FEDERATION INTERNATIONALE DE L'AUTOMOBILE

Press Information

2014 Chinese Grand Prix
Friday Press Conference Transcript

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TEAM REPRESENTATIVES – Pat FRY (Ferrari), Charlie WHITING (FIA), Yasuhisa ARAI (Honda), Andy COWELL (Mercedes AMG HPP), Rob WHITE (Renault Sport F1)

PRESS CONFERENCE

If we can start with you Charlie? The new power units have excited a lot of debate since the beginning of the year. Will you once again briefly take us through the philosophy behind this technology and why F1 believes it was the right time to introduce it?
Charlie WHITING: I think it was fairly clear, we're going back a little while now, that Formula One, being the foremost single seat category, should be at the forefront of technology. I think bit was also clear at the time that the motor manufacturers were also looking towards conservation. So we felt we had to go that way. I think to ignore that would have been rather silly. I think we would have possibly lost some manufacturers and certainly deterred others from coming in.

I guess efficiency plays a part in that as well?
CW: Of course that was the major goal. We started four years ago with the engine manufacturers. We had quite big meeting with lots of them assembled in Paris. It was the 27th of April, in fact, in 2010. We assembled them all together and the initial goal was to have a 50 per cent increase in efficiency but over a period of time that became diluted somewhat because it appeared that was rather ambitious for the start of this new engine era. So we ended up with what we have now and that is an engine that everyone can see is about 35 per cent more efficient than the previous engines.

So, Andy Cowell, does that represent a small step in the right direction or a giant leap?
Andy COWELL: It represents a giant leap – going from internal combustion engines, naturally aspirated at about 30 per cent thermal efficiency up to engines where we're all targeting 40 per cent thermal efficiency is a huge step, a huge introduction of new technology both on the internal combustion engine for efficiency and also on the two energy recovery systems that we've got on the power unit.

What do Mercedes expect to get from this project in terms of technology that can be eventually transferred to the road? Is that a long way in the future or is it already happening?
AC: It's already happening. The regulations were specifically written to take some of the ideas are already in the road car world, so downsizing, downspeeding and

turbocharging but adding some new, interesting technologies in there such as the electric turbocharger as a specific example and those sort of projects are already being worked on.

Can I ask the same question of Rob White. What does Renault expect to get from this project in terms of road cars.
Rob WHITE: It's a big leap, as Andy says. I share the remarks that transfers are already happening. The transfers are not only specific technologies, the e-turbo being one of them, but also the fundamental alignment of the mission we have. Our challenge now is to race, to go as fast as we can with the given fuel allocation, which is a very, very similar mission to our road car colleagues who have to use the smallest amount of fuel to get a given mission done and that's extremely close.

There's been quite a lot of talk about how the power units are contributing to racing and we've heard some unusual suggestions for things might be changed. Firstly, do you think there are problems with the racing this year? Secondly, what do you think of ideas such as shortening races, raising fuel limits etc. Do those suggestions miss the point?
RW: The main problem I see so far is that Andy has won rather more than I'd like and we have win less than I'd like. The specific suggestions are just shifting the goalposts rather than doing anything fundamental and I think as Charlie indicated the basic parameters that we're now racing with were decided well upstream in sufficient time that we knew what to do with them. I honestly feel that the numbers were well judged and I think the 100kg/h fuel limit and the 100kg for the race, as well as having the benefit of being nice round numbers, also play out more or less as predicted in terms of the level of performance and the level of fuel saving needed to get to the end of the race. I think we've seen in the early races that there hasn't been an excessive amount of fuel saving that would perhaps have damaged the show. I think we've seen more recently, particularly in Bahrain… We all enjoyed the race there, it was the first one I saw from the comfort of my living room and it was certainly an exciting one to watch.

Now we've heard from two of the manufacturers currently involved in F1 but let's get the thoughts of a manufacturer that will next year return to the sport after six seasons away? Thank you very much Mr Arai for coming to our press conference. What is it in the new regulations that has encouraged Honda to come back into Formula One at this time?
Yasuhisa ARAI: Thank you very much. I am delighted to be here and to be given this opportunity by the FIA to speak at this conference. As you mentioned we will return in the year 2015 for the Formula One. One of the major reasons for our decision was the new regulation introduced this year and that the various environment… I mean green technologies in the new Formula One power unit, as well as the total energy management are both very challenging and significant. The new regulation encourages each power unit supplier to pursue the ultimate combustions efficiency and high pressure direct injections, such as many, many new technology. Thus the challenge is to convert each unit of gasoline into energy and this is expected to be reflected on the huge production mode. That's the reason why.

