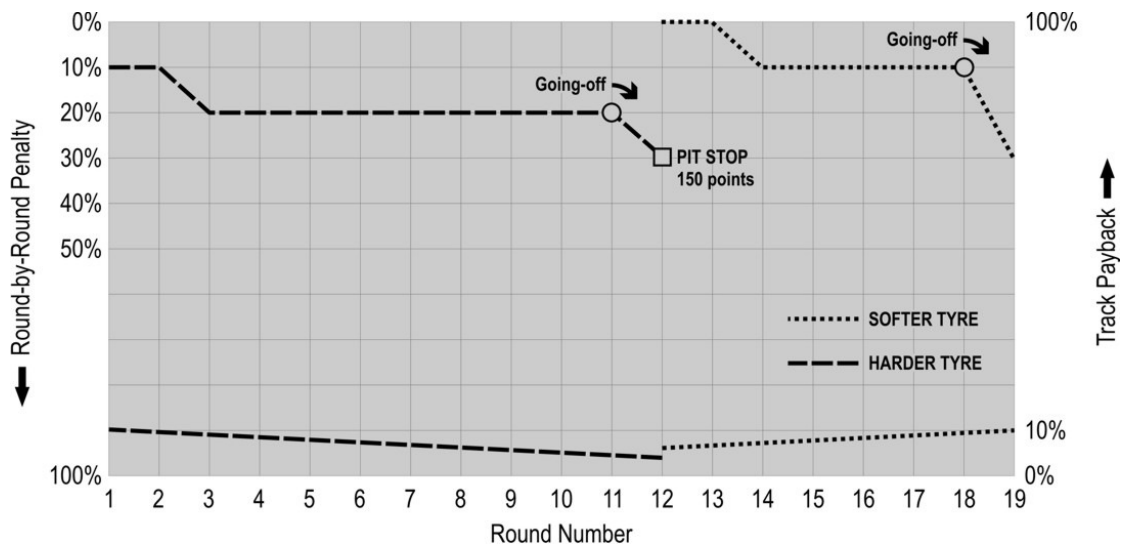
As you'll see both tyre compounds have roughly similar profiles and that there is a consistent difference between them. Over the first few 'laps' they are at their quickest before settling into their natural 'race pace'. Unsurprisingly however, the Harder tyres go for longer than the Softer but aren't as quick. As they come to the end of their life both compounds hit their 'Going-off' point when their performance drops off. It is at this point that I will alert you with a Pit Stop Signal, a reminder you should think about a change. The tyres remain usable for another two races before passing the 'Failure' point. Hence the Softer tyre is good at most for nine races, the Harder for thirteen. Then as you can see they plummet to a 100% penalty (i.e. you get nothing of your Round Score) and you are forcibly sent to the pits on little more than the steel belting! And until you Nominate another tyre to continue, there you will remain.

Now a bit about the curious **Track Payback**:



