New England Hillclimb Association (NEHA)
2023 Annual Awards Banquet and 2024 Season Rules Meeting

General

Submitted: Mike Wilson

Section: New Rule

Proposal: Drivers may opt to have their times excluded from the event class trophies and all year-end points calculations. The normal class designation is used for tech; cars will have E (excluded) in front of their number.

Thoughts: This would mean that Dan Rutan would not have had to "break his transmission" at Okemo 2005 to keep from affecting the King of the Hill points race. He could have just opted to have his times not count. Last year this was tabled for further thought. I think the exclusions are rare enough that they should be done manually, leaving the existing timing and scoring software alone. Competitors who are affected can remind the points keepers as needed.

(Item that we will include each year to ensure that we take action) / Submitted as a reminder from Mike Wilson.

Discussion and nomination of Technical and Classification committee members.

CLASSIFICATION COMMITTEE: Kevin Gale • Kevin Erickson • Ryan Widing

TECHNICAL COMMITTEE: John Reed • Jimi Heyder • Drew Young

POINTS KEEPER: Kevin Gale

Technical & Safety

Submitted: Jamie Melhuish

Section: 6.H.

Proposal: (Remove) "H. Audio Warning – An audible warning system is required, generating between 80 and 90 decibels of sound when measured 50 feet from the vehicle."

Thoughts:

This rule was written to mirror Pikes Peak prepared electric regulations, however drivers find the audible system very distracting while racing. This makes the racing less safe. Additionally, the noise might impact people living near the hillclimb. We should be making our race cars quieter, not louder. The less we antagonize the locals, the better. Finally, we don't ask quiet cars to be more noisy, so why do that for prepared electric?

Submitted: Jeff Denmeade

Section: New Rule

Proposal:

Rule to be added Half cage addition. Cars with a half cage that meets the criteria within these specifications shall be allowed to go 10-12 seconds faster (depending on hill).

The specification of this half cage is such: Main hoop must be above the helmet and braced from behind by a 'X' bar going to the rear shelf or inner wheel hub wells, with harness bars if running a harness.

This main hoop and all other bars are to be the diameter and thickness per rules of a full cage. Coming forward off the main hoop shall be two bars: bar 1 will be a sill bar ending either on the floor, leaving room for a possible added full cage in the future, or on top of the sill forward of the door opening. The second bar shall be a diagonal off the main hoop protecting the seat area, this bar can end on top of the sill bar forward of the seat.

The Main hoop can be bolted to the floor and plated on the underside, or welded to said plates. Reasoning Description: This allows a step-up to a full caged car.

For a car to go from a street car to a full-on caged car is a big step and commitment most people wont take, but allowing a step up is a good option, if the person decides they dont want a full caged car or decides to sell the car a half cage is easier to remove with minimal impact to the interior.

Thoughts:

This adds a level of safety we can accept for most with a street car, it also will have most drivers who go this route not being too worried about watching a stop watch instead of the road. It also allows a car to be a daily and transcends daily use and competition as some states don't allow fully caged cars to be registered (i.e.: Connecticut), unlike some states like Vermont that doesn't care. This rule also allows that step prior to full commitment to prep a car and its partial standing allowing more people to enter and slowly step their car up to the highest level of prep from street car.

Submitted: Mike Wilson

Section: 4. E. 2. (c) Breakout times

Proposal: Discussion to discuss the short course for Okemo breakout and how it gets decided

Thoughts: None

Classification Regulations

Submitted: Jamie Melhuish

Section: Complete reorganization of sections 2, 3, 4, 5

Proposal: (see separate attachment)

Thoughts:

The current structure of the rules is confusing to follow and makes it hard for a competitor to classify their car. The changes are focused on:

1. Basic rules first

2. Class adjustments and computations second

3. Class determination tables third.

Street Prepared and Unprepared used to share a list of adjustments (with notes added for each class); these are now separate lists for clarity and ease of computation.

Note in SP and U rules I have added the lines:

A roll cage may be installed. Racing seats and harnesses may be installed.

I have not changed any of the classification determinations, except in SP and U where language read "less than X.XXX cc/lb" for multiple classes, which enabled lower classes to be in multiple classes at once. Now there is a range for each class (e.g., Class Unprepared 3 (U3): 1.000 to 1.549 cc/lb).

Submitted: Mike Wilson

Section: New section

Proposal:

9. DOT (D) class; also crash in D class and you may not drive an uncaged car for at least thirteen months.

A. Class Requirements

1. NEHA Unprepared legal cars less than 15 years old by door tag. U1 and U2 legal cars less than 60,000 miles and fewer than 30 hillclimb and track weekends, U3 and "slower" less than 100,000 miles and 50 hillclimb and track weekends. If a salvage title then less than 5 years old. For each salt/snow/ice season use or structure crash repair other than salvage subtract 3 years per from eligible age. Entrants to provide data such as CARFAX or title as needed.

