DRIVING & TECH GUIDE

Volume 1: FIA TC-65

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

Abarth 1000TC teams

Weight:
660kg (with driver)
Weight Distribution % F/R:
40/60 no fuel
42/58 with fuel
Engine:
1000CC in-line Fiat 4Cyl
125bhp@8000
119nm Torque@5000
Transmission:
4 speed
Aerodynamics:
Lift @ 100mph: 0N
Drag @ 100mph: 580N
Tires:
Dunlop Vintage Treaded
Front: 4.50L-13
Rear: 4.50L-13
Chassis:
Lateral Inertia: 668kg/m2
CG Height from ground: 350mm
Drive train layout:
Rear Engine/Front trans
Rear wheel drive
Suspension:
Front: Transverse leaf/lower A-arm
Rear: Trailing Arms

Driving Tips

"Very light weight and nimble. Hard to get in trouble with. Not enough power to spin the tires so it's easy to drive as a starter. It's the slowest car in the TC-65 class.

The rear engine means the bulk of its weight is on the rear driven wheels helping stability. It will understeer at the limit and without real power to throttle steer the rear end out, you'll have to lift – killing your exit speed. Best approach to cornering is to get the braking done early, be on line with neutral throttle at the entrance to make sure you will still be there at the apex - then you can be full throttle at the exit – this holds true for just about any racecar, but especially important when you lack power." **DA**

Austin Mini Cooper teams

Weight:
730kg (with driver)
Weight Distribution % F/R:
62/38 no fuel
Engine:
BMC 1275cc
140bhp@7800
140nm Torque@6000
Transmission:
4 speed
Aerodynamics:
Lift @ 100mph: 0N
Drag @ 100mph: 610N
Tires:
Dunlop Vintage Treaded.
Front: 5.00L-10
Rear: 5.00L-10
Chassis:
Lateral Inertia: 647kg/m2
CG Height from ground: 340mm
Drive train layout:
Front Engine/Front trans
Front wheel drive
Suspension:
Front: Upper/lower A-arm
Rear: Trailing Arms

Driving Tips

"The car is legendary. It handles great, brakes great. Low CG and front wheel drive is always pulling you through the corner.

The answer to all corner problems with this car is to set up early and floor the throttle through the rest of the corner. A late trail-braking technique into the corner works well with the Mini. If mastered, it will set you up and point you to the apex, then just throttle out all the way to the exit." **DA**

Alfa Romeo GTA teams

Weight:
820kg (with driver)
Weight Distribution % F/R:
55/45 no fuel
Engine:
Alfa Rome 1.6L Alfa DOHC Inline 4
170hp @7500
180nm Torque@5500
Transmission:
5 speed
Aerodynamics:
Lift @ 100mph: 0N
Drag @ 100mph: 760N
Tires:
Dunlop Vintage Treaded.
Front: 5.50M-14
Rear: 5.50M-14
Chassis:
Lateral Inertia: 951kg/m2
CG Height from ground: 425mm
Drive train layout:
Front Engine/Front trans
Rear wheel drive
Suspension:
Front: Upper/lower A-arm
Rear: Live Axle

Driving Tips

"This car drive has a nice drift-able style. It's not very stiff so it's easy to toss around. The live rear axle helps keep both rear wheels planted during acceleration though there is a hint a torque steer in the slow corners. The torquey little engine and the 5-speed transmission (only one in TC-65 class) give it good usable power in all corners.

You don't want to be too tidy while driving this car. Throwing it a bit at the corners is the best way to go fast while feeding the throttle on progressively from the onset of the slide. Expect some great battles with the Lotus Ford Cortinas." **DA**

Lotus Ford Cortina teams

Weight:
810kg (with driver)
Weight Distribution % F/R:
52/48 no fuel
Engine:
1.6L Lotus Ford DOHC Inline 4
160hp @7800
176nm Torque@6000
Transmission:
4 speed
Aerodynamics:
Lift @ 100mph: 0N
Drag @ 100mph: 784N
Tires:
Dunlop Vintage Treaded.
Front: 4.50M-13
Rear: 5.25M-13
Chassis:
Lateral Inertia: 932kg/m2
CG Height from ground: 420mm
Drive train layout:
Front Engine/Front trans
Rear wheel drive
Suspension:
Front: McPherson Strut
Rear: Live Axle

Driving Tips

"A wonderful little car. It was a family compact car turned over to Colin Chapman of Lotus to make a race car out of for the ETCC championship in the 60's. It has no real weaknesses as it's very balanced and nimble.

