EMBARGO: 12 NOON, TUESDAY SEPTEMBER 29

BUILDING THE JAGUAR XK180
AN EXERCISE IN ACCELERATED DEVELOPMENT

Jaguar's XK180 concept car progressed from an idea to a running reality in a little over ten months. Skilled craftsmen from the company's Special Vehicle Operations Department, working closely with a small group of stylists and engineers who could be spared from Jaguar's intensive new model development programmes, had just forty two weeks to complete the concept car in time for the Paris Motor Show. Time and resources may have been limited, but energy, enthusiasm and pride were available in abundance, and the XK180 roadster can take its place alongside such illustrious forebears as the XK 120 record-breakers, the D-Type and the XJ220.

From the outset however, it was also Jaguar's intention that XK180 should not be a mere static exhibit but that it should be capable of being driven and should perform like a real Jaguar.

First thoughts about the new car were influenced by the XK 120 that established new speed records on a stretch of motorway at Jabbeke in Belgium in 1949. Its performance dispelled once and for all any doubts about whether the XK 120 could achieve the 120 miles an hour its name implied and it was the basis on which every succeeding XK-engined performance car was created. The second influence was the Jaguar D-Type, whose superb styling cloaked Le Mans-winning performance in aerodynamic good looks.

Working on the characteristics of these two historic Jaguars, it was decided that the new concept car should be derived from the XKR, the supercharged sports car the company was preparing to launch in the spring of 1998. The two men who would

be responsible for conceiving and building it, Principal Designer Keith Helfet and Gary Albrighton, the Principal Engineer of Jaguar's Special Vehicle Operations (SVO) department, discussed the project with Chief Stylist Geoff Lawson and SVO Manager Mike Massey. The conclusion that was reached was that a shortened version of the XKR with a more powerful engine would be a fitting basis on which to start.

Work began in SVO on the practicalities of shortening an XKR underframe, while Keith Helfet - the stylist behind the shape of the Jaguar XK220 - sketched possible styling ideas on paper and on the computers that today play such an important part in the styling process.

"We want a Jaguar, not a compromise," he and Albrighton reported back to their bosses. They agreed and work started immediately with the Paris Motor Show in late September as the deadline.

That date was just ten months away.

Within eight weeks, an XKR platform had been modified by SVO, with five inches cut out of its cockpit and provision for shorter front and rear body sections incorporated. While this was going on, Keith Helfet was working in the styling department on first designing the new body and then converting that design into a full-scale clay model.

From the beginning, it had been decided that the new car would have an aluminium body, which would be both efficient in manufacturing terms and true to the XK heritage. The original XK 120 had an aluminium body because it was intended as a limited production car and it was being built against a tight schedule. Replace the 1948 London Show with the 1998 Paris Show and the circumstances were the same.

During February and March, the full-size clay model was taking shape at Loades Design, a sister company of Abbey Panels, the old-established Coventry company whose collaboration with Jaguar goes back many years. In addition to many other

more...

projects, Abbey Panels built the bodies for the C-Type and D-Type Jaguars and the company had also worked on the legendary mid-engined XJ13 prototype and on the XJ220. There was therefore an instinctive understanding of what was required in the construction of very special Jaguars.

By April the clay model design had been approved. During the following weeks Keith Helfet supervised the detailed modifications to the clay model, which would be used to create the tooling aids and moulds from which the aluminium panels would be formed. For a production car, the clay would have been digitised in order to create tools, but such was the rush on this project there was no time – and no need – to use such modern 'time-saving' methods for a one-off vehicle.

As the preparations for creating the body continued, SVO was creating an actual 'cut and shut' XKR to act as a test 'mule' for the shorter, more powerful, concept car. Since it had to be capable of being driven to the levels its modifications would make possible, the engineers wanted to evaluate the proposed chassis and engine changes in real world conditions. The 'mule' was a purposeful evolution of a standard XKR, equipped with a full racing safety-cage that spoke volumes about its performance and purpose.

By the end of May the tooling aids were ready, and the task of shaping the concept car's body could begin. Working from formers and shapes created on the basis of the clay styling model, Abbey Panels' craftsmen began to form every panel of the new car. They worked entirely by traditional methods, rolling and shaping the components using nothing more than skilled application of hand and eye.

The body began to take shape in early May, and by mid-June it was ready for painting. As in any concept car, colour plays an important part in the overall design, and Keith Helfet's choice looked back to one of his favourite Jaguars, the D-Type. Helfet selected a paint that combines echoes of the metallic blue of the Ecurie Ecosse D-Type which won at Le Mans in 1957 with undertones of green and gold. It is a colour which would have been impossible to achieve in the days of the XK 120, and is one of the most obvious signs of Nineties technology in the new car.

more...

By now the mule was racking up the miles necessary to test and fine-tune the engine and chassis modifications. All these modifications had been carried out by engineers at Jaguar's Technical Centre at Whitley, and they were designed to add power and performance which would match the car's image and heritage. Engine modifications increased the 370 horsepower available in the production XKR to an even more impressive 450, while racing suspension with adjustable dampers and larger brakes, wheels and tyres ensured the extra power was well controlled.

Using the handling circuit and the high-speed track at MIRA, the engineers began to fine-tune the modifications in order to come up with a specification the SVO workshop could follow when the time came to start building the car.

Meanwhile, Helfet and his colleagues began to work on the cockpit design, styled, like the exterior, with a retro-influenced cloak over modern technology. Ergonomics were important, as were looks, but Helfet's design policy was also heavily influenced by tactile sensations. "I wanted everything you touch in the cockpit to be metal or leather," he explains. "It formed all my ideas about the instrument-panel, where I wanted the switchgear to have a look and – just as important – a *feel* of past Jaguar sports and racing cars."

It took four weeks to design the interior and another two weeks to create the moulds that would be used to form the necessary panels. It was now July, and the Paris launch date was less than three months away. But everything was coming together according to schedule, and final assembly of the car was under way under a cloak of secrecy in the SVO workshop.

The workshop's previous function was the manufacture of the elegant Daimler limousine. The bespoke nature of that operation meant that almost every job was different, with many of the limousine customers requiring individual touches to what was an already-luxurious specification. This work has led to a small workforce with a unique combination of skills, and all of them came into play as the new car took shape.

more...

While the body-men assembled the aluminium panels, the chassis specialists were building up the special components Whitley had specified to achieve the required handling. The specially-prepared AJ-V8 engine was installed by workers who had started at Jaguar when the six-cylinder XK power unit was Jaguar's mainstream engine, while trimmers who had shaped the leather to cushion royalty and statesmen set to work on the racing seats and harnesses made necessary by the new car's performance.

In the electrical department, work began on adapting switches with the style of the Fifties and Sixties to operate with Nineties technology. It was not an easy task, for even such an action as turning on the headlamps of one of today's Jaguars involves more electronics than were to be found in a complete XK 120.

Working with outside specialists who supplied such components as the wheels and the uniquely-shaped windscreen, SVO worked throughout July, August and the early part of September. By the middle of the month the car was ready to be photographed, and in the following week all the tiny detail jobs were completed before it was carefully loaded for transport to Paris.

Jaguar's concept car was ready – XK180 was a reality.

ends...

FOR FURTHER INFORMATION: Communications and Public Affairs
01203 203321