

NISSAN IMPOSSIBLE

Nissan's ambitious LMP1 tilt at Le Mans didn't produce a win, but the team left la Sarthe with its head held high and its eye on winning next year, writes **Lewis Isaacs**



THERE'S A famous ferris wheel located adjacent to Le Mans's renowned Circuit de la Sarthe. It's a year-to-year photographic highlight at the 24-hour race and gives fans at the track a reprieve from the overwhelming nature of the event both as an experience and a race. For just over 20 Australian dollars [15 euros] you get about six laps yourself as you watch cars attack the Porsche Curves.

But next to it, and somewhat ignored by those who take pictures for a living, is a temporary rollercoaster. The travelling carny put it together by hand in a few hours, and, despite being of modest size by Gold Coast standards, it is still a ride worth the loose change in your pocket.

It's also a perfect metaphor for Nissan's return to top-level sports car racing.

The revolutionary NISMO GT-R LM was hastily pieced together for the weekend. It had its share of ups and downs during the race but somehow remained running by the end.

No one gets on a rollercoaster expecting a smooth ride. And though you eventually return to the place where you boarded, it's the ups and downs that make the ride worthwhile. By the time Nissan made it to Le Mans, it was already well and truly sitting in the proverbial rollercoaster cart.

The Le Mans adventure started with a flash in the brain of designer Ben Bowlby. The Englishman, famous for Nissan's previous Le Mans experiments – the strange-looking aero wonder, the DeltaWing, and the semi-electric ZEOD RC – studied the current LMP1 rules vigorously.

He saw a modular way of building the car. The engine could go anywhere and could drive the wheels anyway he wanted. The cockpit was just another piece of the puzzle and so were the wheels and tyres – the rules didn't bar any team from running two different sizes. Wanting more weight at the front and minimal drag to take advantage of Le Mans's high-speed layout, Bowlby broke with convention. The engine would go at the front and drive the front wheels. It would be a hybrid system in the 8MJ class and it would run smaller wheels and tyres on the back to take advantage of some aerodynamic tunnelling through the car.

The design, though radical, would be the easiest part of the gestation period ending at Le Mans. Because if the technical rules were open, Nissan said it would apply the same philosophy to showcasing the project. It would be there for everyone to see, an open garage, for better and for worse.

"We are here because of the opportunity the ACO (Automobile Club de l'Ouest, Le Mans' governing body) offers for innovation to be showcased publicly," Bowlby says. "I think much of motorsport today has almost thrown a blanket over its own process. It's very difficult to know how this process is done.

"One of the things Nissan has done has been to lift the veil and show everybody inside the process. It's uncomfortable in some respects to do that process in public, but it truly supports a very special thing that happens at Le Mans, and that is this process ►►

of innovation and allowing innovation.

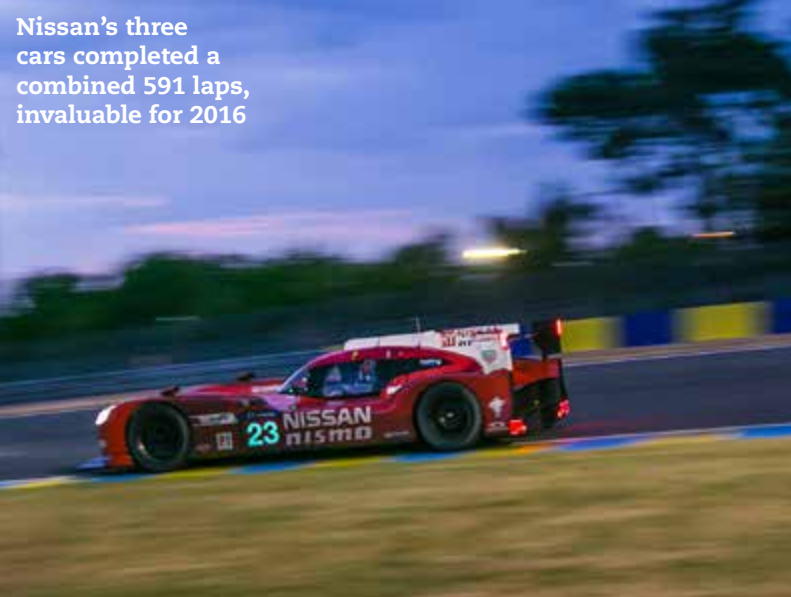
"Not only have we embraced, we have lived it."

