



Derek Bell's
S4 at
Sebring.

JEREMY WALTON concludes his series on the racing quattros by examining Audi's latest British-built quattro competition cars, currently chalking up wins in America

Race against time...

THE tight timetable to the first race in March 2000 meant that the S4 body shells had to be provided by Audi AG as soon as possible. They arrived just after Christmas and then spent two weeks in Rugby for the roll cages to be installed. The safety cage is not as complex as earlier Super Touring scaffolding, welded into the body at six points, yet it also absorbs enormous cornering loads.

The five British-built S4s have body extensions which are crafted by hand. Because the RS4 Avant was not sold in the USA, the S4 saloon was the best competitive and commercial choice, but integrating all the RS4 features was difficult. The task was to mate RS4 three-quarter panels within the saloon structure. The larger arches were needed to accommodate the 18x9in. BBS magnesium wheels, later increased to 9.5in.

Front wings and chin spoiler were

taken from the RS4. During 2000, the organisers allowed a small splitter extension in carbon composites to improve the aerodynamic bite of the front end. This balanced a 20mm extension to the rear spoiler, a legacy from the A4 racing quattro. Some of the dashboard panelling, the non-slip foot pedals, side impact crash protection, carbon fibre door trim and pit-stop air jacks were all inherited from earlier A4 racers.

Instruments were based on PI data logging from 16 sensors, transmitted over eight channels. This sounds impressive, but Eddie Hinckley and the 14 others who worked on the project at Audi Sport UK regarded this as a simple low-cost system you would use in British club racing.

While Buckingham awaited the

new body shells and donor cars which would give up their interior trim and quattro transmission, Eddie Hinckley used computer-aided design to draw components for fabrication. These centred on the creation of aluminium top arms for the front and rear suspension which would allow camber to be set to suit each track. This was the biggest concession to circuit racing, far from the limit of what could be provided in a racing saloon. Replacement anti-roll bars with blade twist sections and Uniball solid joints sound sophisticated, but were tightly regulated. Audi Sport UK was not allowed to provide cockpit control of the anti-roll bars, common in other categories of racing.

Eibach provided the suspension

springs and Penske an Anglo-American mix of components for the remote reservoir dampers. Braking comes from Alcon at Tamworth, with massive 13in. discs, front and rear.

A precious race car was written off against a concrete wall in the summer of 2000 while tyre-testing. That body, rebuilt into a brand new car, is now used for the 2001 season, while Champion Racing also holds a complete spare race body. The second car used in the USA was built from scratch for 2001, making a total of five racing S4 quattros, four race ready, including the year 2000 S4s passed to American privateers.

The timetable to introduce the S4 to an American racing audience was incredibly tight. A Friday in March 2000 marked the brief Silverstone S4 roll-out at a public test day. Just 36 hours later, the first S4, destined for Bell, was tested at Oulton Park in Cheshire. It was transported straight from the track to a Manchester-Orlando flight, Champion Racing transporting it up to Charlotte for its debut on March 25. Virtually untested, Derek Bell qualified 17th on the crowded 40-car grid, finishing a fighting ninth.

America's vast distances meant that the S4s frequently faced a five-day drive over thousands of miles to each event. A sensational second round in 2000 was held at Mosport in Canada when a pair of S4s qualified inside the top ten. The brand new second car for 41-year-old Italian-born Michael Galati flew all weekend, qualifying third and racing to second overall.

Galati seized the equipe's first pole position in the next round at Lime Rock, but he was fifth at the finish. Another Galati second place was recorded over at Sears Point in California, but mid-season saw the S4s sag slightly, although Galati's qualifying performances frequently put them in the top five, only to have race performance suffer from the body-slammng contact which is routine in US racing.

Las Vegas, penultimate round in the Challenge, has a tight 2.25-mile modified oval circuit. Together with some rare rain, circumstances delivered the best in quattro motoring. Galati qualified fastest and led from start to finish with Bell just outside the top ten after a stop and go penalty. Afterwards a bubbling Galati reported: "This is a terrific win for me and Audi. It has been an up and down season, but it was a great day for the team. The handling of the car was unbelievable."

The tenth and final round was in San Diego and saw Galati make the top five. The silver dream Audi racers were dwarfed by the twisting snake



Derek Bell has done well behind the wheel of the S4 in the States.

of bellowing American racers which comprise the bulk of entries, but they had done enough in their inaugural season to place Galati second in the series and Bell 12th. Michael Galati had performed with the consistent speed expected of his ten-year success record, which included '98-99 World Challenge champion driver awards, a quartet of wins in the brutally tough, and crowded, Nelson Ledges 24-hour races and a brace of Sebring 12-hour endurance victories.

We asked Michael how the S4 compared with the Porsches, Hondas and Mazdas that had brought him his enviable race record. "Well my family was always into Audi quattros, right back to the 5000 model in the Eighties. I found it a bit strange at first, but always enjoyable," he said.

What differences has he had made to his driving technique? "In a quattro things happen in a different way to a conventional car. The wheel is really where that quattro feeling starts, because the steering is very, very sensitive. It just seems to pick up on everything you need to know as a race driver. The tyres also last better with four-wheel drive, and you notice this in the high temperature tracks: the Texas round saw an ambient over 112°F! The turbo motor is unusually flexible — the production RS4 maintains its peak torque figure

from 2500 to 6000rpm — and we redline around 6700rpm.

"Off the start it is just dynamite! The first time I qualified in the top three I set off from the standing start for the race and it was like where, oh where is everybody? It just motors away from them all!

"Technically we could get more horsepower, but we are only allowed the power we have, actually slightly under 450bhp, at this racing weight. That means we are from 100 to 150 horsepower light of the V8 Corvettes, Mustangs and the V10 Vipers. Every time we get in a straightaway, vroom! They're gone!

"As soon as we get on to the brakes, or into a corner, the quattro is right there with them, so it is well suited to the tracks that put a premium on handling rather than drag strip performance. This can be frustrating, but it's a great drive that rewards real commitment into each corner, especially high speed stuff."

For 2001 the Anglo side of the American racing equation diminished as Buckingham built one S4s and rebuilt another for the new season. It was left entirely to Champion and Legends of Motorsport to contest the season. Technically, the cars changed significantly, Toyo tyres now specified by the organisers while the team was able to find at least the full ration of 450bhp, and aerodynamics were improved.

An insider revealed: "The Toyo tyre thing was good for us because the quattro conserves rubber better than its opposition and made the best use of the Toyo's limited abilities." The S4 Competition has certainly been more competitive in 2001, Galati winning the opening event in Texas (where both S4s qualified in the top four overall) and narrowly beaten into second at Sebring. David in an Audi racing the Domestic Goliaths is a fine spectacle, but burying Goliath at every turn, on every circuit, stops the turnstiles and domestic showrooms clicking up dollar income, so Audi will not expect any big favours from the American racing establishment

Suspicion of high technology has always been a factor which every racing and rallying quattro has faced but, as this is written, the S4s continue to be competitive in the USA and the A4 quattro continues to harry factory-backed Alfa Romeos and Hondas in the European Touring Car Championship.

Although this concludes our ten-part history of racing quattros, four-wheel-drive Audis continue to write new chapters most weekends. 

'Off the start it is just dynamite! It just motors away from them all!'