



Gittreville Grand Prix

Gittreville Grand Prix 2011 Builder's Guidelines

Prepared for: Cyclekart makers interested in entering The 2011 Gittreville Grand Prix

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October 25, 2010

All entries must have a chassis plate identifying the inspiration car, the builder and the chassis number.

All entries must run with legible racing numbers.



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Builder's Guidelines

Overall objective

Good humor and fun.

Period

The eligible period for inspiration cars is the "Vintage Period". Admittedly, this is a supremely vague designation! The VSCC (Vintage Sports Car Club), has defined the vintage period (since its founding in 1934) as ending December 31st 1930. The VSCC was founded on the premise that the "proper" vintage car building era was ending under the pressure of mass production. The modern VSCC Club retains this strict definition of "vintage" but as a club also embraces post-vintage "thoroughbreds" of the period 1931 - 1940 as well as earlier Edwardian cars. The club even accepts exemplary, hand-built post war cars. The common link is the spirit of adventurous motoring. The VSCC, more than any other collector car club, believes in driving - track racing, speed events, hill climbs, muddy trials and driving tests. It is our goal to be something very much like the VSCC (albeit with our cheap, home-made cars!)

Our desire is that the cars participating in the Gittreville Grand Prix generally "fit" with each other in scale, proportion, ability and spirit. We are certainly not looking for uniformity but we do want all the cars to emphasize the skinny wheeled, bare knuckled, adventurous spirit of vintage motoring and to run with each other on roughly equal (fun) terms.

The Constructors Committee, considered a very closely prescribed eligible period and draconian rules covering specific components in an effort to ensure a good fit and even field. In the end though, we have realized that there can never be enough rules to absolutely ensure anything (least of all fun) and we've chosen instead to lead as best we can by example. Hopefully we can inspire all interested builders to work toward the more important goal of good humor and fun.



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Formula

What follows is an outline of intentions and suggestions with only a few absolute rules.

From time to time, we will reference the “classic formula” in our discussion. When we do, we are referring to the Stevenson’s cyclekart formula. Our guidelines are a development of theirs. Our approach is a bit looser and since we aren’t fiberglass people, more open to complex fabricated metal solutions. See: <http://www.cyclekarts.com/CycleKartSpecs.html>.

For 2011 we will have two classes:

GRAND PRIX CLASS

- 39” absolute maximum track.
- 17” Ø wheels with 160 max. width rims. Front and rear rims must be the same diameter.
- 275 lbs maximum racing weight.
- Honda GX200 (or clone) motor. “Stage 1” motor modifications encouraged but stock motors are also absolutely fine.
- \$2500 maximum expenditure for materials, components and parts made by others.

VOITURETTE CLASS

- 39” absolute maximum track.
 - 17” Ø wheels with 140 max. width rims. Front and rear rims must be the same diameter.
 - 225 lbs absolute maximum racing weight.
 - “Box Stock” clone motor. “Box Stock” allows, removal of the governor, a free flow air filter and a non-stock exhaust but little else.
 - \$2000 absolute maximum expenditure for materials, components and parts made by others.
- All cars must have an indelible metal chassis tag and legible racing numbers
- All cars must have a clearly identified inspiration car from the vintage era, very loosely defined as ending in 1940. It is expected that the built cyclekart be generally guided by its inspiration car and that car’s racing era. We do not expect slavish replicas or fastidious historical accuracy but we do want the inspiration of the period to come through. Our cars are caricatures. As with a good caricature, the essential personality of the inspiration car should be self evident.



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Dimensions and weight

We have decided not to be particularly restrictive on length in order to allow for some of the very long cars from the early part of the period. There are inherent drawbacks in having an excessively long car on our courses so we feel length will be effectively self-policed.

In contrast, we have set 39" as the ABSOLUTE MAXIMUM track (front or rear). We are defining track as measured from outside tire wall to outside tire wall on the contact side of the wheel (note: not measuring to the edge of the contact patch). Wider tracks and fatter tires have performance potentials that could easily get things too serious and quickly spoil the fun. We aren't trying to build 1 1/2 litre F1 cars from the early '60s!

