

2010 German Touring Series (GTS) Rules

November 15, 2009

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1. General Rules and Safety

All cars, drivers, and entrants will be subject to the NASA Club Codes and Regulations, specifically the Technical Requirements, Required Safety Equipment, Vehicle Safety Inspection, Vehicle Legality Inspection, and General Competition Vehicle Rules sections (NASA CCR Sections 11 and 15-18). These sections cover rules for safety equipment, including full roll cages, window nets, belts, extinguishers, as well as appearance and other items. All cars must have a NASA vehicle log book and all drivers must have a current NASA competition license.

2. Modified 13/13

To promote clean and competitive driving, in addition to NASA's rules and suggested sanctions in the CCR, the series will use a Modified 13/13 rule for on course conduct. The intent of the Modified 13/13 rule is to provide some degree of deterrence against casual body damage and contact by careless drivers but without excessive penalties for normal race driving. In multiple car incidents all relevant evidence will be used to assess fault. Sanctions for drivers found to be at fault will be imposed by officials on a sliding scale subject to the discretion of the officials. Drivers in single car incidents will not be subject to sanction under the Modified 13/13 rule. The Modified 13/13 rule can also be applied to a driver whose on track conduct causes damage to another driver's car even if there was no physical contact between the cars. Penalty decisions will be heard by any combination of NASA Race Directors, GTS officials, and/or Incident Review Boards (IRB's) which may be formed and operated per the NASA CCR.

GTS Modified 13/13 penalties will not be applied when an incident occurs in a mixed race group between a GTS driver and a driver in another class. In those instances, standard NASA CCR penalties and procedures will apply.

The Modified 13/13 rule can be applied post event as it is not always possible to determine fault at the track in a timely manner. No Modified 13/13 penalty can conflict with the findings of a NASA Race Director and penalties can vary in length subject to the discretion of GTS officials. Regardless of the length of the penalty, no penalty is over until the driver participates in at least one GTS class race while subject to the penalty.

3. Car Eligibility

Any vehicle of German manufacture meeting NASA CCR standards for competition is eligible for competition. The vehicle must have originally been badged and titled by one of the following manufacturers:

- Audi
- BMW (to include the new MINI)
- Mercedes-Benz

- [Mercur](#)
- NSU
- Opel
- Porsche
- Volkswagen

Competitors wishing an exemption to the above list can contact the National GTS Director. Upon issuance of exemption, a signed allowance must be attached to the log book.

4. Classification

There are six classes for GTS: GTS1, GTS2, GTS3, GTS4, GTS5, and GTSU. All cars will be classed on a power to weight ratio. A vehicle's classification and minimum allowable weight (as the car would exit the track with the driver) will be determined by multiplying the appropriate class weight ratios by the vehicle's power. "Power," as used here, will be determined from a minimum of three consecutive dyno pulls, and shall be defined as:

- a) the horsepower value from the single run with the highest horsepower reading (for cars with higher horsepower than torque);

$$\frac{\text{Weight}}{\text{WHP}}$$

or,

- b) the average of horsepower and torque from the single run with the highest average of those values (for cars with higher torque than horsepower):

$$\frac{\text{Weight}}{(\text{WHP} + \text{WTQ}) * .5}$$

The following table shall be used to determine each car's class based on the calculations determined using the above methods.

D.O.T. Approved Tires	Non-D.O.T Approved Tires
GTSU <5.99	GTSU <6.49
GTS5 6.0-8.49	GTS5 6.5-8.99
GTS4 8.5-10.99	GTS4 9.0-11.99
GTS3 11.0-14.49	GTS3 12.0-15.99
GTS2 14.50-18.49	GTS2 16.0-19.99
GTS1 >18.50	GTS1 >20.0

5. Car Modifications

Any modification to the car is allowed subject to the following restrictions.

For all GTS cars, the engine and the chassis must be of the same marque (e.g. a Porsche may use any Porsche badged engine). For the purposes of these rules, the engine is defined as the block. Swapping engines between different chassis made by the same manufacturer is allowed, but swapping engines of a marque different than the chassis manufacturer is specifically not allowed. Cars which competed with an engine from a different manufacturer than the vehicle's chassis in at least one GTS race prior to 11/07 may continue to race with that same configuration. However, such cars may not switch to another engine of a different manufacturer except one made by the manufacturer of the original vehicle. For instance, a Porsche which competed prior to November 2007 with a Chevrolet engine may be changed to use a Porsche engine but may not be changed to use a Ford engine.

