



## Sidepodchat – Jim who?

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Christine: Our final foray into the archive of Steven Roy brings our quick dive into F1 history to a close. If you've missed any of the episodes, I recommend checking the other four out, and you can find links to the original posts on Sidepodcast.com.

Steven: Jim who? There are people who believe that the thing that sets F1 apart from other classes of racing is technology. The theory is F1 has the best people and has always had a technological lead. Only F1 could have ever made the great breakthroughs in technology that have taken us from barely modified road cars to cars that, in theory at least, could run upside down on a ceiling. Every time a piece of technology is outlawed we get howls of protest that F1 won't be F1 any more because F1 must have better technology than any other class.

Of course all of this is based on a false premise. F1 has not always led all other classes and at times F1 has even been behind road car design. It has also been argued by those same people recently that USF1 has no chance of succeeding because American racing technology is and always has been a long way behind European racing technology.

It has been argued that only a genius of Colin Chapman's stature working in the unique pressure cooker environment of F1 could have shaped the under-side of the car to produce ground effect aerodynamics. Except that is not true. He was beaten to that technology by Jim Hall. Jim who?

The thing that made Chapman's ground effect Lotus 79 so special were the side skirts fitted to the car to seal it to the ground. Only a Chapman in F1 could do that. Except that is not true either. Jim Who did that before Chapman as well.

Only a genius of Gordon Murray's standing having to find an answer to Colin Chapman's ground effect Lotus could have come up with a revolutionary idea like the Brabham fan car. Except that's not true either. Jim Who did that too.

Only a genius like John Barnard working under the pressures that only F1 can exert could have invented the semi-automatic gearbox. Except that is not true. You guessed it. Jim Who did that as well.

Jim Who, sorry Jim Hall was born in Abilene, Texas on July 23rd 1935. His family were very wealthy oil people so Jim enrolled at the California Institute of Technology to study geology. A month before he was due to start his course his parents and sister were killed in a private plane crash. Jim inherited \$15 million and went off to university while his brothers ran the family business. The family firm sponsored Carroll Shelby and while at college Jim became interested in racing and Shelby taught him race driving.

Jim started racing his brother's Austin Healy and changed his course from geology to mechanical engineering. After graduation he worked in the family oil business while financing Shelby's sportscar business and his own racing programs.

Hall's racing eventually led him to F1. In 1960, 1961 and 1962 he hired a Lotus to compete in the US GP. He failed to start one race, retired from another and finished a lap down in 7th in 1960. In 1963 he contested the full F1 season in a British Racing Partnership Lotus 24. His best results were sixth place, two laps behind the leader at Silverstone and a fifth, one lap down at the Nürburgring. Hall did not enter the final round of the championship in South Africa and turned his back on F1 to return home to run his Chaparral sportscar company which he had set up at the end of 1960.

Hall had set up Chaparral Cars Inc with Hap Sharp in Midland, Texas in 1962. From the start Chaparral produced fast, innovative cars. Chaparral 2 was a mid-engined car with a semi-monocoque fibre glass chassis. Towards the end of 1963 Hall took Chaparral 2 to Riverside for its race debut. He took pole position and quickly built a substantial lead before an electrical problem ended its race. In 1964 Hall won the United States Road Racing Championship with that car taking 7 wins from 25 starts. The following season was one of utter domination with 16 wins from 21 starts including a win against a top international field in the Sebring 12 hours.

For 1966 Jim introduced not one but two new sports cars. Chaparral 2D competed in the World Endurance Championship winning the Nürburgring 1000 kilometres in the hands of 1961 F1 world champion Phil Hill and Swedish ace Joakim Bonnier. The Chaparral 2E was entered in the Can-Am championship. This was a very high level sportscar championship which took place between Canada and the USA hence Can Am. Many F1 drivers including the likes of Jackie Stewart competed in it and McLaren, over the life of the championships, built its best cars. Rules were few and far between giving someone like Hall the chance to indulge his innovative streak. Chaparral 2E had its radiators in sidepods rather than in the traditional location in the nose. Its most striking feature was a huge rear wing mounted on struts.

By taking the radiator from the nose Hall was able to shape the front of the car to generate downforce. Bear in mind this all happened in 1966 before F1 cars had sidepods and still had radiators in the nose and when the only aerodynamic aim of F1 designers was to cut drag and reduce frontal area. In addition Hall fitted a pedal which could be used to adjust the rear wing and ducts in the front of the car. As the car came on to a straight the pedal flattened the wing and closed the ducting to give less drag and at the end of the straight the driver pressed the pedal to open the front ducts and raise the wing to create maximum downforce. 2E was more advanced than its opponents but had a 5.3 litre engine while many of its rivals had 7 litre motors. It won only one race at Laguna Seca with Phil Hill driving.

Hall's magnum opus was the Chaparral 2J of 1970. This was a car that was so far ahead of its time it is ridiculous. It pioneered technologies that would be hailed as breakthroughs in F1 nearly two decades later. In 1977 Colin Chapman introduced the F1 world to ground effect aerodynamics by shaping the underside of the Lotus 78 to produce downforce. The Chaparral did that 7 years earlier. In 1978 Chapman's Lotus 79 featured side skirts which created a seal to the ground and massively increased the downforce that could be generated. The Chaparral 2J had skirts 8 years earlier. Also in 1978, to combat the Lotus 79, Gordon Murray used a substantially increased engine fan on the Brabham BT46B to suck air from under the car to produce downforce. Eight years earlier the Chaparral 2J had two fans driven by a snowmobile engine which did the same job.

Perhaps the most advanced feature of the Chaparral 2J was a semi-automatic gearbox. It would be 19 years before John Barnard's Ferrari 640 introduced such a device to F1. Despite, or perhaps because of, all this technology the 2J was anything but a success on the track. It frequently qualified on pole by more than



two seconds such was its performance advantage however poor mechanical reliability no doubt partly due to the stresses caused by all that downforce meant that results were poor. At the end of its first season before the reliability could be sorted out the SCCA banned the car. Like so many of Colin Chapman's innovations in F1 the car was legal but the organising body gave in to pressure from other teams who simply couldn't compete with it.

Chaparral moved in to Indy cars and in 1978 Al Unser Jr won the Indianapolis 500 with a Chaparral prepared Lola. In 1979 Al Unser led the race in the John Barnard designed ground effect Chaparral 2K and in 1980, 2K won the 500 in the hands of Johnny Rutherford. This was the last Chaparral car.

After taking some time away from racing Jim Hall returned to run customer Indy cars via Jim Hall Racing but this was never as successful as Chaparral. He also set up the Jim Hall Kart Racing School in California with his son.

There will always be people who think that F1 is all about technology and that taking away any of that technology automatically devalues it. The next time someone tells you that F1 has always been more technologically advanced than any other class of racing just tell them about Jim Who.