NTT IndyCar Series News Conference

Friday May 24, 2019

Press Conference

Jay Frye

President, INDYCAR

Andy Damerum

Red Bull Racing business Development Engineer

Ed Collings

Head of Composites and Structures, Red Bull Advanced Technologies

Scott Dixon

NTT IndyCar Series Champion, Chip Ganassi Racing

THE MODERATOR: Good morning, everyone. Thank you for joining us for a very special announcement regarding a new partnership between INDYCAR and Red Bull Advanced Technologies on the design of a safety initiative for the NTT IndyCar Series competitors. Just two weeks ago in the INDYCAR Grand Prix here at the Indianapolis Motor Speedway road course, INDYCAR debuted the advanced frontal protection device in competition to advance driver cockpit protection.

This safety component will be used by all competitors at all series events, including this Sunday's 103rd running of the Indianapolis 500 presented by Gainbridge and for the remainder of this 2019 season.

The AFP device was the first of two phases planned by INDYCAR in regard to driver cockpit protection, and today our guests will share the plans of phase 2 of this process. Joining us for the announcement are from your right to left, Red Bull Racing business development engineer, Andy Damerum; Red Bull Advanced Technologies head of composites and structures, Ed Collings; INDYCAR president, Jay Frye; and five-time and defending NTT IndyCar Series champion, Scott Dixon of Chip Ganassi Racing.

We'll open with Jay to announce the partnership. Exactly what is phase 2 of the safety initiative for advanced driver cockpit protection and when will it go in effect?

JAY FRYE: Well, thank you. First of all, I want to thank everybody for coming. It's been obviously a very long month, so we appreciate all of you. We appreciate you and your family's sacrifices for being here, so thank you.

We're very proud to announce today that INDYCAR has partnered with Red Bull Advanced Technologies on what we think will be a new industry standard for driver protection. It's called the aero screen, and that'll be the next phase. We have to come up with a name. But huge thanks to Christian Horner, Jonathan Wheatley, Andy, Ed, everyone at Red Bull, Red Bull Advanced Technologies for their enthusiasm and commitment to assisting INDYCAR and our teams and drivers.

We also want to thank our longtime partner, Dallara, Andrea Pontremoli, Luca Pignacca for their continued support, as well, as well as Bill Pappas and Tino Bell of INDYCAR for their tireless efforts on this project.

The plan is to -- we'll have a prototype in probably 30 days, and we'll have real pieces in another 60 days. Get them on cars this summer to test, and then at some point, we're going into the off-season around November so we'll have one for each entry. The plan is to put this on all the cars in 2020 is our goal.

THE MODERATOR: We'll move over to Ed and Andy. Either of you can lend your expertise to the next couple of questions. Why did INDYCAR come to Red Bull Advanced Technologies for this project, and what unique expertise did they bring to you?

ANDY DAMERUM: So we got experience with, back in '16, beginning of '16, working with the FIA on an aero screen program, something similar called canopy. The FIA asked for a number of companies to look at protection devices; halo is one of them, and the windshield was another one.

So another F1 team looked at designing a concept, which we came up with. So we had experience of working with per specs technologies and safety devices. So we got quite a lot of experience in this area.

The FI didn't use the system in the end, but it chose to use the halo system, and I think that was later on that year we got contacted by INDYCAR to see if there was an interest and see if we could share our IP with them.

THE MODERATOR: A little bit about how this aero screen works to reduce potential injury to the drivers and some of the complexities involved with this aero screen.

ED COLLINGS: Yes, so we've created a system that protects the driver from a very large range of threats, perhaps more so than any other driver protection system in other series. INDYCAR is a unique series with limited runoff on the edge of the track, and it was important that we could protect the drivers from smaller debris as well as very large items. So we have a system with the screen that can protect from smaller debris and then a very strong structure around the top of that screen and with a strut in the center that can deflect large wheel upright assembly at a very high speed.

So that's a key attribute of the design, but then we've had to manage lots of other things to make sure we don't introduce other compromises. So we've had to design around just the simple things, towing and lifting the vehicles, but also a lot of more scientific work in terms of preventing reflections that could distract the driver. We have to make sure that we don't have any fogging occurring in any damper, more humid environments, and many other attributes. That's a small set of examples really of the very detailed study that we've undertaken, my team in Milton Keynes in the UK.

THE MODERATOR: Scott, this obviously directly affects you as a driver in the NTT IndyCar Series. Your thoughts on this windscreen, Red Bull Advanced Technologies and what it means to you as a driver in the series?

SCOTT DIXON: Yeah, I think it's always been very important for the NTT IndyCar Series to be at the forefront of safety initiatives, and it's been a work in progress for a long time. Having run the initial aero screen, we felt that for the driver it worked well. There was no issues with it. I think cooling was maybe the only thing that was really something that was a problem to start with, but something that could be fixed easily.

As it went through testing and things, I think we, as I said, the drivers in INDYCAR always wanted to make sure that if we did run something that it was going to be something great, not something rushed, not something that hadn't been tested well, and it's exciting to have Red Bull Advanced Technologies partner. We know the powerhouse that you guys are and what you can provide, at the forefront of the motor racing industry. It's exciting for all of us drivers and I think something that will be extremely exciting for many categories. We've seen other versions of this, but I think this one covers a lot more bases.

