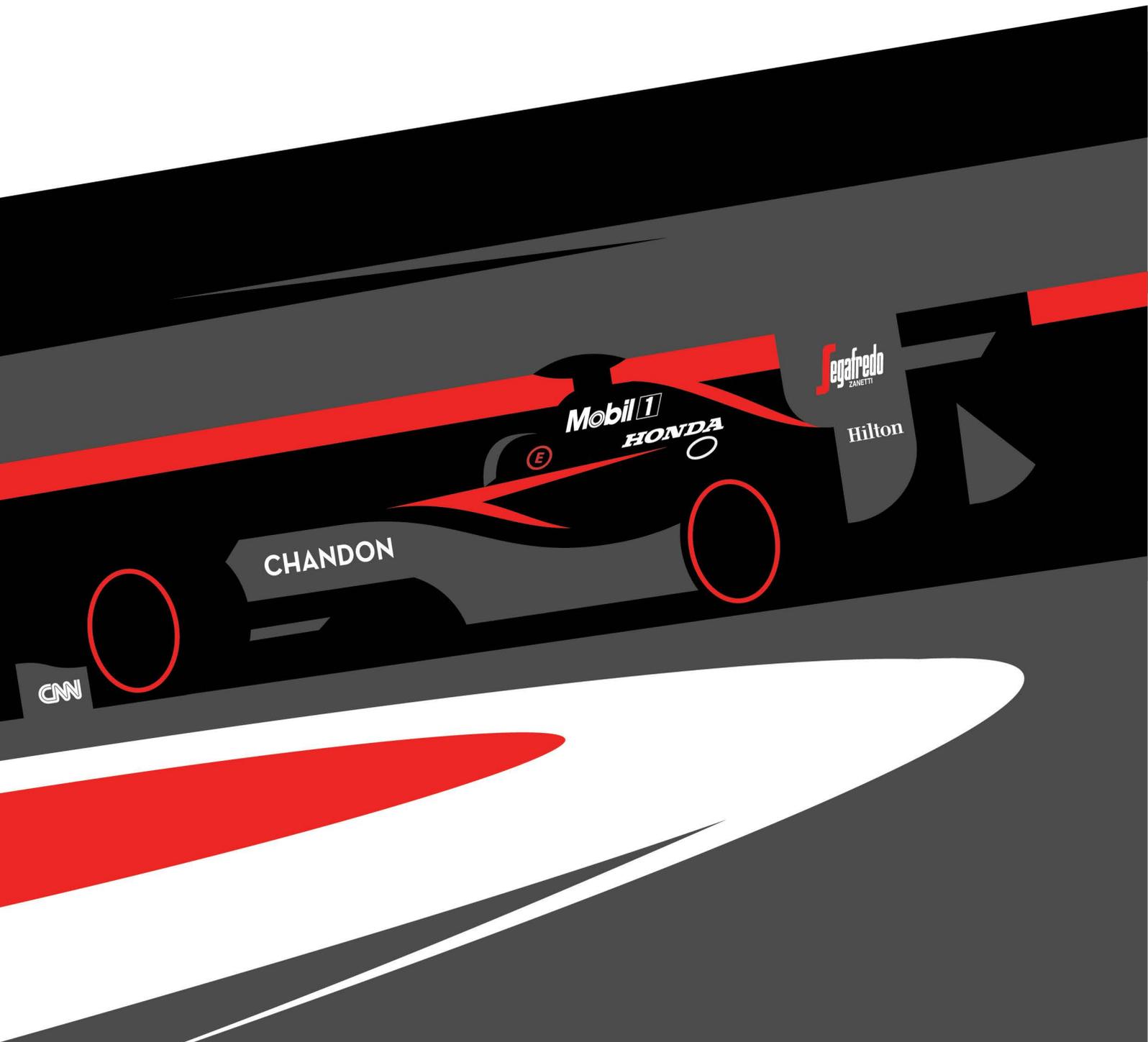


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Sport

The weekend starts here



CHASING SHADOWS

F1 2016 and McLaren's road to recovery

BUBBLE WRAP, BULIMIA AND BURNING RUBBER

Sport goes behind the scenes with McLaren's recovery effort as the 2016 Formula 1 season gets underway

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M ECHANICS SWARM AROUND JENSON BUTTON'S McLAREN.