Q: You're setting up a new base at Milton Keynes in the United Kingdom. What will that facility be responsible for in the coming years?

YA: That, we will open June this year. Now still under construction but that factory is to do the engine maintenance for the races and rebuilding the Formula One engine and also to go to the race-track for the trackside service. That's Milton Keynes.

Q: Pat, as someone more responsible for the chassis side of things at Ferrari, let's talk about how you integrate these new power units with the cars. Have you found that the chassis and engine departments have needed to work closer together this year or is the relationship pretty much the same as always?
Pat FRY: I think with the changes to the power unit this year, there's obviously a huge amount more technology to understand and that has definitely pulled the chassis department and the engine department closer together. That starts everywhere from the simple, basic simulations that you do before an event to tuning the car. Everything is now inter-related. So where you used to play with a diff and brake balance and whatever, you've now got all the various ERS levels of charging and deciding what to do with waste gates and turbos. So there's a huge amount more interaction between the two groups.

Q: Has the engine department given you a power unit on the minimum weight or are you having to shed weight from the car?
PF: We're fairly close to the weight limit. I'm sure everyone is struggling. The combination of an engine on the weight limit and just all the bits and pieces we want on a standard car, it's quite a challenge to get down to the weight limit anyway. But yeah, we're just on that limit.

QUESTIONS FROM THE FLOOR

Q: (Dieter Rencken – Racing Lines) Question to Andy and Rob and Mr Arai if you would like to contribute as well please: Andy, you were talking about 40 per cent efficiency. Now, we've got relatively immature technology at the moment. What sort of progress in terms of efficiency do you engine manufacturers foresee over the seven-year lifecycle of these engines?
AC: It's a difficult one to predict. We're working hard to improve the efficiency of the internal combustion engine, make sure that every single drop of fuel that goes in… and that's where working with Petronas helps tremendously to get us to the point we're at today and to move forwards race by race with fuel developments. And then it's just mastering the conversion efficiencies – so every single step where we're converting the energy, just improving little by little and then with a new power unit homologated next year. I guess I'm not coming up with a prediction for exactly how much we're going to improve year by year – but I imagine it's going to be very similar to when we were in the naturally-aspirated era, where there were times when we thought 13,000rpm was impressive and we all ended up well over 20,000rpm. So it'll be a similar level of development.

Rob?
RW: I think Andy was cautious when saying 40 per cent. I think to be competitive you need to be a bit better than 40 per cent already. I think we shouldn't underestimate just how important that is in terms of automotive technology. I think these power units are fantastic pieces of kit in terms of the raw, thermal efficiency that is achieved. Better than any road car engine by a margin. And I think it's also important to draw attention to the fact that the energy management challenge is also part of the real efficiency of the race car which is in addition to the thermal efficiency

of the power unit. There will be rapid progress even during the course of this year. We've seen progress in the early races without any change to the underlying hardware. That's something that will continue during the season. That's something that will take another step forward over the winter – as Andy as suggested – when we homologate a new version of the power unit for 2015. This is another mirror-image of what happens in the big, wide world outside, where every iteration of our road car product brings with it a significant step forward in fuel consumption, which of course is the same thing for us: a step forward in performance for the same fuel flow or fuel limit.

Mr Arai, would you like to comment or is it a bit too early for you to make any predictions.
YA: There is a strange feeling because our door for 2015 is still not open yet. So I can make just a small comment. How to make the good efficiency is just a three major fields. Technology fields. One is combustion itself – combustion chamber design, another one is how to recover the energy, that's very important for these new regulations and finally the torque management. Positive and negative torque management is very important to make a good, *fast* car. That's my comment.

