



DRIVING & TECH GUIDE

Volume 2: FIA GTC-65



Driving tips provided by Doug Arnao, three time SCCA champion, and physics director on GTR and GT legends.

Austin Healey 3000 teams

Weight:

940kg (with driver)

Weight Distribution % F/R:

52/48 no fuel

Engine:

British Motor Corp (BMC)

3000cc Inline 6

225HP @ 5800RPM

320NM Torque at 4800

Transmission:

4 speed

Aerodynamics:

Lift @ 100mph: 0N

Drag @ 100mph: 730N

Tires:

Dunlop Vintage Treaded.

Front: 5.50M-15

Rear: 5.50M-15

Chassis:

Lateral Inertia: 1263kg/m2

CG Height from ground: 425mm

Drive train layout:

Front Engine/Front trans

Rear wheel drive

Suspension:

Front: Double A-Arm

Rear: Live Axle



Driving Tips

"A bit of a buried jewel in the GTC-65 class is the Austin Healey 3000 sports car. While lacking the raw performance figures to win the big races, it makes up for it with its character. British "yeah-baby" karma – with a large dose of low end torque and balanced weight - makes this an easy, enjoyable race car. It has that elusive balance of handling, power and braking that just makes it fun to drive fast. These traits make it straight forward to drive on the track.

Entering the braking zones, you can brake fairly late. Don't go so far that you end up trail braking, though, as this can swing the live rear axle around, so get the braking done before you turn in. Return to neutral throttle at the entrance till you settle the rear end down, then as you approach the apex point, use enough throttle to start to steer the car with the rear end. At the exit you can lift a bit or use max power to correct your line. It's pretty comfortable to do this with the Healey. Enjoy it.....grrrr baby, very grrrr." **DR**

AC Shelby Cobra 289 teams

Weight:

1005kg (with driver)

Weight Distribution % F/R:

49/51 no fuel

Engine:

Ford 289 V-8

351hp @6250 RPM

455NM Torque @ 4500

Transmission:

4 speed

Aerodynamics:

Lift @ 100mph: 0N

Drag @ 100mph: 992N

Tires:

Dunlop Vintage Treaded.

Front: 5.50M-15

Rear: 6.00M-15

Chassis:

Lateral Inertia: 930kg/m²

CG Height from ground: 440mm

Drive train layout:

Front Engine/Front trans

Rear wheel drive

Suspension:

Front: Lower A-arm/upper lateral leaf spring

Rear: Lower A-arm/upper lateral leaf spring



Driving Tips

"The AC Cobra 289 has it all. Light and perfectly balanced, brute horse power, and direct handling.

It doesn't do much good to drive this car too sideways and being tidy with your line will pay dividends. That being said this car can react pretty quickly to being in over your head and still pull it out – it's just not the fast way around the track. The 350 HP 289 Ford V-8 can get you in trouble fairly quickly with your braking distances, so work your way up slowly while learning this car's limit. Cornering technique, as previously mentioned, should be fairly classic. Be smooth with all controls and don't overdrive the entrance, squeezing the throttle with respect." **DA**

AC Shelby Cobra 427 teams

Weight:

1048kg (with driver)

Weight Distribution % F/R:

50/50 no fuel

Engine:

Ford 427 V-8

430hp @6300 RPM

550NM Torque @ 4500

Transmission:

4 speed

Aerodynamics:

Lift @ 100mph: 0N

Drag @ 100mph: 992N

Tires:

Dunlop Vintage Treaded.

Front: 6.00M-15

Rear: 6.50M-15

Chassis:

Lateral Inertia: 930kg/m²

CG Height from ground: 440mm

Drive train layout:

Front Engine/Front trans

Rear wheel drive

Suspension:

Front: Lower A-arm/upper lateral leaf spring

Rear: Lower A-arm/upper lateral leaf spring



Driving Tips

"Carroll Shelby's masterpiece, the AC Cobra 427 is the ultimate sports muscle car. It can win most anywhere in the hands of the proper driver. It is, however, a bit of a handful to drive full-out. The massive horsepower of the Ford 427 engine rules this car's character. You must drive with this in mind at all times, as it can bite you in a moments notice.

Driving and cornering is very similar to the Cobra 289 except it's a bit less nimble but it has larger tires which add extra grip. It's important to take extra care of controlling the throttle everywhere – even the straights. Once again the braking distances must be watched and are magnified by this cars increased top line speed of the big-block engine." **DR**

Chevrolet Corvette teams

Weight:

1325kg (with driver)

Weight Distribution % F/R:

52/48 no fuel

Engine:

Chevy 327 V-8

430hp @6200 RPM

550NM Torque @ 4000

Transmission:

4 speed

Aerodynamics:

Lift @ 100mph: 0N

Drag @ 100mph: 927N

Tires:

Dunlop Vintage Treaded.