The team, based in the old Forsythe ChampCar squad's headquarters in Indianapolis, USA, would have a quick turnaround to have the car ready for June. Porsche started testing its first 919 in July 2013 ahead of its race debut in April 2014. Nissan only unveiled its design in February this year. All of a sudden it was a race just to make it to France.

Two major setbacks hurt that process. A failed crash test forced Bowlby to head to back to his drawing board, and it quickly became clear that the 8MJ hybrid system wasn't going to be operating on time. To have the car ready for Le Mans it would be scaled back to 2MJ. And though that solved one problem, it created another. The hybrid system was paramount to how the car used the smaller rear tyres to slow down. With a minimised hybrid system the car needed bigger rear brakes. And with that, a new design of Michelin tyres.

Warning signs also popped up when Nissan withdrew from the opening World Endurance Championship events to focus on testing and getting the car ready. And when the team's only driver with real LMP1 experience at Le Mans, Marc Gene, was ousted from a race seat, questions over both the direction of the program and wisdom within the team were asked. This project was already a 15-round fight for Nissan, there was no need to do it with one hand behind its back.

The first glimpse of public testing at Le Mans showed exactly how radical this car was. It was well off the pace of its LMP1 rivals, but there were intriguing signs



Nissan's three cars completed a combined 591 laps, invaluable for 2016



A common sight: Nissan's crew racing to get the cars back on track

beyond the times. Reliability wasn't an issue. And through the speed-traps the car was rapid, sometimes the quickest in the entire field. The twin-turbo V6 engine that puts out 500-plus horsepower ran without a hiccup and the five-speed gearbox was faultless in its simplicity. The positives started to outweigh the negatives, though a mountain of work was still in front of the team between the test and the race.

"I said to the drivers, 'You've got a different car,'" Nissan's Global Motorsport boss Darren Cox says of the changes between the test and race weekends. "At the test we had three different cars with three different brake specs. We had different ideas on set-up and one of the big gains from the test day to here is the brakes. We found a direction. The cars are changing all the time.

"We had a drivers' meeting with the engineering guys and myself. Ben said, 'Let's narrow it down: what's the one thing I can change for you that can make the car go faster?' Basically, in short, get the car in the operating window."

The answer from the drivers? "Give me more grip in the car and I'll go faster, like any racing driver."

What the team then found was it was taking seconds off its lap times. One reason being that the previously sluggish time was there to be chopped, but also because the learning process itself was rapid. Complicated ideas like the GPS-enabled hybrid recovery system that helps braking and recovers energy at specific points in the track was ignored in favour of changes that made a larger difference.

Le Mans, as a race weekend itself, is barely the best place to test, however. Each car has three drivers that need seat time.

Sessions are red-flagged, interrupted and the like. Before you know it, qualifying has started. This year, the rain held off, but strangely, some inside Nissan were hoping it would come on race day.

Here's why: Nissan's front-to-rear weight balance is 65 percent to the front. Audi, it is thought by Nissan, has gone for a figure around the 55 percent mark despite having an engine at the back. Not only does Nissan believe that goes a way to justifying its decision to put the motor at the front, but under wet running, the wheels that need to do the most work have the balance. When a car accelerates, the weight shifts to the back. If the front is driving the wheels and the weight is there, the grip shouldn't be compromised. At least, that's the theory.

Nissan never got the chance to find out whether that is the case or not though. The race at Le Mans, save for the final few minutes, was dry.

What did transpire was another intriguing lesson for the team. All three cars were sent to the rear of the prototype field for not meeting the 110-percent qualifying times. From there the #23 car started from pitlane after early teething problems with the running gear.

But lap by lap, the NISMO GT-R LM ran on track in a competitive fashion. Each kilometre of running was more data gained. Though speed wasn't the issue, for nearly half the race, the cars were running. The #21 stopped because it had a problem with a wheel and couldn't make it back to the pits. The #23 circulated until the one-hour mark and car #22 actually crossed the finish line – though it wasn't classified for the few laps it ran. As a testing experience it was a good weekend. For a race, it wasn't.