We had some debate and self doubt last year but stuck with the classic 17" wheel formula. The preferred rim size is 17" Ø but we will allow some exceptions in the GRAND PRIX CLASS. Maximum rim width is 160 and the maximum tire width is 2.75. VOITURETTE CLASS cars are strictly restricted to 17" Ø x 120 or 140 and a maximum tire of 2.50. It should be understood that we have decided to emphasize the 17" wheel fully understanding that they are the most difficult size to find. Sorry about that -- we feel they are correct.

Important exceptions and associated handicaps:

Thoroughbred exception - 16" wheels will be allowed where they are in proportion with the inspiration car (probably from the later 1930's). 16" Ø wheels will be handicapped by restricting the allowed engine to one class smaller, the GX160. Up to 3.00" tires will be permitted, again if in proportion, but cars using those wider tires will also be restricted to the GX160 engine. The handicap is the same for smaller and for wider. Both offer the promise of superior performance and we are offsetting the presumed better handling and extra traction with the restriction to the smaller engine.

Edwardian exception - 18" Ø wheels will be handicapped in a different way. Whereas we feel 16 x 3.00 wheels would look absolutely correct on a car inspired by a car from the late '30s (and the superior performance that implies), 18" wheels will more likely suit the larger, heavier cars of the Edwardian period. As we are following a methodology of either wheel size or tire width invoking a handicap, it is assumed any variation in wheel size will probably be associated with wider tires (also 3.00 on 18" Edwardian wheels). The handicap for 18" Ø wheels will be a minimum wheel base of 74" and the driver may not sit lower than 4" (seat compressed) above the axle (wheel center) line. Only a true Edwardian car is going to look right with a wheelbase this long and big balloon tires (we are holding fast to the 39" maximum track). The wheelbase and higher pre WWI look will force a significant ladder chassis. The real handicap is the extra



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weight. Of course, long pre war cars are not precluded from using 17" Ø wheels and sitting lower (for example, Bedelia and GN). If an Edwardian car has a shorter wheelbase (than 74") or the driver sits lower than 4" above the wheel center the car must use 17" wheels and maximum 2.75 tires.

Veteran exception - No minimum wheelbase but the driver must sit at least 8" above the wheel center to utilize 18" Ø wheels and 3.0 tires. The handicap is of course the extremely high seating position.

For 2011, the weight limit in the GRAND PRIX CLASS has been raised from 250 lbs to 275 lbs (the former *Edwardian exception*). The weight limit in the new VOITURETTE CLASS is 225 lbs. The Voiturette weight limit is absolute. It takes a very spartan car to achieve the 225 lb weight limit. The weights of the motor, drive unit, rear axle, front spindle sets, brake, associated bearings, wheels and tires are more or less fixed - factor this into your planning. In spite of the raised GP Class limit, 240 to 250 lbs remains a good target for the GP Class. This is the weight of the car without driver. We are defining this weight as including oil and "some" gas in the tank. The weight limit does not include things shown in concours but normally taken off for spirited driving: fake headlights, engine covers, decorative fenders, etc.. While, of course, heavier means slower, we still feel the weight limit remains a good idea. The limit forces hard choices to be made on what components and features can be incorporated into the car. Some of the inevitable compromises will dampen performance but, more importantly, they will also help to moderate the budget and control the building time. Keeping things lighter and simpler keeps things more fun. The new VOITURETTE CLASS has been created to emphasize simple and fun.

There is no minimum weight limit. The extremely high proportional weight of the driver will offset any serious performance gains from a featherweight car.

- Overall length: vague limit implied by proportion, 98" as a softly suggested maximum.
- Wheelbase: again "in proportion", around 69" suggested - inspiration car is the best guide.
- Width (at track): ABSOLUTE MAXIMUM of 39" - around 37" is generally suggested.
- Weight: maximum of 275 lbs. in the GRAND PRIX Class
- Weight: maximum of 225 lbs. in the VOITURETTE Class.



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Motor

We have decided to stick with the classic formula engine, the Honda GX200 utility motor. The exception is when the Honda GX160 is mandated in the case of the Thoroughbred handicap. Both these units are outstanding marvels of economical, mass production engineering.