Additional roll cage bracing and construction is allowed and recommended. Tube frame cars will be classed according to the Non-D.O.T. table regardless of tire choice. Tube frame cars running Non-D.O.T. tires will be bumped into the next higher class. "Tube frame" is defined as any car that does not retain the manufacturer's stock unit body or chassis. Modification of suspension and drivetrain mounting points alone does not constitute a tube frame.

5.1. Cockpit adjustable engine management systems

All adjustable engine management systems must be declared on the Dynamometer Certification Form. Failure to do so will result in disqualification of all timed sessions for the weekend. Adjustable engine management systems include but are not limited to systems such as MoTec and MegaSquirt that can upload and download from external computers, potentiometers, diodes, and switches that can alter signals from engine sensors and other factory installed devices such as traction control that change engine performance when non-drive wheels are stationary.

6. Engine Power Testing/Protest Procedure

NASA will attempt to have a dyno at each event available for testing.

Impound for testing and weights shall be handled in one of two manners:

1. Top three finishing positions in each class will report to impound immediately following the race.
2. A designated class or classes shall report to impound. In this method, all competitors in the selected class report regardless of finishing position. Competitors may be given notice prior to the session of which class will be required to report.

If a competitor does not report to impound when required, then their results for that session will be disqualified.

Competitors must produce a dynamometer certification from the last 12 months and dynamometer certification form upon demand and should keep copies of both with their vehicle logbook. Any competitor without a dynamometer certification will be placed into

GTSU until they can produce a certification. A competitor must recertify their car if any changes have been made since the last certification run. Competitors may use any brand of dyno for certification, but all compliance runs at events will be made on a Dynojet Model 248, 224, or 424 in SAE mode with a smoothing factor of 4 so it is highly recommended to use one of those dynos with those settings for certification to avoid any errors in classification.

To allow a small safety margin for dyno variance, a forgiveness of 4WHP will be given to cars with WHP greater than WTQ and a -4 factor will be applied to the formula for cars using the averaging method for WTQ greater than WHP. However, if a car does not meet the minimum weight listed on the certification sheet, the forgiveness cannot be used to arrive at a compliant number.

Protest procedures will be handled per the NASA CCR with the exception that a protest requiring a dyno run must be accompanied by a bond from the protestor in the amount of the cost of a dyno run. The losing party of the protest will be required to pay for the run, so if the protest is upheld the protestor shall have their funds returned and the protestee will be required to pay for the run.

6.1. Dynamometer procedures for AWD (All Wheel Drive) Cars

Because it is nearly impossible to have an AWD dynamometer at an event, all AWD cars must have dyno results before entering their first event. This dyno testing must be done on a Dynojet brand dynamometer. Dyno test results must be accompanied by a Dynamometer certification form. **There will be no exceptions.** Any car without the certification will run in GTSU. The Dynamometer certification form must be completed at the time of the dyno testing and signed by the dyno operator and the entrant. In the event of a protest against an AWD car, the protested and protesting parties must both be represented at the re-testing. Re-testing must follow the same procedures and the fees will be paid by the party in error. If a GTS official's presence at the re-testing is required, the party in error shall pay the GTS officials expenses.

7. Car Markings

7.1. GTS Logos and Car Classification Identification

All cars shall display the GTS logo on both sides of the car. The logo must remain in its original form, or can be altered to a single color to match the vehicle's color scheme. The logo can be incorporated with other markings (e.g. number plate) so long as the logo remains easily identifiable.

All cars will display their class number, either in conjunction with the GTS logo, or other markings indicating the Series. Class identification is required on both sides of the car, as well as fore and aft.

7.2. Car Numbers

All cars shall display their car number in accordance with the CCR.

7.3. Regional Decal Requirements

Regions may have additional requirements for car markings above and beyond the stated GTS requirements. Regional GTS Directors will communicate these requirements to the Regional competitors as necessary. A one event grace period may be granted at the Regional GTS Director's discretion to allow for compliance.

8. Scoring

Scoring shall be done per the NASA CCR. GTS Regional Directors may elect to allow competitors to drop a certain percentage of events and will alert competitors to the drop amount prior to the beginning of the season.

9. Version History

Date	Version	Changes
11/15/09	2010v1.0	Initial release
<u>11/17/09</u>	<u>2010v1.1</u>	<u>Section 3</u> <u>Updated Car Eligibility list to include Merkur and to document an exemption process.</u> <u>Section 5</u> <u>Included a definition of “engine”</u>