"Sometimes innovation hurts, but I think the process is fascinating to those that are interested in this kind of thing"
Ben Bowlby

What you take from it though is about perspective. Some race fans would call it a failure. Nissan itself said it was 'Mission Accomplished' after it passed its goal of running for 24 Hours.

The truth is somewhere in the middle. Nissan rewrote the rules of what can be done, but it hasn't won the game yet.

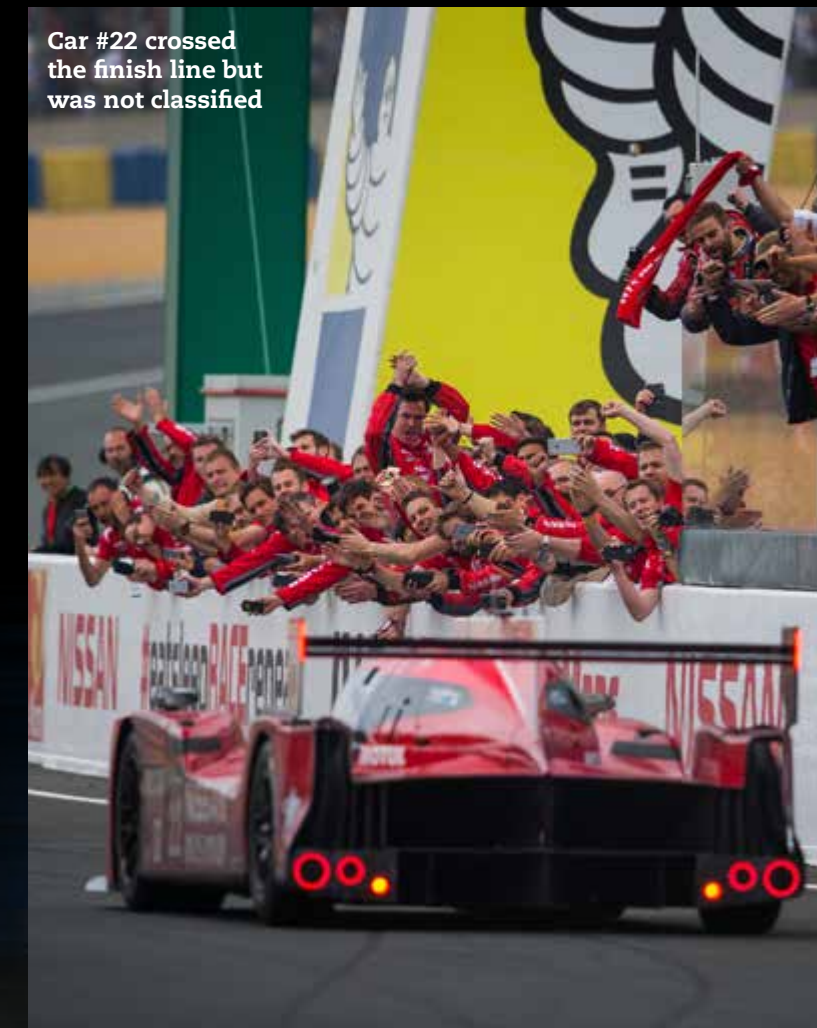
There's a theory in sports writing that the best stories often come from the lockers of the losing teams, and Nissan's tale is certainly unique. From here the journey will go on. Development on track of the current car is planned and a new aero package for higher downforce tracks will be revealed. By September, the 8MJ hybrid system will recommence testing and the hope is that 2016 is when the campaign really begins. To borrow some overused motorsport parlance, this definitely is a development year.

"Sometimes innovation hurts, but I think the process is fascinating to those that are interested in this kind of thing," Bowlby concludes.

"The pain we're going through, showing it to the world and hoping we get the end result, makes us comfortable when we start winning to not worry about the hurt feelings of the others."

This rollercoaster has already had its first up and down, but the ride is far from over.

Lewis Isaacs attended Le Mans as a guest of Nissan Motor Company



Car #22 crossed the finish line but was not classified

Nissan dared to be different but was the GT-R LM too radical too soon?