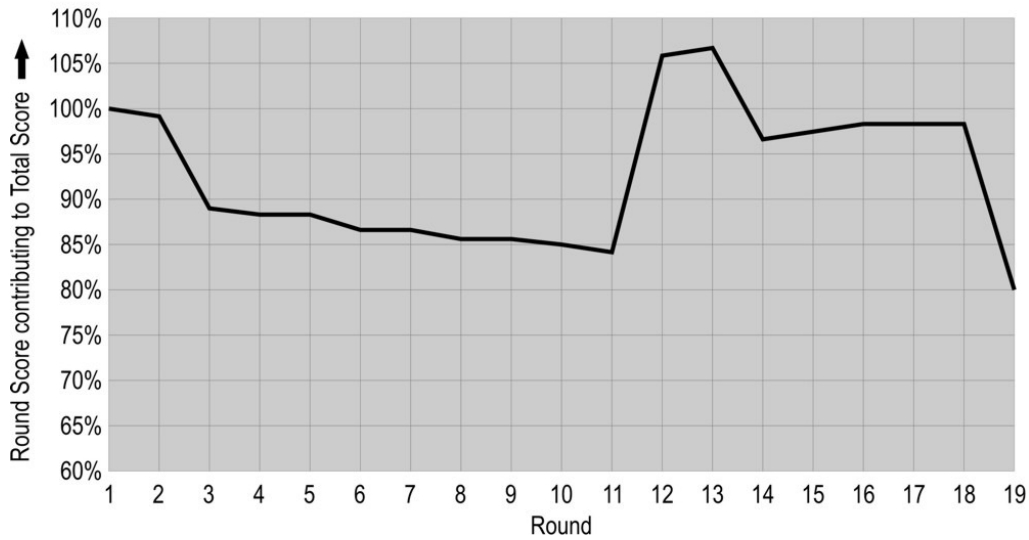
The Track Payback is applied differently to the Round-by-Round Penalty for your tyres. The chart above has a 'timeline' horizontal axis showing the numbered Rounds of the Championship; on the Speed Profiles chart it showed only a 'span' of races. A Speed Profile can be slid anywhere along the timeline according to your strategy, whereas the Payback Profile is predetermined for each Round on the calendar. For the Harder tyre, the Track Payback starts at 10% of your Round Score and falls uniformly by one-nineteenth to 0% at the final Round. The Softer tyre does the exact opposite, rising from nothing to 10% by season's end.

Lets look at a typical example then, putting together these two types of penalties:

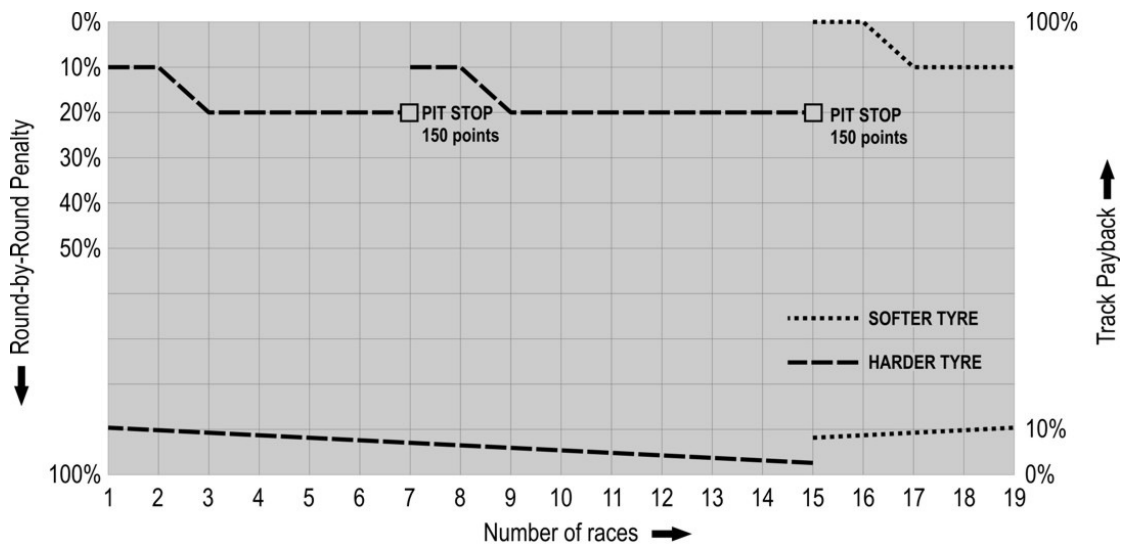


Here you can see a player who nominates to start their season on the Harder tyre, make a single Pit Stop and finish on the Softer tyre (remember, you must run both tyres at least once during the season). At Round 11 the Harder tyres pass their 'Going-off' point and they receive their Pit Stop Signal. Now in theory, our player could continue on these tyres until Round 13 but decides to Pit immediately and switches to the Softer tyre. You can see that at Round 12 while they loose a Basic Penalty of 150 points for pitting, they immediately benefit from the new Softer tyres.