Q: (Gary Anderson – Autosport) As you were saying Andy, revs, that's always been the push, everybody wanted to get more revs, more revs, more revs. This year the regulation maximum is 15,000 but on a good day you might see twelve. Do you see that changing, and if it did change do you see that helping the noise?
AC: You're correct with regard to the revs that we're running on the track. I don't see that changing, I don't see the need for the revs to change to change the noise of the power unit. The principal reason why the engine is quieter is the turbine wheel and the muffling effect that you get from that. That's one of the key technologies for recycling the waste energy that would normally go down the tailpipe so it's a key aspect of the technology that we've got. There are other things we can do though with the tailpipe, perhaps, to change the noise.
Q: (Gary Anderson – Autosport) Could I just add a second part: why is it 12,000 rpm instead of 15,000rpm?
AC: The fundamental reason is the fuel flow rate formula so you get the 100 kilograms per hour once you're at 10,500 rpm. If you rev an engine faster, you generate more friction and friction is the enemy of an engine and the enemy of a race car because you have to reject it to the radiators and there's then an aerodynamic deficit from doing that. None of us want to be below 10,500 rpm but none of us want to be at high revs because all you do is create heat.
RW: There's not much to add. The fuel flow curve, the fuel law is the thing that fixes the engine speed as Andy indicated. We hear a little bit less about the slope below 10,500 than the maximum which is 100 kilos but it is that knee point that fixes the rpm at which the engines make the best power and best efficiency and the engine speed above that is to do with the spread needed to pass the gear ratios.

Q: (Marc Surer – Sky Germany) It's in a similar direction, my question for the motor engineers: what can you do to increase the noise? There's a lot of talk about it but I haven't heard a solution yet.
RW: First thing to say is that the noise of the current engine is a consequence of the overall layout, the architecture and so forth. I think in terms of the possible adjustments to change the noise it makes, I think we're at the beginning of a consultative process that will kick off in about an hour's time. Andy's alluded to tail

pipe changes – that's something that could be a way to go. I think the scope to fundamentally and profoundly alter the noise of the engines is extremely limited by the type of technology that we have deployed and therefore I think we need to be realistic about the scope of any action that we might take but of course we're sensitive to the subject and we'll certainly participate in any of the studies that might lead to actions being taken.
PF: I think the engine people in the room know the problem a lot more than I do. I think what Andy said about... you've got the turbo there to try and take all the energy that we can out, so it's always going to be quieter. There's a round of meetings starting today, in fact, that will discuss and try and work out how to improve the situation.

Q: (Dieter Rencken – Racing Lines) Mr Arai, if we have a look at Mercedes, they're supplying their own team and three customers. Renault are doing four customers; Ferrari are doing one plus two. Next year, you've got McLaren. Could you give us some insight into your plans for both 2015 and thereafter in terms of customer teams, whether your relationship with McLaren actually permits that, please?
YA: So, for year 2015, McLaren is our only customer. I don't think about the future, because we want to concentrate on next season.
Q: (Dieter Rencken – Racing Lines) I understand your philosophy there but surely you must have done costing and recovery against the units and that must surely include some sort of sale or customer-type project or do you not have any plans for customers at all?
YA: Of course we want to have good results next season and see the results from other manufacturers. Please chose our power unit for next season. If teams want to use our engine or power unit, we can deliver after year 2016 but right now there are no plans.

Q: (Gary Anderson – FOM) Rob, it's been fairly well documented that you obviously haven't started the season the way you intended to. Do Renault need any concessions from other manufacturers or the FIA, to do the improvements that you need or are you happy to work within the regulations and do what you're allowed at the moment to catch up?
RW: I think the first thing to say is that the technical and sporting regulations are the same for all the engine suppliers. We knew what we were getting into and we're in it now. We're not lobbying for any regulatory change. I think that for the time being our priority is to continue the recovery actions that we've put in place and I expect to pursue that over the course of this season.

Q: (Michael Schmidt – Auto, Motor und Sport) Question to Charlie: the rules allow changes to the engines if it is for reliability, cost-saving and safety. But let's say if you do a change for reliability reasons and you make a certain component stronger, isn't that – let's say – automatically gaining horsepower through the back door?
CW: I think that the system that we have now is the same as it's been since 2006. If an engine manufacturer asks for changes for reliability, we always assess that, we always try to see if there is a possible – as you put it – back door route to get more performance but we are absolutely confident that the changes that we've allowed so far this season are purely for reliability and we also have the fall-back of consulting all the other engine manufacturers so if we agree to some changes for reliability and

we then circulate it among the other engine manufacturers, they have the opportunity to highlight any potential back door treatment, as you put it.

Ends