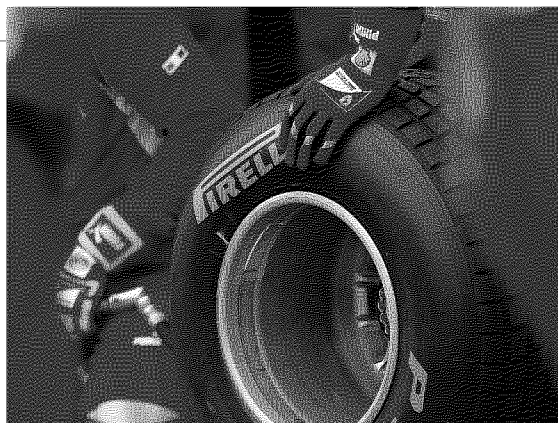


Less is more and other new spins on the tire



Pirelli returned to Formula One this season after a 20-year absence, becoming the sole tire provider for the series. Like much else in elite racing, the tire is a constantly changing piece of technology.

Treading on Shanghai's grand stage, the racing series lines up with its evolving technology this weekend for the season's third race, the Chinese Grand Prix.

Demands of organizers and drivers are at odds, complicating maker's task

BY BRAD SPURGEON

Call it the tire conundrum.

As the teams try to devise a winning combination of technology and talent and the series organizers aim for entertaining races, the Pirelli Tire company is striving to create the best rubber compound in its tires to satisfy both the teams and the organizers.

How to balance these apparently opposing needs is the main challenge of the series as it heads into the third race of the season, at the Chinese Grand Prix in Shanghai on Sunday.

As Patrick Tambay, a former Formula One racer and television commentator, asked on Facebook the day after the race last weekend in Malaysia had resulted in a thoroughly different show than what spectators have been used to in recent years: "The question I have

this morning is: 'Is it normal, nowadays, to deliberately build racing tires that last for only +/- 56 kms at the most and depending on who's driving?'"

Pirelli returned to Formula One this season after a 20-year absence, becoming the sole tire provider for the series. At the request of the organizers to make the races more interesting, Pirelli tried to create tires that would wear out more quickly than those of its predecessor, Bridgestone, which left the series last year.

As tires wear out, they lose their grip, and so the driver must slow down, which exposes him to losing position to another car.

The tires also must be changed more often, which means there are more pit stops, increasing the possibility of a change in race leaders.

Last year, drivers regularly made only one pit stop per race. This year, Pirelli's goal was to have drivers make at least two. But after the first two races, there have generally been three or four stops.

When they tried the tires for the first time during winter testing, the drivers began to grumble, suggesting that they might have to make up to five pit stops per race. In addition, rules limit the number of tires that can be used for each race weekend. So the drivers feared that in order to preserve their tires, they would not be able to drive much during the practice sessions on Friday and Saturday.

Pirelli reacted by making a more durable tire. During the season-opening Australian Grand Prix last month, most drivers made only two or three pit stops



and one driver, Sergio Pérez, a rookie at the Sauber team, even managed to change his tires only once.

So Pirelli began to ask a fundamental question again: Just how far should it go in producing a tire compound that lasts?

“We are trying to find our feet, knowing what the right point is, so that we don’t over-stretch or exaggerate, but equally, if we are too conservative we will be back to square one,” Paul Hemberly, the director of Pirelli’s motor sports program, said at the race in Malaysia last weekend.

Teams and drivers want the best performance from a tire for the longest period of time; Pirelli and the series’ organizers want to create a rubber compound that will provide just the right amount of wear to ensure an entertaining race.

But there is also the question of what actually constitutes the best spectacle.

After winning the race on Sunday in Kuala Lumpur — his second straight victory — Sebastian Vettel said, “It’s hard for all of us to judge because we are very busy with our own race and looking after our own tires — but I think there are more battles going on, and that’s obviously something people want to see.”

Vettel’s Red Bull team director, Christian Horner, said that for the team the tire issue was interesting.

“It adds an extra dimension this year with the strategy,” he said. “It is going to be fascinating to see how it pans out.”

But many fans and observers disagree, saying that the racing has become too confusing. Indeed, if the tire question seems to be far removed from the average road car conundrum — i.e., which tire to buy and forget about for as long as possible — it is.

Like much else in Formula One, the tire is a constantly changing piece of technology.

More than 100 different compounds are used in the manufacture of Pirelli’s racing tires, with the main ingredients being rubber, carbon and mechanical oil. The art of devising the six main kinds of tires that the company supplies to the teams comes down to the different combinations of those three ingredients.

Formula One regulations require two kinds of rain tires, one with thin grooves for a damp track and one with thick grooves for heavy rain. For racing on a dry track, there are four compounds: Supersoft, Soft, Medium and Hard. The softer the tire, the greater the speed, as the gummy tread heats up and grips the pavement. But the softer the tire, the more quickly it wears out.

At each race, Pirelli chooses two of the dry compounds to supply to all the

teams, with one that is suited to the pavement of the particular track. Each driver is required to use each set during a race.

That is where the drivers begin to have their say. Seeking stability, speed and durability, drivers have a complex relationship with their racing tires.

“It’s very difficult to understand what to do with the tire,” said Jenson Button, a driver at the McLaren Mercedes team. “If you try and preserve it, sometimes you make the situation worse as

“It’s hard for all of us to judge because we are very busy with our own race and looking after our own tires.”

you are not carrying as much speed through a high-speed corner and then you get less downforce and you damage the tire more. So it is a very, very tricky situation to be in.”

But the story is evolving, which is what is making it so interesting in the early races of the season. The race tracks have different surfaces and the weather varies in each city, and these differences affect how the tires wear.

“This track in particular, from a tire-maker’s point of view, is very interesting,” Hemberly said of the circuit in Malaysia. “The surface, in particular, is the sort of surface that we saw in American racing. It is hard to distinguish it between almost a concrete surface. You are almost lacking grip. You come here thinking certainly after Melbourne — higher speed, higher temperature, more abrasive. But in reality you are almost missing grip.”

Above all, in Malaysia, the tires were submitted to perhaps the most extreme heat conditions of the season, which affects the wear rate of the tire. Before the race, Hemberly had said there could be four pit stops. As it turned out, most drivers made only three.

Ultimately, however, the tension will remain between the tire provider and the teams: Where is the precise line at which the two can comfortably meet their opposing objectives?

“We still have a lot to learn, from a driver’s and team’s point of view, of the Pirelli tires,” said Jarno Trulli, a driver at Team Lotus. “But as well, Pirelli is trying to adjust themselves and trying to give us the best possible option for condition, weather, circuit.”

There remains a test that neither the drivers nor Pirelli has yet faced: rain. At the Chinese Grand Prix this weekend, should it rain, everyone could be faced with yet another tire conundrum.