Front: 5.50M-15

Rear: 6.00M-15

Chassis:

Lateral Inertia: 1580kg/m²

CG Height from ground: 490mm

Drive train layout:

Front Engine/Front trans

Rear wheel drive

Suspension:

Front: Unequal length Upper/lower control arms

Rear: Independent rear trailing arms w/ lateral link



Driving Tips

"Classic American Iron. It's easy to see why this is a favorite car in the vintage race series. With legendary Chevy small-block V-8 power, it drives predictably and gives a sense of confidence in its handling.

To be truly fast with this car it must be pushed it into a slide in most corners. It will rotate around its center which makes it easily balanced with the throttle. The technique is to enter the corner fast enough to get its tail out almost immediately - then be feeding the throttle on as you turn in. Back the throttle off just enough to keep a slight sideways attitude past the apex. When the exit is in sight you can feed more throttle to sway the rear end out just a bit more and balance that out to the exit. Tight corners use much less throttle and use more pure steering. It still fairly nimble for a heavy car as its near 50/50 weight balance, low center of gravity, and fully independent suspension allow the Corvette sportscar like handling." **DA**

Ferrari 275 GTB/C teams

Weight:

1160kg (with driver)

Weight Distribution % F/R:

51/49 no fuel

Engine:

Ferrari 3.265L V-12

310hp @7800 RPM

295nm torque@6000

Transmission:

5 speed

Aerodynamics:

Lift @ 100mph: 0N

Drag @ 100mph: 798N

Tires:

Dunlop Vintage Treaded.

Front: 5.50M-15

Rear: 6.00M-15

Chassis:

Lateral Inertia: 1113kg/m²

CG Height from ground: 430mm

Drive train layout:

Front Engine/Rear trans

Rear wheel drive

Suspension:

Front: Unequal length Upper/lower control arms

Rear: Unequal length Upper/lower control arms



Driving Tips

"Classic Ferrari. The 275 GTB was Ferrari's first fully independent suspension car. It has race bred double A-Arm front and rear suspension and a rear mounted transaxle. This gives the GTB a near perfect 50/50 weight balance and favorable inertia resulting in very predictable ride.

The handling of this car is not complicated. Its light weight, coupled with a screaming 300hp Ferrari V-12, makes it a formidable challenger to bigger cars in the class. Driven more like a true sports/racecar. Don't get into too much sideways sliding with it as it's just wasted motion here. Be neat and precise, and most of all, smooth. The compliant independent rear suspension can accept the V-12's power early in the corner. Try to get the chassis balanced and tracking right by the apex so you can put that throttle down way before the exit." **DR**

Ford GT40 teams

Weight:

966kg (with driver)

Weight Distribution % F/R:

45/55 no fuel

Engine:

Ford 289 V-8. 380hp @6500

448nm Torque @ 5000

Transmission:

5 speed

Aerodynamics:

Lift @ 100mph: 0N

Drag @ 100mph: 860N

Tires:

Dunlop Historic Treaded.

Front: 4.75x10.00-15 CR65

Rear: 5.30x13.60-15 CR82

Chassis:

Lateral Inertia: 930kg/m²

CG Height from ground: 355mm

Drive train layout:

Mid-Engine/Rear trans

Rear wheel drive

Suspension:

Front: Unequal length Upper/lower control arms

Rear: Unequal length Upper/lower control arms



Driving Tips

"The GT-40. A pure breed racecar. Built with the resources of the Ford motor company, this car was designed to conquer the endurance championships of Europe. Every inch of this car was made for the racetrack. It has a low center of gravity and low inertia. From the mid-mounted Ford 289 V-8, to the computer designed suspension geometry, no part of the design was left to chance.

It's really a point and shoot affair – wherever you point it, it will go. The GT40 can be a bit unpredictable if overdriven - so just keep it neat. Too much sliding will only lose you time - scrambling to keep it in line. It will be unbeatable if you can tame its raw performance." **DR**

Jaguar E-Type teams

Weight:

1130kg (with driver)

Weight Distribution % F/R:

51/49 no fuel

Engine:

Jaguar 3.8L In-line 6

275hp @5750 RPM

365NM Torque at 4250

Transmission:

4 speed

Aerodynamics:

Lift @ 100mph: 0N

Drag @ 100mph: 830N

Tires:

Dunlop Vintage Treaded.

Front: 5.50M-15

Rear: 6.00M-15

Chassis:

Lateral Inertia: 1107kg/m²

CG Height from ground: 440mm

Drive train layout:

Front Engine/front trans

Rear wheel drive

Suspension:

Front: Upper/lower control arms

Rear: Upper/lower control arms



Driving Tips

"This is the factory built "Lightweight" with an all aluminum body. It has a perfect balance of handling vs. power. Easy to drive fast. The venerable Jaguar 3.8L straight 6 delivers ample amounts of low end torque making this car good on the corner exits.

