

5: The importance of reviewing the data

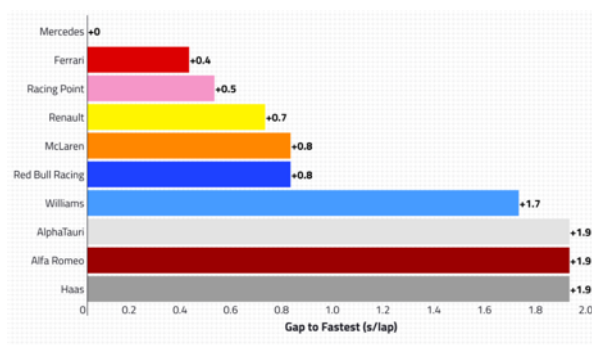


Saturday morning, I was sat in bed with a cup of tea, my little weekend luxury, flicking through my phone. Checking emails and messages then, as most of us probably do, drifting into social media space. I hadn't realised it was the Austrian Grand Prix this weekend, I love motor racing but this covid period has made my feeling for sport tepid. But, catching it on social media feeds and seeing it was on, re-ignited my interest and I looked through the data-sheets for the free practice sessions.

As I was looking at these it made me reflect on our review process in maintenance and the need for the data to drive this meeting. Back to F1....

For those not familiar with F1, at present they run three 'free' practice sessions, then a qualifying session and then the race itself. The practice sessions allow the team to set the car up for the optimum performance in the race, and although they are 'free', everything is timed and watched. In practice sessions often cars are running a variety of fuel loads and testing new aerodynamic settings and the like. It can be hard for teams to determine the order and ultimately the likely race place on the Sunday. At the end of each practice day, I'm sure all the teams have a review meeting and pour over the data.

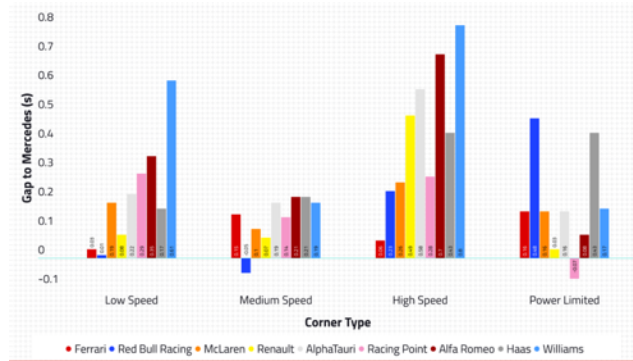
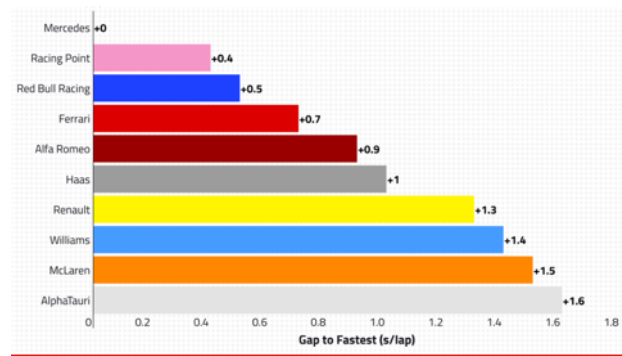
What management information can they glean from the data?



This if you like is the raw data, it shows the fastest lap speed each car set, irrespective of driver. And on the face of it Mercedes were a step ahead of the field. The drivers in the press conference, obviously guarding their own strategies, were indicating there were fuel differences, and other factors at play.

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So, by taking the raw data and knowing the speed lost per litre of additional fuel carried, and knowing the fuel in the car, the analysts are able to develop this chart showing the fuel-corrected speed gap of the fastest car in each team. Interestingly we see Mercedes still top of the pile, but worryingly for Ferrari they have dropped to fourth fastest.



So now if you are Mattia Binotto (Ferrari Team Principle) you ask your analysts to churn the data once more to try and find “where we are losing time?” “Where are our opportunities to improve our performance?” For those that follow F1, they will know a problem with the 2019 Ferrari was low speed corners, this has been improved, the challenge seems to rest in the medium speed corners? (Appreciate this is a simplification to demonstrate a point)

Different groups of people can read this information in different ways depending upon the lens you are looking through. The **back-room engineering team** are looking at the data and can read that the mechanical grip of the car might need revision; they can see this from the medium speed performance data (low speed tends to be more engine power, high speed aerodynamic performance). The **pit wall team (planning)** are looking to race strategies and how fuel loads might be applied on different tyres etc. Meanwhile, the **pit lane (production)** are preparing for potentially more pit stops, checking materials, checking tooling, practicing, preparing. Meanwhile, the **longer term planners** are focussing on the whole season as at each track the characteristics of corners and straights are known. They’re focussing on how the season is won!

Clearly, in such a margin driven sport there is a plethora of data that all builds the management information about how to run and win this race, and the next and the next.

But I thought an interesting insight and one reflective of our own performance reviews and the data we collect. In F1 they don’t wait for the race result (the outcome) to intervene and make changes for the better. Instead, they record data points throughout the entire race process and make pre-emptive changes to try to win the race.

Often when EngPro review organisations seeking performance improvements, one area that is weak is the review meeting, and particularly a review centred around data-driven metrics. What is the maintenance process telling us, what steps are performing well, what needs management attention and resources to improve. Having the data, and turning it into management information is crucial to you winning your race. How good is your review process?

I’m interested to see the race result tomorrow now....

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For more information on the services we provide regarding improving maintenance performance, please call or email me.

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