

History of Chaparral 2F

Before the start of 1967 season of International FIA group 6 prototype and group 4 sports championship, Ford and Ferrari were supposed to be the main rivals for the title, as well as they were in the previous seasons. What was the surprise when white Chaparral 2F driven by Phil Hill and Mike Spence set the second fastest time in qualification for the first leg of the championship, the Daytona 24-hour race, only 0.26 sec behind Dan Gurney's Ford Mk. II.

The surprise was even higher after Chaparral 2F took early lead with 3 sec advantage in first lap. Chaparral was extending the lead, till after 3 hours Phil Hill hit the retaining wall and damaged rear suspension and the chassis. The attempt to repair the car was unsuccessful and after few more laps the car was retired.

All the remaining races of the season were very much the same for Chaparral 2F. Usually it scored high in qualifying, took promising position in the race and then retired, in most cases, for a gearbox problems. Chaparral 2F finished only one race in 1967 season but proved its performance potential by winning it. Phil Hill and Mike Spence recorded the first and only win for the 2F in BOAC 500 race in Brands Hatch, which it finished in 6:00:26,0 ahead of Ferrari 330 P4 driven by Amon and Stewart (6:01:24.6). Chaparral 2F scored 80 points in the championship and finished 7th. FIA used an interesting rules for this season, when also qualifying position was classified for the championship standings. If only qualifying position was considered Chaparral would have been a 1967 champion. It proves that Chaparral 2F was very fast car with the only weak link in the automatic gearbox.

Construction and technical data

Chaparral cars, built by Texas engineer Jim Hall and Hap Sharp, firstly appeared in 1962 season. Hall's constructions used composite technology inspired by airplane industry on the contrary to the aluminum monocoque, commonly used at that time. Thanks to the fiberglass structure the Chaparral's chassis was very rigid, though extremely light. Hall also adapted another feature for the Chaparral's, two speed automatic gearbox from GM's Corvette GSIIb. It gave his cars better transmission characteristics though some engine power losses.

For the FIA mandated races in 1966 season Hall developed his fiberglass construction into fixed-head 2D, which scored company's first European victory in the Nurburgring 1000 km race.

Most interesting feature of 1967's Chaparral 2F was very high, rear suspension mounted aerofoil wing of which the pitch could be controlled by the driver's left foot pedal. On the straights driver had to push down a pedal to level wing and minimize drag, during braking and cornering the wing pitched up to slow down the car and create massive amounts of downforce. This solution was copied by Colin Chapman in 1968 Lotus 49C and later by other F1 teams. Though the wings with adjustable pitch on long suspensions were banned for the safety reason soon, Chaparral 2F

proved Hall's and Sharp's genius and ability to push boundaries with aerodynamical revolutions.

Technical data Chaparral 2F:

- chassis No.: 2F-001, 2F-002
- Drive Type Rear Wheel
- Engine Location Mid, longitudinally mounted
- Engine Chevrolet 90° V 8
- Configuration aluminum block and head
- Cylinders 8 Normal
- Displacement 427.00 CU IN. / 6997 cc. / 7 L
- Valves 16 valves (2 valves per cylinder)
- Valvetrain OHV
- Bore / Stroke 107.9 mm (4.2 in) / 95.2 mm (3.7 in)
- Compression ratio 11.0:1
- Fuel feed Weber 58 IDM Carburetors
- Aspiration Naturally Aspirated
- Horsepower 525.00 BHP (386.4 KW) @ 6000.00 RPM
- HP to Weight Ratio 3.3 LB / HP
- HP / Liter 75.0 BHP / Liter
- Power to weight ratio 0.66 bhp / kg
- Chassis/body epoxy monocoque
- Front suspension double wishbones, coil springs, telescopic shock absorbers, anti-roll bar
- Rear suspension double wishbones, coil springs, telescopic shock absorbers, anti-roll bar
- Steering rack-and-pinion
- Brakes discs, all-round
- Gearbox GM / Chaparral 3 speed Automatic
- Length/Width/Height 3940 mm (155.1 in) / 1780 mm (70.1 in) / 990 mm (39 in)
- Wheelbase/Track (fr/r) 2310 mm (90.9 in) / 1400 mm (55.1 in) / 1470 mm (57.9 in)
- Weight 795 kilo / 1752.7 lbs

Comparison of Scalextric and MRC models (1:32)

Comparison of both cars is not easy. The differences are very slight. MRRRC features No. 8 Chaparral 2F as it competed in LeMans on 1967, while Scalextric chose the only surviving 2F No.1 still owned by Jim Hall and exhibited in Chaparral Museum, which participated in 2005 Monterey Historic Races and 2006 Goodwood Revival. Car No1 competed in Brands Hatch 1967 but was crème colored for that race, which makes it different from the Scalextric model. What's interesting is that Chassis 2F-002 of the Scalextric featured car was refurbished from older 1966 chassis 2A-003.