They wield pneumatic guns for whipping off the wheels, air blowers for cooling the brakes and a roll of bubble wrap, which seems almost comically out of place among the space-age shine of the team garage.

The back of the car is sprayed with fluorescent green paint that, after a stint out on track, will run and dry in ways that will help the team tweak the aerodynamics of the car. The bubble wrap is simply there to stop the rest of the vehicle's polished black finish getting covered in the stuff.

Engineers in black uniforms - some now flecked with neon green - stand at computer terminals, examining three-dimensional models of car parts and scanning telemetry data. There's not quite the mania of race day during the final pre-season test at the Circuit de Barcelona-Catalunya, on the outskirts of the city. One of the engineers is checking his emails; later we spot reigning world champion Lewis Hamilton reclining in the sun on the terrace atop Mercedes' three-storey motor home.

That will change when the new Formula 1 season starts this weekend in Melbourne, Australia, after the shortest pre-season in the sport's history. Hamilton and Mercedes are expected to be front-runners again.

At the other end of the paddock, there's a mixture of new entrants and fallen giants.

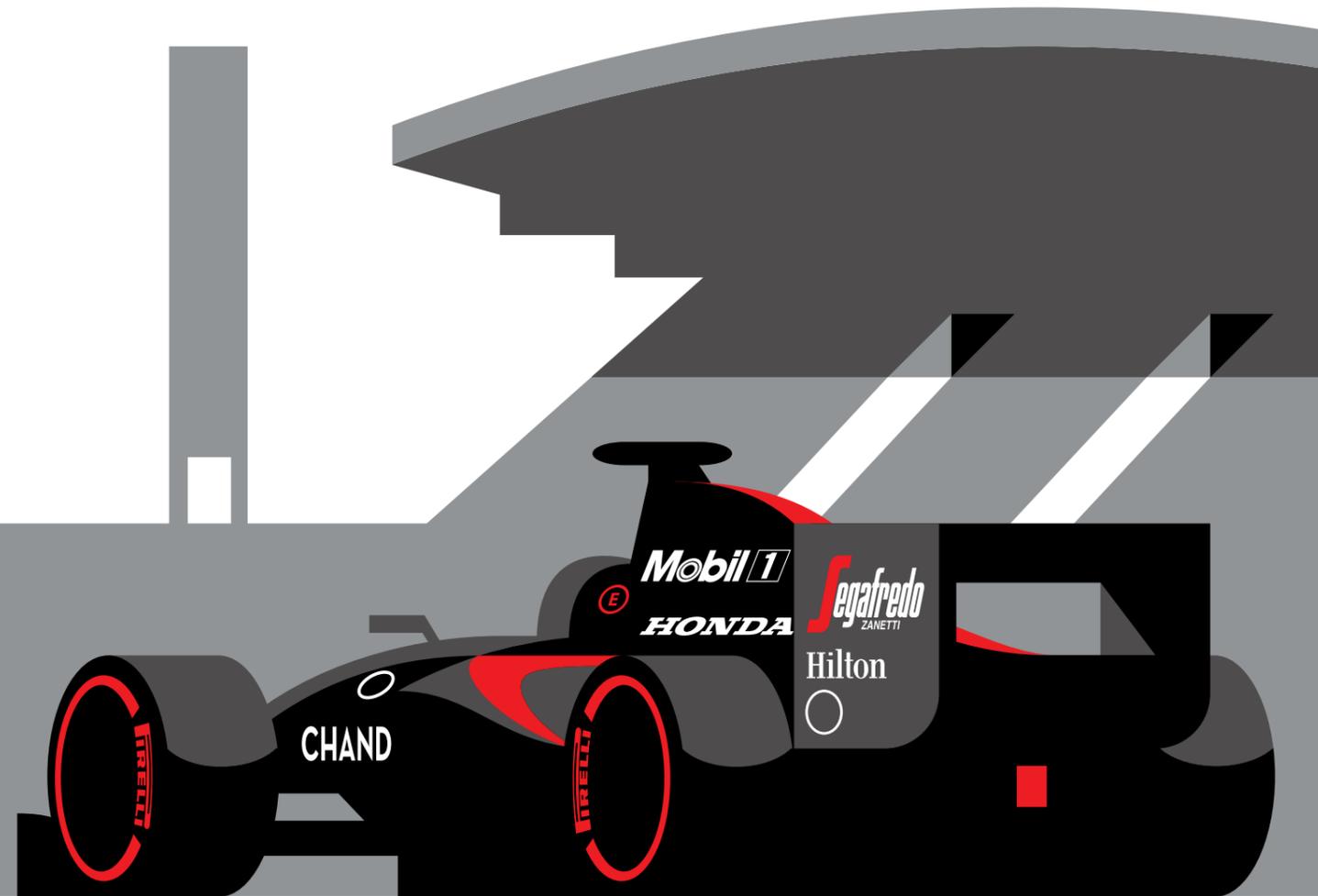
"We need a contender to fight Mercedes," says Sky Sports F1 commentator Martin Brundle. "We are all hoping that Ferrari have got their act together. Then I think it will be really interesting."