It will slide quite nicely so a driving style that promotes that will make this car competitive with the Corvettes. This car easily adapts to your style." **DA**

Lotus Elite teams

Weight:

760kg (with driver)

Weight Distribution % F/R:

48/52 no fuel

Engine:

Coventry Climax 1216CC

110bhp@8500

105NM Torque at 4000

Transmission:

4 speed

Aerodynamics:

Lift @ 100mph: 0N

Drag @ 100mph: 478N

Tires:

Dunlop Vintage Treaded.

Front: 4.50L-15

Rear: 5.00L-15

Chassis:

Lateral Inertia: 727kg/m²

CG Height from ground: 440mm

Drive train layout:

Front Engine/front trans

Rear wheel drive

Suspension:

Front: Upper/lower control arms

Rear: Chapman Strut



Driving Tips

"Compared to the other GTC-65 cars, the Lotus Elite is a very different animal. It's by far the lightest, smallest, and lowest HP car in the group. It's a joy to drive as it can be tossed about at will. It has a very low center of gravity, a Colin Chapman (the father of Lotus) suspension, and the venerable Coventry Climax engine. The design of the car's layout allows for 52% rear weight, which is astounding for a front engine car, resulting in mid-engine style handling.

You can attack the corners very aggressively with this car as it's so easy to gather up and change direction mid-corner. However, momentum is key to this low HP car, so being too sloppy will cost you valuable time. Try to plan the corners so your exit speed is always maximized to turn the fastest laps" **DA**

Lotus Elan 26R teams

Weight:

760kg (with driver)

Weight Distribution % F/R:

48/52 no fuel

Engine:

Lotus Ford 1600CC

160bhp@7800

176NM Torque at 6000

Transmission:

4 speed

Aerodynamics:

Lift @ 100mph: 0N

Drag @ 100mph: 550N

Tires:

Dunlop Vintage Treaded.

Front: 5.25M-13

Rear: 5.25M-13

Chassis:

Lateral Inertia: 707kg/m²

CG Height from ground: 440mm

Drive train layout:

Front Engine/front trans

Rear wheel drive

Suspension:

Front: Upper/lower control arms

Rear: Chapman Strut



Driving Tips

"Take the good parts of the Elite, make it even lighter, then add a 160HP Lotus Ford Cortina engine and you've got a nearly unbeatable combination in the Lotus Elan 26R. This car can win at any track only showing weakness where the straights are long. It has all the traits of a pure racecar. Incredible light weight and slick aerodynamics make it another easy drive. The driver only needs to pay attention to the throttle in the slow corners as there is enough power to break them loose – however it's very easy to recover.

No tricks to driving it, just point it where you want to go. Watch high-speed turns like the top of Spa's "Eau Rouge" as the speed you carry up there can make this light car lift off its tires." **DA**

Mercedes 300SL teams

Weight:

1166kg (with driver)

Weight Distribution % F/R:

54/46 no fuel

Engine:

Mercedes M198 3.0L In-line 6

250hp @62000 RPM

328NM Torque at 4800

Transmission:

4 speed

Aerodynamics:

Lift @ 100mph: 0N

Drag @ 100mph: 735N

Tires:

Dunlop Vintage Treaded.

Front: 5.50M-15

Rear: 5.50M-15

Chassis:

Lateral Inertia: 1199kg/m²

CG Height from ground: 410mm

Drive train layout:

Front Engine/front trans

Rear wheel drive

Suspension:

Front: Upper/lower control arms

Rear: Swing Axle w/lower control link



Driving Tips

"Although an extremely successful race car, the Mercedes 300SL Roadster was known as a difficult car to drive fast in its early years. The swing axle rear suspension made for a poor race setup. The factory eventually added a lower link that helps stabilize things at the limit, and luckily this is the car we have here. Its main advantages are low drag and low center of gravity.

Easy to drive up to just below the limit, the 300SL doesn't mind being slid around a bit and this is probably the fast way around in it. The heavy front weight allows you to kick the lighter rear end around with the throttle. Set up the entrance with a bit of understeer and flicking the rear around with the torque motor is one technique, but a slight 4-wheel drift is the best if you can manage it." **DR**

Renault Alpine 110 teams

Weight:

700kg (with driver)

Weight Distribution % F/R:

40/60 no fuel

Engine:

Renault 1600cc In-line 4

150hp @7200 RPM

175NM Torque at 5000

Transmission:

5 speed

Aerodynamics:

Lift @ 100mph: 0N

Drag @ 100mph: 603N

Tires:

Dunlop Vintage Treaded.