The Cortina will slide when needed and the best approach is similar to the Alfa by chucking the car at the corners a bit until it starts to slide then steer it with the throttle. The live rear axle necessitates a soft suspension so it's quite forgiving. A setup with some initial understeer is best. Its twin cam Lotus Cortina motor is a high revver, but its 4-speed is at a disadvantage to the Alfa's 5 speed on some tracks." **DA**

Jaguar MKII Sedan teams

Weight:
1300kg (with driver)
Weight Distribution % F/R:
53/47 no fuel
Engine:
Jaguar 3.8L DOHC Inline 6
250HP @ 5500RPM
333NM Torque at 3750
Transmission:
4 speed
Aerodynamics:
Lift @ 100mph: 0N
Drag @ 100mph: 975N
Tires:
Dunlop Vintage Treaded.
Front: 5.50M-15
Rear: 5.50M-15
Chassis:
Lateral Inertia: 1805kg/m2
CG Height from ground: 520mm
Drive train layout:
Front Engine/Front trans
Rear wheel drive
Suspension:
Front: Double A-Arm
Rear: Live Axle

Driving Tips

"This car is a luxury sport sedan converted to a racecar. It's heavy at 1300kg, has a relatively high CG and inertia. It has a fair amount of body roll so it doesn't change direction easily.

It's best to get your braking and downshifting done early so you'll be set up neatly for the corners. It will slide, but don't go in too heavy or it will slide right off the corner with all 4 wheels. It's a predictable ride with a bit of understeer when you push it, but don't expect to do any tricks with it – be smooth. The engine is the best thing about it. It has the venerable Jag 3.8L 6 cylinder with lots of low-end torque." **DA**

Ford Falcon teams

Weight:
1250kg (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: 1080N
Tires:
Dunlop Vintage Treaded.
Front: 5.50M-15
Rear: 5.50M-15
Chassis:
Lateral Inertia: 1885kg/m2
CG Height from ground: 515mm
Drive train layout:
Front Engine/Front trans
Rear wheel drive
Suspension:
Front: Double A-Arm
Rear: Live Axle

Driving Tips

"The Ford Falcon "Sprint" is the sleeper in the TC-65 class. Its grocery-getter looks defy what's underneath. Its underpinnings are essentially the same as the Mustang's, but, without the "Ponycar" namesake mystique. The bottom line is, it's lighter and has less drag, yet the same engine and suspension as the 'Stang. The only concession is its slightly smaller rear tires.

The driving is similar to the Mustang. It is still a heavy, understeering car by nature; so learning to trail brake the corner entrances will pay dividends with this car. The torque from the Ford 289 C.I. engine should be used to kick the rear end around a bit once you get it generally pointed into the corner – around mid-point is right. Braking is good, but don't look to out brake the lighter cars in the class – you'll just end up in massive understeer entering the corner. Set up your passing for the corner exits and use the power. Like the Mustang you need to stay one step ahead of this car using techniques to balance the front weight understeer with its power oversteer. If you learn its tricks and tame this car it will be your fastest ticket of the TC-65 class." **DA**

Ford Mustang teams

Weight:
1330kg (with driver)
Weight Distribution % F/R:
56/44 no fuel
Engine:
Ford 289 V-8
351hp @6250 RPM
455NM Torque @ 4500
Transmission:
4 speed
Aerodynamics:
Lift @ 100mph: 0N
Drag @ 100mph: 1144N
Tires:
Dunlop Vintage Treaded.
Front: 5.50M-15
Rear: 6.00M-15
Chassis:
Lateral Inertia: 2006kg/m2
CG Height from ground: 535mm
Drive train layout:
Front Engine/Front trans
Rear wheel drive
Suspension:
Front: Double A-Arm
Rear: Live Axle

Driving Tips

"The American "Ponycar" Mustang has one distinct advantage over the other cars in this class. Pure horsepower. It's significantly faster on the straights than the other cars with its big 289 C.I. Ford-V8. It can be very competitive at tracks with longer straights. When it comes to cornering, however, it gives up quite a bit to the lighter cars, so shorter tracks will be challenging. The braking distances must be watched with this baby, so don't get sucked into trying to out brake 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 and do it well, because of the tricks you'll need to employ." **DA**