In contrast to the classic formula, we will allow (actually encourage) “stage 1” modifications in our GRAND PRIX CLASS. From our experience, we feel “stage 1” motors enhance the drivability and fun factor significantly over stock motors without creating excessive performance or incurring unreasonable costs. Best of all, “stage 1” motors offer more things to tinker with! We have defined “stage 1” modifications as N-R Racing has defined them: removal of the governor, heavier valve springs, advanced timing, light weight fan, re-jetted carburetor, removal of the choke, disabling the low oil sensor, free breathing air filter, free flowing exhaust and usually, removal of the re-coil starter. In contrast, the VOITURETTE CLASS must use “box stock” motors. For our purposes, “box stock” is a more or less stock motor with minimal alterations to improve drivability. Governor may be removed, oil sensor disabled and a K&N style, free flowing air filter may be fitted. A stock exhaust/muffler combo or a “box stock” small pipe with a “weenie” muffler must be used. Clone motors are OK in both cases. The clones offer substantial cost savings and are more-or-less mandated by the cost constraints in the VOITURETTE CLASS. B&S, Tecumseh, Robin, etc. are also fine.

The spirit of the rule is a nominal 6.5HP utility motor. We will accept any utility motor under 200cc displacement for the GX200 class and any motor under 165cc for the GX160 class. Purpose built racing go-kart engines are not in the spirit of our formula. We have decided not to allow non-stock carburetors (beyond re-jetting). Engines must run on pump petrol without octane boosters or any other blends.

VOITURETTE CLASS engines are meant to be “box stock”. Official “box stock” rules forbid gas tanks over the engine and so (the cheap, ready to run motors), are fitted with fuel pumps and the gas tanks are remote. This is apparently a safety issue we don’t understand! Our rules don’t require fuel pumps (or forbid them) and leaves the gas tank location open.

- Engine: single cylinder utility motor, Honda GX200 or (GX160 if handicapped suggested). Stage 1 modifications encouraged in GRAND PRIX Class, minimal modifications in VOITURETTE CLASS. Motors must be muffled. “Stock”, B&S or RLV type muffler at a minimum. No “straight pipes” - our track has neighbors!



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Drivelines

Experience has shown us that a variable ratio belt drive is clearly the most effective transmission. We are not banning go-kart type simple centrifugal clutches but strongly advise against them in our driving conditions. So far they have been frustrating failures. We recommend the Comet TAV-2 unit or equivalents. We must say equivalents because the maker of the TAV-2 has recently gone out of business... There are alternatives but, unfortunately, none are as simple to install or as inexpensive as the TAV-2. (we have raised our build budget to reflect this)

We have decided not to ban final drive differentials. We have found that these enhance drivability tremendously. Differential units may be very challenging to fit in the budget and the track restriction might prove problematic but they are not otherwise ruled out. The classic cyclekart formula advocates one wheel drive. Our committee does not agree with that position. Solid rear axle, differential unit or one-wheel drive are all allowed.

- Clutch/ transmission: Comet TAV-2 (or now, equivalent) recommended.

Brakes

Our first car tested both drum and disk brakes. They work equally well. The classic formula calls for a disk brake. Our committee encourages drum brakes as more in the spirit of the period. One of our cars tried band brakes (a pre-WWI anachronism) and after some fiddling got a pair of these to work almost as effectively as a single drum. It is not our intent to make anyone feel uncomfortable (unsafe) and so the committee has decided to leave brake systems open.

- Braking systems: you must have a functional brake but other than that, details are open. Hand, foot, cable, rod, drum, disk, band - all are permitted. Drum brakes encouraged.



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Suspension

Front suspension schemes should follow the inspiration car. In our period this was usually a beam axle on semi-elliptic springs. The classic formula calls for 2' buggy seat leaf springs and typically this is the right choice. Lighter cars from the period often had 1/4 elliptic schemes. Almost all cars in the period used beam axles. A handful of potential inspiration cars had coil springs and independent front suspension through a sliding pillar arrangement (Morgan and Lancia as most notable examples). None of us have made period, friction type dampers yet but the committee strongly encourages doing that. Front suspension is absolutely critical to success on our bumpy track. Without supple front suspension, steering will be severely compromised because the wheels will not be in contact with the ground very often!