Front: 4.50M-13

Rear: 4.50M-13

Chassis:

Lateral Inertia: 868kg/m²

CG Height from ground: 350mm

Drive train layout:

Front Engine/front trans

Rear wheel drive

Suspension:

Front: Upper/lower control arms

Rear: Swing Axle



Driving Tips

"A great little car. The Alpine 110 is hard not to like. It's very light, nimble, has low drag and a powerful little rear mounted 1600CC engine. It drives easily into the corners with little braking. The entrance can be driven hard and its attitude can be changed easily with the throttle.

If you are comfortable with the rear engine cars, then this car will be a joy to drive for you. Mid-corner lifting off the throttle to correct your line is no problem here. The Alpine's high rear weight bias will keep it from sliding. Just be careful to not be so aggressive that the rear does start to slide. With the inertia mostly from the back, it will not recover easily." **DA**

TVR Griffith 400 teams

Weight:

1020kg (with driver)

Weight Distribution % F/R:

52/48 no fuel

Engine:

Ford 289 V-8

350hp @6250 RPM

455NM Torque at 4500

Transmission:

4 speed

Aerodynamics:

Lift @ 100mph: 0N

Drag @ 100mph: 845N

Tires:

Dunlop Vintage Treaded.

Front: 5.50M-15

Rear: 6.00M-15

Chassis:

Lateral Inertia: 968 kg/m²

CG Height from ground: 410mm

Drive train layout:

Front Engine/front trans

Rear wheel drive

Suspension:

Front: Upper/lower control arms

Rear: Upper/lower control arms



Driving Tips

"The TVR Griffith 400 is a crazy car. A Ford 350 hp 289 V-8 dominates this car's characteristics. Weighing under 2000 lbs. and with a scant 89" wheelbase this car reacts very quickly to the throttle. Getting around the corners can be hair-raising if you insist on using all the power available from the big V-8. Being smooth is the only way to go fast with this rocket. Even though it does slide, only the best will be able to master this delicate balancing act. If tamed it's near unbeatable.

Driving technique? Work up slowly with the power being smooth on all the controls. Get your braking done early and use only neutral throttle starting at corner entrance. Accelerate smoothly from the apex to the corner exit, only putting your foot down when the car is pointed straight. The underlying chassis is capable of some wonderful handling and predictable slides if you stay smooth with the throttle." **DA**

Shelby Daytona Coupe teams

Weight:

1125kg (with driver)

Weight Distribution % F/R:

49/51 no fuel

Engine:

Ford 289 V-8

380hp @6500 RPM

448NM Torque @ 5000

Transmission:

4 speed

Aerodynamics:

Lift @ 100mph: 0N

Drag @ 100mph: 706N

Tires:

Dunlop Vintage Treaded.

Front: 5.50M-15

Rear: 6.00M-15

Chassis:

Lateral Inertia: 1123 kg/m2

CG Height from ground: 450mm

Drive train layout:

Front Engine/Front trans

Rear wheel drive

Suspension:

Front: Lower A-arm/upper lateral leaf spring

Rear: Lower A-arm/upper lateral leaf spring



Driving Tips

"They only built six of them, but you get to drive one. It's the ultimate handling Shelby Cobra. This car was built to take on the Ferraris on Europe's tracks, so its handling is refined from the untamed coupe's origins. It drives like a racecar.

The 380HP Ford V-8 (from the GT-40) serves this car well. The chassis put the power down predictably allowing some good slides. Its coupe body has very low drag giving this car the best straight line speed in this class.

Even with its power it has pretty good manners on the track, so driving it aggressively is the fast way around." **DA**

Shelby GT-350 teams

Weight:

1330kg (with driver)

Weight Distribution % F/R:

55/45 no fuel

Engine:

Ford 289 V-8

351hp @6250 RPM

455NM Torque @ 4500

Transmission:

4 speed

Aerodynamics:

Lift @ 100mph: 0N

Drag @ 100mph: 970N

Tires:

Dunlop Vintage Treaded.

Front: 5.50M-15

Rear: 6.00M-15

Chassis:

Lateral Inertia: 1905kg/m2

CG Height from ground: 505mm

Drive train layout:

Front Engine/Front trans

Rear wheel drive

Suspension:

Front: Double A-Arm

Rear: Live Axle



Driving Tips

"Carroll Shelby's version of this American Pony car is a challenging ride. It's perhaps not as capable an overall package as some of the other cars in this group, but can be quite fun to master.

When it comes to cornering you'll need to think sooner rather than later. It's important to be thinking ahead of the car. The braking distances must be watched so don't get sucked into trying to out break anyone. The best method to negotiating the corners quickly is to trail-brake a bit going in and chuck the car in rather aggressively, which will promote a bit of an understeer slide. Then use a fair amount of throttle to kick the rear end out to steer the car towards the apex (easy with the raw horsepower) – otherwise you just understeer off the track. It's heavy, has high CG, high inertia and marginal brakes. However it can be a very satisfying car to muscle around the track because of the tricks you'll need to employ." **DA**