Q. Scott, you drove the prototype here the previous windscreen project. How much different is this in terms of the height? It looks like it's a bit more -- bit taller than the other one was, and also this will have a piece in the middle whereas before it was kind of one concave piece of glass or safety glass?
SCOTT DIXON: Yeah, I think the piece in the middle will be something you won't notice too much. It's very similar to the addition that we have right now as far as line of sight for the driver. But I think it -- until we get it into running conditions through the summer months, we'll obviously pick up some differences. But I think this adds more to it. It's structurally more sound. It is higher, creates obviously more room for error, as well. So I think it's just a far better piece that has been improved from the original concept.

Q. As a driver, you have tear-offs on your helmet, if you get oil or whatever, to clear your vision. With the windscreen, you can only, I guess, pull off a tear-off during pit stops. Do you pull off tear-offs that often, or is it very rare that you pull off a tear-off, that it might become an issue with the windscreen being dirty as a driver?
SCOTT DIXON: It's fairly rare. I think Indy 500s used to start with many, up to 15. But I think with current day racing and maybe just how sound the cars are now from mechanical failure or issues, it seems that you really only use four or five. But yeah, it is an added concern, I think, and one that we've brought up many times, but we think we have additions that will help with that. And that's something probably down the road that you'll try to refine, as well.

Q. Will there be any difference between the oval kind of specification of it and the road course specification of the aero screen?
SCOTT DIXON: From what I understand, no. That might be a question for you guys.

ED COLLINGS: It's the same structure.

Q. Two questions for the gentlemen of Red Bull. Number one, what I see the driver sitting very deep now with the windshield around him. In case of an accident, can the windshield be removed by the safety staff when the driver has to be removed from the cockpit?
ED COLLINGS: Yes, certainly, this is one of possibly 20, 25 topics that we've had to explore and come up with solutions working with the AMR INDYCAR safety Team to ensure that they have a very fast and prepared and practiced method of removing the parts of the screen. We use the jaws of life through the IndyCar sponsor, and they deliver the equipment that is perfect for the job.

Q. And the second question, in case of debris flying on to the windshield, can you tell us more about the materials? They have to be very hard, very strong, right? What type of material is it?
ED COLLINGS: So we have a combination of composite materials, very high-strength carbon fiber epoxy and also titanium is being used, so really the state-of-the-art technology.

Q. In the images you're showing us, the AFP device is still in place. Can you comment on the future of the AFP?
JAY FRYE: Well, it actually in phase 2, which is a great job by the Rebel guys. The AFP device comes off, and the frame for this screen just bolts on to it, so it's in the same spot. So that's already been done. So the cars are already equipped to take on this frame by taking off the AFP device.

Q. Jay, forgive me if this isn't under your purview, but seeing as this is the theme of this conference is partnerships and working relationships, it's clear that IndyCar must have some kind of working relationship with NASCAR, seeing as the Air Titans are on track from NASCAR. With that being said, and in terms of scheduling double series, IndyCar Cup events, why isn't that something we can ever do with IndyCar and NASCAR?
JAY FRYE: Why is it something we never do? Well, we think we can do it, so it's something we're exploring for down the road. Yeah, we're certainly very interested in that.

Q. Like why is it taking so long to finally get around to it?
JAY FRYE: Well, I think part of its timing, right, the schedules -- there are different places we could do it. There's different -- there are broadcast partner situations. There are different things. But we started talking about it a couple of years ago. We're certainly interested in it. It's got to be the right place and the right time of the year for both of us. I think there's no reason why we can't, so it's definitely something we'll have conversations about or continuing.

Q. It looks to me like this screen is taller than the previous aero screen, or is it the same height as the one we've previously seen?
ED COLLINGS: So part of our work has been to study previous crashes in the IndyCar Series and to detect where the helmet position was during those crashes. One of the important parts of our design is that we don't put a very rigid structure in a position where the helmet could make contact in a high-G instant. So in order to deliver that, we've created an exclusion zone where this device, this protection system does not come into -- doesn't enter that zone so it wouldn't impede the driver's head. So it's important that we haven't introduced any compromises by adding this assembly on to the car.

So as a result, that has defined the height of the device. It's quite similar to the previous windscreen design, but particularly it's higher at the rear edge in order to protect the driver more comprehensively than the earlier prototype would have done.

JAY FRYE: Yeah, part of it, I think, too, a little bit, but it's more of an optical illusion because this one has a frame. The one we tested at Phoenix and here last year didn't have a frame, so it was clear. You didn't see how tall it was.

Q. Then that begs the question, the frame, is it high enough to not be a visual issue at like Texas Motor Speedway?
JAY FRYE: Yes.

Q. Two questions for Jay. When did you start thinking Red Bull Technologies? I know that you used to be the Red Bull team owner in NASCAR --
JAY FRYE: Well, they promoted me. Thank you. (Laughter).

