The British MotoGP According to Brembo

An in-depth look at the premium class' use of braking systems
on the Silverstone Circuit

The Silverstone Circuit will host the 12th race of the 2016 MotoGP World Championship from 2 to 4 September. Located halfway between Oxford and Northampton, the circuit was built on the spot that once served as a military airfield. At 5.9 km in length, the track is the longest and one of the fastest in the World Championship.
The British circuit is characterised by numerous straightaways, fast curves and only slightly challenging braking sections that allow the braking systems to cool down during the race. Due to frequent rain, steel discs are used instead of the traditional carbon discs. Indeed, it was during a downpour in 2015 that Valentino Rossi had to put his experience to the test, securing the victory just ahead of Danilo Petrucci.
According to Brembo technicians, who work with all of the MotoGP riders (Brembo is supplier to 100% of the premier class riders), the Silverstone Circuit falls into the category of tracks that present mid-level difficulty on the brakes. On a scale of 1 to 5, it earned a 3 on the difficulty index, the same score given to 8 other tracks, including Misano where the next GP will be held.

Brake Use During the GP
Despite there being 18 turns (10 to the right, 8 to the left) the MotoGP bikes resort to their brakes only 11 times per lap. Since none of the straightaways are particularly long, the prototypes rarely go over 300 km/h, the only exception being the 770-metre long straightaway (Hangar Straight) that leads to Stowe. At the end of this, the bikes do reach 330 km/h.
So, even though the time per lap surpasses 2 minutes, the brakes are used for less than 34 seconds, which leads to a moderate average deceleration: 1.20 g. Adding up all of the force applied by a rider on the brake lever during the entire GP, the sum is more than 1,050 kg, which is equivalent to the weight of 6,000 Beatles' albums.

The Most Challenging Stops
Of the 11 braking sections on the Silverstone Circuit, none are considered highly challenging on the brakes, but 7 are of medium difficulty and 4 are light.
The Stowe Curve (number 7), whose name originates from the nearby Stowe School, requires reducing the velocity by more than 210 km/h: the riders arrive at 330 km/h and brake for 4.5 seconds, applying 6.9 kg of force on the brake lever in order to go down to 112 km/h. They manage to do this in just 252 metres, which is less than the length of the par 4, 9th hole on St. Andrews golf course.
The Brooklands Curve (turn 16) is even longer in terms of the amount of time (4.9 seconds) and space (259 metres) necessary: the bikes go from 299 km/h to 97 km/h, but the load on the lever is 'only' 5.7 kg.
The Vale Curve (number 8), contrary to what one might think, it was not named for Valentino Rossi but for the Aylesbury Vale neighbourhood, is the curve taken at the lowest velocity: 65 km/h. To go down to this speed, the braking system is in use for 4.1 seconds and its pressure reaches 11 bar.
The Becketts Curve (turn 4) is worth mentioning because to stay on the track, the riders have to reduce their velocity to 22 km/h, but it only takes them 1.1 seconds and 46 metres, less than the width of a football pitch.

Brembo Victories
Of the 39 editions of the British GP races in which they participated, bikes with Brembo brakes won 25 of the 500-MotoGP competitions. Honda was victorious thirteen times, Yamaha 10 and Ducati 2. Including last year's race, Valentino Rossi has won 6 times.