PLAYING CATCH-UP

A second is a long time in Formula 1. So when you are a couple of seconds a lap off the pace, as McLaren-Honda were last season, there's a lot to do to catch up.

"When you're where we were last year you need to improve everywhere," Button tells us. "We know what we have to do - it's not like we're lost. But it takes time, and other people aren't standing still while you are improving. They're improving as well."

"It has to be better than it was last year," says former F1 world champion and Sky



Sports pundit Damon Hill. "When you see two really top drivers like Jenson and Fernando [Alonso] in uncompetitive cars and you see a team like McLaren struggling, it is painful to watch."

Commentator David Croft has his doubts: "I'm not hearing great stories coming from McLaren. This is a team, a great team, for whom the enduring image of last season was their star driver [Fernando Alonso] sat on a deckchair in Brazil. Once again his car had conked out, and he thought: 'I'd better get a suntan.'"

The problems stem from a difficult new engine partnership with Honda, something that was "the only logical choice", according to Hill. Previously McLaren cars used a Mercedes engine, but to be in with a chance of winning the world title they need to strike out on their own and develop a race-winning engine that no one else has. It could be a lengthy process.

"It took Mercedes five years to get into a consistently winning position," says Sky Sports F1's technical expert Ted Kravitz. "My suspicion is that it will take McLaren at least five years, and maybe even seven before they can challenge for a championship."

SCIENCE OF SPEED

One of the first decisions McLaren had to make after a disastrous year is what they were going to leave off the truck. The pit lane and paddock are arranged by finishing position in the previous year's Constructors' Championship. The winners get the most space and the prime slots near the pit-lane entry, with less and less space allocated as you move down the grid.

For McLaren, with an abundance of technology befitting their status as one of the sport's most historically successful outfits, it's been a tight squeeze fitting everything they need into the garage.

Still, they have found room for a full-on chemistry lab. Mike Frost's workstation is pristine white, and dotted with vials of the coloured oils and lubricants that are the lifeblood of the car. The hydraulic oil is even dyed blood-red to make it easy to see if there's a leak. By running an electrical current through samples taken from the car, he can tell how much the engine and gearbox are being worn down. The current produces a brilliant blue light like a gas flame, and the hue shifts depending on the different metals in the sample.

"We're always trying to move forward and use new technologies to get closer to the front," says Button. "We know it can happen - we can fight for victories in the future, but there's a lot of hard work needed before that."

So what does that hard work look like? F1 teams are constantly pushing the limits, trying to chip away a 10th of a second here or there in the hope that the changes add up to something significant. "On the second day of the test, Mercedes brought in some new barge boards for the side of the car," says Kravitz. "They had taken



"WE CAN FIGHT FOR VICTORIES IN THE FUTURE, BUT THERE'S A LOT OF HARD WORK NEEDED BEFORE THAT"

JENSON BUTTON

thousands of man-hours to think of and make, prototype and wind-tunnel test. I asked how much time it was worth. He said: 'Well, it's almost a 10th of a second'.

"The only way you can do it [close the gap] is consistently producing updates that are guaranteed to work time after time, and before you know it you've found eight 10ths of a second. That will win you races."

Eric Boullier, a stocky Frenchman with frameless glasses and short black hair, is McLaren's racing director. He is the man charged with wringing every last bit of speed from the combination of engine, aerodynamics, fuel and driver.

"We took the car last year, we drafted a list of weaknesses and we've addressed each one," he says. "The back of the car has changed, the suspension has changed; we want to go to the next level of aero performance... We use every material we can which is lighter. Drivers' water bottles are carbon fibre now, not aluminium."