Q. Did that help you in saying, hey, here's a good company that we may want to look at to get involved with this project?
JAY FRYE: Yeah, obviously they're great friends. We talk to them all the time. When they came out with this, their application a couple of years ago, it was like, that's very cool. That's kind of what we wanted to do. We had the same intent. The last couple years we've tested our own version, and earlier this year it was like, we just -- we called them and said, we want what you have on your -- your idea on our car; how can we do that, how can we work together.

They immediately jumped on it. It was basically that day. What's the next step, how is this going to work? In the last 60 days, it's incredible the amount of work that they've done. We'll have a prototype here pretty soon, so this thing is rolling right along. We're very confident in everything they're doing. They're great friends. They've got great pride and equity in what we're doing here, so we're excited to see the final product.

Q. And also from looking at it, it looks like the aero numbers are certainly going to change with it. Do you have kind of an early indication from Tino and your staff how much it will change?
JAY FRYE: We do, yeah. The original one was pretty neutral. On this one there might be a little more drag. So that's part of the testing process we'll do. What we need to do if there is more to compensate for that. So it's a little bit, but it's well worth it.

Q. Jay, how much were you guys concerned, or I don't know if concerned is the right word, about the look of it, to keep the traditional open cockpit look. Looks like you could almost put a hatch over the top of it.
JAY FRYE: Well, certainly, because that was one of the first things with them. We thought theirs looked very cool, so it was like, how do we get that on our car. Remember when we did this car a couple years ago, we would put out sketches of the car to the fans to see what their opinion was, and then we'd put out a rendering of the car, so this car, remember we kind of reverse-engineered it where we did esthetics first and the performance was second. So obviously we put all that effort into the aero kit, so we wanted to make sure

the screen matched that, and they've done a phenomenal job. It looks, I think you see, it has a fighter jet kind of look to it, so we're excited about that.

Q. What happens when you're running behind a guy and he starts blowing oil and it covers that up with oil?
ED COLLINGS: So we are working with partners on the program. One of those is a tear-off supplier, so developing a tear-off material, and we can have a stack of very large number of tear-offs on the screen. Currently working on some testing at the moment to ensure that we keep very good visibility and avoid any distortion while looking through that stack of tear-offs. But that's a solution to that.

Q. Where do the tear-offs go?
ED COLLINGS: Across the front face.

Q. On the track when they pull off?
JAY FRYE: No, they do it when they pit. They'll pit, they'll tear it off.

Q. What if they're really covered up -- you're saying you've got to make a pit stop to clear your windshield?
JAY FRYE: Yes.

Q. Question for the Red Bull guys: Your original windscreen was not chosen by the FIA for F1, they chose the halo. My understanding, and I might be wrong, was because of strength. Does this frame, is it really -- is the new design a combination of a halo and a windscreen together? And does the frame now make your solution strong enough that it would meet the FIA requirements?
ANDY DAMERUM: Well, the frame that we've got there, it's not a halo, but we're picking up from the AFP point, and also we're picking up off the back of the roll hoop, so it is extremely strong. What are the loads we're looking at?

ED COLLINGS: So the loads are equivalent -- well, they are equivalent, they are the same as the FIA halo loads, so it's equally strong. I think part of the reason that the FIA didn't choose the aero screen initially wasn't so much the strength but the time it would take to design around the other concerns of visibility, reflections, and they felt they didn't have time, they were under pressure to introduce something quickly, and the halo removed some of those concerns from the design process. But also in talking to IndyCar at the beginning of this project, that does also remove some of the protection from smaller debris, which is something that IndyCar felt was essential for their series.

So we think this is the right solution, more comprehensive solution, more fitting for IndyCar, and we're working hard with a good group of engineers to design out all those other issues that perhaps prevented the FIA from being able to react quickly enough.

Q. Will that design be the same for the next-generation car is the first question. Or will it be more kind of like fed into the bodywork of the new car? And then the second question is how close to final is that cockpit cooling vent on the nose?
JAY FRYE: Well, I'll take the design one. For the future, yes, this will -- a hybrid of this will be on the next generation of car. It might be that one, it just depends. And then part of the thing -- so when you look at the Red Bull one, obviously there was an angle to it where it went into the monocoque, right, so this was -- with this current car we were not able to do that because it couldn't take the load there basically, like Edward and Andy were saying, so they tied it into the roll hoop, which we thought was brilliant. So the roll hoop actually created this additional strength that was not really the original intent. So again, they've done a phenomenal job coming up with some different things, so this thing is very strong.

ANDY DAMERUM: On the cockpit cooling, that's something we're working with Dallara on at the moment. I'm not sure whether this is the final version of cockpit cooling, but it's going to be very similar to what we've got.

Q. A question to the gentlemen from Red Bull Technologies. Technically getting the approval, can this system, this windshield, adapt to any kind of open-wheel car, or is it just for IndyCar?
ANDY DAMERUM: I think it really depends on the chassis and the structural properties of the chassis. Of course, you could put a screen on any car. It's the frame which you've got to -- how you fit that frame on to the chassis. That's the question.

ED COLLINGS: Certainly a version of this concept could be fitted on to other racing series.