

Report from the Castrol R&D Site: Revolution in Oil Technology Achieved at Pangbourne, UK, amid an Abundant Natural Environment

(Reported by Motohiro Yamazaki)

The UK-based BP Group, including premium lubricator brand Castrol, opened its Technology Centre at Pangbourne, a central hub of its R&D department, to the media on October 22 in England.

Contrary to the popular conception of locating such modern facilities in industrial areas, the center is situated in an abundant natural environment 40 miles west of London.

When it first opened in 1907, a number of manufacturers had placed their research facilities here, and all of them were later purchased by Castrol in 1976. The site now covers 36 acres, and many of the products developed here have been delivered to markets across the world. When Castrol joined the BP Group, the Group's development departments were integrated into the Pangbourne Technology Centre, which, with 500 employees, is now the largest of the Group's 12 R&D facilities around the world.

The press conference unveiled almost all sections of the Pangbourne Technology Centre. And the focus was on how the facility is being developed to enhance the environmental performance of BP products and Castrol brand automotive products, which reduce the environmental impact of automobiles.

Media representatives were first invited into the presentation room, which featured displays of three cross-section models of engines designed by Jaguar: the 5.3-liter V-type 12 cylinder engine, 4.2-liter V-type 8 cylinder engine, and 3-liter V-type 6-cylinder supercharged engine from 1995, 2005 and 2015, respectively. The displays demonstrated how BP and Castrol have contributed through their close cooperation as a fuel and lubricant manufacturer to the development of automobile engines.

Also introduced was Castrol's latest technology: Nexcel.

With Nexcel, an oil change takes a mere 90 seconds, whereas a conventional oil change requires 20 minutes. Nexcel incorporates printer ink cartridge technology; the engine oil and filter

are packaged into a replaceable cartridge. It was first used in the Aston Martin Vulcan, a track-only supercar sponsored by Castrol at the Nürburgring 24-hour Race. The Vulcan's lightweight cartridge is made of carbon fiber. Mass market produced cartridges, which are expected to be available within the next five years, will be made of polycarbonate material. A major benefit of Nexcel lies in recycling. Besides reducing the time required for a conventional oil change, the cartridge itself is collected for reuse by BP, and used oil from the cartridge is refined as high grade lubricant oil. This marks a major innovation in the history of engine oil technology.

The commercial development of Nexcel is an achievement of BP's Pangbourne Technology Centre.