For McLaren, with so much ground to make up, work is proceeding on a number of fronts. New fuels and lubricants have been developed specifically for the new engine in a technology partnership with Esso and Mobil 1 that can unlock a "double

digit increase" in horsepower. But, like many within the secretive world of F1, Boullier is reluctant to put any numbers more detailed than that on it.

There's pressure on drivers as well as engineers - Red Bull's Daniel Ricciardo recently revealed he'd been asked to lose five kilos in weight before the first race. "Jenson has to target 70 kilos," says former McLaren driver David Coulthard. "He's a tall guy. If he doesn't, he'll lose performance. It's a bit like [being] a jockey."

"I was bulimic when I was younger," continues Coulthard. "I did a book and I wrote about it, and my mum and dad said: 'You never told us you were bulimic.' I said: 'Well, how the hell do I think I managed to make the weight?' I was like nine stone or something at the time. I would weigh myself and, if I was over, I would make myself sick - and that was how I made the weight."

WHEELS OF FORTUNE

McLaren aren't the first 'big' team to have a downturn in fortunes. Button says the team can take heart from the recent recovery of Williams and Ferrari - the latter are expected to be much closer to ☺

THE FALL OF McLAREN

18

years since McLaren's last Constructors' Championship, although Lewis Hamilton won the drivers' title in 2008

265

total number of grid penalty positions issued to McLaren during the 2015 F1

27

points for McLaren last season – the worst in their history. They finished more than 600 points behind champions Mercedes

12

retirements during last season as the team struggled with reliability with their new Honda engines

2,044

miles completed in testing for 2016 – an improvement on last year's 511 miles

“HONDA HAVE SHOWN WILLINGNESS TO BRING PEOPLE IN FROM OUTSIDE, AND YOU NEED TO DO THIS IN F1 – PEOPLE BRING IDEAS, AND SECRETS, WITH THEM”

DAVID CROFT

Mercedes this year, with Sebastian Vettel touted as a possible title contender.

At Ferrari, where new boss Sergio Marchionne has hung pictures of Lewis Hamilton and Nico Rosberg celebrating wins on the walls of the factory to motivate employees, a change of culture has helped precipitate an upturn in fortunes.

“For so long, the pressure for success meant panicked redesigns, or people working with too much pressure on them, or people making only what they knew they could deliver,” says Kravitz. “It’s aiming for the top of the hill when they could have aimed for the stars and got there.”

Was a similar culture change required at McLaren? “It was, and it’s done,” says Boullier. At McLaren the culture has been one of control. Their factory gleams like an alien spaceship, by the side of an artificial lake near Woking. Inside, it’s spotless. There is a ‘clean desk’ policy that means employees are not allowed to eat at their workstations, and everything in the bathrooms is operated by sensors. That ethos extends to the garage: when Button leaves to do a few laps, someone steps forward with a rag to clean up the rubber marks left behind. It is purely aesthetic.

Honda, meanwhile, have traditionally been quite insular, which might be one of the reasons they have struggled to catch up with the other engine manufacturers. Being halfway across the world doesn’t help. As Kravitz points out, if Mercedes have a problem with their engine, they can pop down the road. If McLaren need a new part, it has to come from Japan. Things could be changing, though.

“There’s a real willingness at Honda to get this right,” says Croft. “They’ve shown willingness to bring people in from outside, and you need to do this in F1 - people bring ideas, and secrets, with them.”

Button thinks there’s potential not just for marginal gains, but for big leaps in performance if they get the engine right.

“We obviously have more to gain than others,” he says. “One massive improvement that, without even testing, you know is there, is the deployment of the electric motor. We were very limited in how much we could use that last year, but now it’s as good as everyone else’s.”

Still, no one knows what will happen this weekend in Australia. “I haven’t got a clue,” says Button.

“We are working hard,” says Boullier. “But Ferrari started 10 years ago to recover and they are still not there yet.”

The two pre-season tests in Barcelona are a phoney war, says Hill - like a high-stakes game of poker where none of the competitors are willing to show their hands. At the first qualifying session in Melbourne on Saturday, the covers will come off, and the end result of all that hard work - all that engine oil and bubble wrap - will be revealed. At McLaren, the general feeling is one of optimism, and hope for a better year.

After all, as Boullier wryly notes: “It would be difficult to do any worse.” ●

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Sky Sports F1 is the only place to watch all 21 races live of the biggest ever season, beginning in Australia March 17-20