The classic formula calls for no rear suspension. We are more open on this. While the cars work reasonably well without any rear suspension they seem to work just a little better with some rear suspension. We have tried a limited travel 1/4 elliptic scheme that works well and we have tried a fully functional, longer travel, rear suspension enabled through the use of a sub-frame for the engine/drive unit. The tradeoffs for rear suspension are weight, cost and complexity. Chain alignment is the critical issue.

- Front suspension: following the inspiration car, generally a semi-elliptically sprung beam axle.
- Rear suspension: none or following the inspiration car. None is a sensible choice.

Safety

It must be understood by the builders and all drivers that what we are doing is inherently unsafe! These are fragile, unstable, dangerous little machines - that is precisely why they are so much fun. We expect builders to take care that they are not creating a reckless menace but beyond that we are children of John Stuart Mill.

- "Kill" switch required.



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Chassis/ Bodywork

The classic formula calls for a plywood “monocoque” covered in foam and then fibreglas with chassis rails (steel tubes) attached to the sides of the plywood box in order to mount the front suspension and rear axle. The committee sees the simple merits of this scheme and recommends it enthusiastically for the VOITURETTE CLASS but does not want to exclude doing things better and more in the spirit of the times. Our approaches so far have mostly utilized ladder type chassis with built up bodywork added. There were a handful of monocoques in our period (Lancia and Voisin as notable examples) but generally, bodywork sat on a ladder chassis. Bodies were wood or metal framed with a wood or metal skin on the framework. “Fabric” bodies, very popular in our period, used fabric as the finish layer over wood - much as one of our cars uses Sintra over wood. Our committee’s bias is clearly toward formed metal and we’ve decided not to put any rules in its way!

Most important, for both the chassis and the bodywork, is to be guided by the inspiration car. Our scoring system balances race results with subjective, period appropriate judging in the Concours d’Elegance. Fastest may not win the overall prize.

- Chassis: technique open, but a box steel ladder type chassis generally encouraged.
- Bodywork: technique open, but our emphasis is on in-the-spirit-of-the-period.

Chassis Tag

Cars are not allowed to race or be judged without a chassis tag. At the minimum, this tag should declare the inspiration car, the builder and the chassis number. Chassis numbers are assigned by the Constructors Committee in sequential order of substantial project initiation. Let us know what you are planning to build. Give us a provisional spec.: wheels, general dimensions, drive scheme, etc., and we will give you a chassis number.

Racing numbers are chosen by the builder but are subject to availability. Number 1 is reserved for prior year champions. 2, 3, 6, 7, 8, 11, 15, 16, and 111 have been spoken for so far.



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Compliance

The committee would like to be clear that we are offering suggested guidelines. We will not be aggressively enforcing nit-picky rules. Everything is on the honor system.

We will not be doing forensic accounting to verify that the budget is not exceeded. However, the committee members know very well what things cost and distrust of whether a car is “on budget” or not may effect concours scores. We know from experience that a car that does not incorporate salvaged materials is not likely to be “on budget”.

We will leave the possibility of disqualification or the application of competitive handicaps to cars that appear to have an “unfair advantage” based on an apparent blatant bending of the rules, or grossly overrunning the budget allowance to the sole discretion of the Gittreville Grand Prix Race Marshal. The Race Marshal will have the authority to impose race-day handicaps unrelated to this set of builder’s guidelines. Handicaps are intended to level the field and may be either beneficial or punitive. It is assumed that no handicaps will be so severe that they dramatically affect the results. Handicaps are like stage 1 engines - more to fiddle with! Don’t take this too seriously.

The constructors committee is available for advice on any aspect of car building. We are very open with information and more than willing to share our experiences to date. The committee members have made terrible mistakes that they hope to help others avoid. You will find that the committee are especially free with their opinions...

Membership in the constructors committee is conditional on three things.

1. Experience building and driving car.
2. Good faith compliance with the Builder’s Guidelines as the committee maintains them.
3. Willingness to share information. We are doing this for fun, not for cutthroat competition.

The constructor’s committee exists to help all interested builder’s complete their projects and thereby enable an outstanding field of cars for The Gittreville Grand Prix!