Shown below is chart that combines for this strategy the two penalties to give an overall profile:



Now of course there are a near infinite number of Pit Stop Strategies, so lets just pick one at random to illustrate the difference. This shows a player who starts on the Harder tyre, pits for another set at Round 7 then runs a five race final stint on the Softer tyre.



Looking at that Track Payback, it is theoretically better start on the Harder tyres and finish on the Softer tyres. However, the timing is key; you must of course be a careful you don't commit to the Softer tyre too early if you only want to make a single pit stop. Precisely how many Pit Stops you make though is up to you; the more you make the greater the penalty but the more scoring potential you have. Pit Stops are very 'cheap' this year and don't forget that at each Pit Stop you can include another Ace if you wish.

There's nothing to stop you taking advantage of the Softer tyres pace over two stints and sticking on the Harder tyres for just a couple of races at the end. You can as ever think on your feet and adapt your strategy. If your team is unexpectedly brilliant from the off, you may want minimise the number of pit stops; conversely if it's appalling, you may wish to increase the number of stops you make.

### **The GPL Pit Stop System; the Parallel**

If you think of your Team as a Formula 1 car then the GPL uses penalty points to mimic its time losses during a race. These are split into three parts; first the tangible loss making a pit stop, second the less tangible loss caused by its tyre wear and thirdly the loss caused by its fuel load.

First off, let's discount the last of these three. With the ban on race refuelling this year, every car will (more or less) start the race on the same fuel load, around 240 litres. So, as its the same for everyone, we'll ignore it.

So, lets look at the pit stop, splitting it into two time elements. First there is the "in pit lane" time that is roughly equal for every car, as they must all observe the same strict speed limit while in the pit lane. The second element is the time the car spends stationary in its box. In theory with no race refuelling and only tyres to change the time should be the same for every car. Consequently, a pit stop can be regarded as a nominally constant time. This is simulated at your GPL Pit Stop with a fixed Basic Penalty.

Back on the track, a Formula 1 car's speed is ultimately determined - like that of any other car - by the four bits of rubber at the corners. Bridgestone manufacture four different dry weather compounds for a Formula 1 season. At each race - using simulations based on previous data including things like track surface and temperature - they elect one compound as the Prime, i.e. the one they consider the best compromise between speed and wear. In addition, they also supply the teams with a softer compound from the quartet as the Option tyre. At some circuits this is the next softest compound, at others it's the next but one. For simplicity and because we all understand what it means, I haven't used the Prime and Option monikers anywhere, instead calling them just the Harder and Softer tyres.

Given that the Harder tyre is the 'ideal' tyre for the race, what use is the Softer compound? Well, the most obvious use is in the final stages of qualifying when its higher wear rate isn't detrimental. However, it's other purpose is to comply with the FIA Sporting Regulations that state both compounds elected by Bridgestone must be used by each competitor during a race. And occasionally, track conditions do mean the Softer tyre become the 'ideal' compounds to race on. The differing grip and wear rates of these two tyre compounds is simulated in the GPL by the Round-by-Round Penalty.

The final part of the parallel is the so-called Track Payback. In previous seasons, a pattern emerged as to when the teams would use the different tyre compounds. Generally, the teams would use the Harder tyre at the start of the race, and the Softer tyre at the end. This was prompted by the kinkily named 'rubbering-in' of the track during the race. At the start of the race, the track is usually 'green', that is freshly swept and open textured asphalt. As twenty Formula 1 cars on their rapidly wearing tyres circulate perhaps sixty times, a thin layer of rubber is laid down on the racing line, the 'rubbering-in' of the circuit (if you imagine pushing a lump of Blu-Tack onto tarmac then imagine pushing the same lump onto a tray of Blu-Tack, you'll get the idea; these tyres really are that sticky). The chemical composition of the Softer tyres mean they benefit more than the Harder tyres from this patina, while conversely they are more readily damaged by a 'green' track. And with the ban on race refuelling and all cars starting with 240 litres on board, the Harder tyre becomes an even shorter odds favourite to start a race.