Dimensions

Scalextric:

- length 123 mm
- width 56 mm
- wheelbase 74 mm
- track rear 55 mm
- track front 53
- weight 78 g

MRRC:

- length 121 mm
- width 56
- wheelbase 73 mm
- track rear 55 mm
- track front 53
- weight 78 g

Car body and Interior

Car body match the reality pretty well. The slight differences are only in color and a few details. Some details in MRRC are worked out better, especially the radiator inlets, and outlets, which are only outlined in Scalextric model. On the other hand Scalextric used perforated plastic for the engine bay cover while MRRC only outlined it.

Another difference is in lightning. Scalextric model is equipped with white front and red rear lights. On the contrary, headlights of MRRC model though made only from transparent plastic are taped the same way as they were during the Le Mans 24 hour race 1967 (No. 7 with black, No.7 with gray tape).

Interior is nicely worked out in both models. MRRC's interior is the of the body, while Scalextric's is detachable. Scalextric model is equipped with fire extinguisher and it's driver proportions corresponds more with real body.

Tires

Discs of both models are precise though MRRC's are more detailed. MRRC model is equipped with structured and marked Firestone tires, while Scale's tires don't have any logo, furthermore they are wider then real and slick.

Tires dimensions Scalextric:

- | | |
|------------------------|-------|
| – Tires diameter rear | 20 mm |
| – Tires diameter front | 19 mm |
| – Disc diameter rear | 14 mm |

- Disc diameter front 14 mm
- Tires width rear 9 mm
- Tires width front 8 mm
- Tires are slick

Tires dimensions MRRC:

- Tires diameter rear 21 mm
- Tires diameter front 20 mm
- Disc diameter rear 14 mm
- Disc diameter front 14 mm
- Tires width rear 8 mm
- Tires width front 6 mm
- Tires are structured

Chassis, motor, transmission

Each model uses a different chassis and transmission conception.

Scalextric:

- Chassis is Chaparral 2F specific
- Car body is mounted to the chassis using 8 screws
- Special feature is Easyfit Digital Plug system which allows quick conversion for use on Scalextric Digital track.
- motor Mabuchi SP 18000 rev/min side winder rear mounted
- gear ratio 11:36
- silicon bearings
- rectangular magnet 2.5 mm with downforce 236g

MRRC:

- universal chassis (Sebring type) used also by other manufacturers
- car body mounted to the chassis with three screws
- chassis is not prepared for digital conversion
- motor – no-name, In Line rear mounted
- gear ration 10:27
- metallic bearings of rear axle
- Two rectangular magnets

Performance

Both models are built for the primary use on plastic track. That's why they were tested on Scalextric Classic, 9.12 m long, rather technical track with requirement for sufficient grip. The track was completely equipped with kerbs and barriers (for

the layout please see the attachment). Scalextric 12V power supplies were used. Two other Scalextric 1967 season models, Ferrari 330 P4 and Ford GT40 Mk II, were tested for the comparison.

Model	Track No. 1	Track No. 2
Chaparall 2F MRRC (Limited No. 0200/1800)	4,2 s	4,1 s
Chaparall 2F Scalextric	3,9 s	3,8 s
Ferrari 330 P4 Scalextric (Limited No. 1831/6000)	3,9 s	3,7 s
Ford GT 40 Mk.II Scalextric (Limited No. 1831/6000)	4,2 s	3,7 s

Conclusion

MRRC Chaparral 2F has greater value for collectors because it has more reliable color and better worked out details. MRRC also prepared limited collectors edition Le Mans 1967.

Regarding the out of the box performance Scalextric is, without any doubt, better. It's lap times were 8- 10 % faster than MRRC. We believe it's partially due to wider slick tires and of course Scalextric's 50 year's experience in development and manufacturing of racing cars models.