2. Drivers must have at least a full season qualifying for year-end participation to be allowed to select this.

3. If an entrant running under the DOT rule crashes anywhere on course, either up or down, then that entrant may not drive an uncaged car at any NEHA event for 13 months, or until after the same event the following year, whichever is longer. Driving a caged car at a NEHA event during that period multiplies the remaining time by 1.5.

4. The breakout rule (Tech 4.E.2.b) will not apply.

Thoughts:

As in previous years, a way to be allowed to drive a fast car fast. The 15 year age limit is an attempt to keep out old airbags and inflators. The mileage etc. is an attempt to keep out chassis that are worn out and no longer meet the DOT safety homologation. I originally thought to ban salvage and crash repair, but decided they could be regarded as the same as winter accelerated aging.

It would be open for discussion whether car/driver combinations that are subject to the "need a cage due to previous breakout" would be allowed at the hills where they previously broke out. I can see both sides, and I am not committing this proposal to either.

Not originally my idea, see this about the San Martir hillclimb in Mexico: (Facebook event link)

For 2024 they seem to be allowing much older cars. From their email to Mike about 2024:

> Tarmac Racing Club
> I did some reading about the safety equipment on cars through the years. The airbag has saved many lives since its introduction. Airbags have been mandatory since 1998 on all American built cars. I will do the cutoff on the older than 2000 year models. Also, gas tanks will need to be plastic equipped from the factory to be eligible. So, a bulletin will be published with these revisions for the street prepared class.

2. PREPARED

A. Displacement Determination

1. Actual displacement is the total physical volume of all cylinders in cubic centimeters (cc).
2. For a side-port rotary engine, use the displacement rated by the manufacturer and multiply by 1.62 to get actual displacement.
3. For supercharging, turbocharging, or nitrous oxide induction, multiply the actual displacement above by 2 to get modified displacement.

B. Naturally-aspirated cars use actual displacement, otherwise (3 above) use modified displacement for the following adjustments to determine Prepared displacement:

1. 4WD or AWD: Add 25% of displacement.
2. Cars competing on tires that are DOT approved (DOT label on sidewall): Subtract 12% of displacement.
3. Cars with a total throttle plate area of less than 0.65 mm2/cc: Subtract 12% of displacement.
4. Cars configured for production class racing (see below): Subtract 12% of displacement.

Classes recognized as production classes include SCCA IT and AS; production classes in SCCA, EMRA, and SVRA; and most Street Stock classes. Criteria for recognition of existing classes, or for use of this factor on cars not originating in these classes, are retention of all-original body, frame, floors, and firewalls; use of all original control arms and original suspension geometry; original configuration of engine, in stock position.

C. Prepared Class Determination

1. Prepared 1 (P1): Prepared displacement of 4501cc to 8000cc.
2. Prepared 2 (P2): Prepared displacement of 2201cc to 4500cc.
3. Prepared 3 (P3): Prepared displacement of 1601cc to 2200cc.
4. Prepared 4 (P4): Prepared displacement of 1600cc or less.

3. STREET PREPARED

A. Class Requirements

1. This category is based on stock production vehicles that are easily recognized as such, and must have operational lights, horn, glass, wipers, mirrors, door handles, bumpers, bumper reinforcement bars (in good condition OEM or equivalent), both front seats, heater and dashboard.
2. Updating or backdating within the model will not be penalized (factors will be assessed after the changes).
3. Kit cars or engine swaps will be classed where deemed most competitive.
4. The following items may be removed: emissions equipment, sound deadening, sound system, head liner, floor covering, trunk area covering, rear seating (provided that proper separation remains or is installed between driver and fuel area). Removal in excess of the above invokes the excessive lightening penalty.
5. Doors may not have any structure removed causing them to be excessively lightened – specifically the intrusion bar, outer framework and basic structure of the door must remain intact.
6. The floor and trunk area must remain intact and in stock location. Any modifications to the floor or trunk area must be sealed as good as the factory original.
7. All exterior body panels must appear as stock and remain in place (fender flares are free).
8. Relocation of accessories, batteries, fuel system, electrical components is allowed, provided that the exterior of vehicle remains as produced.
9. Interchange of production options within the model is free.
10. Engine and driveline modifications are allowed.
11. Rim size may be changed.
12. Tire size is free but the tread may not be seen from above. Tires must be DOT approved (DOT label on sidewall).
13. Wheel openings shall retain their original contour when viewed from the side.
14. A roll cage may be installed.
15. Racing seats and harnesses may be installed.
16. The above items do not void any applicable safety requirements as listed in the Technical and Safety Requirements.

4. UNPREPARED

A. Class Requirements

1. All cars shall be as-produced, available in North America, and at least 500 made by the manufacturer.
2. No kit cars and no engine swaps will be allowed in Unprepared.
3. Must be capable of passing a Vermont State Vehicle Inspection.
4. Updating or backdating within the model will not be penalized (factors will be assessed after the changes).
5. No stock equipment or parts may be removed unless they were available as an option on that particular vehicle. The only exception is removal of the A/C system.
6. Some interior parts may be minimally altered (but not removed) to allow installation of safety equipment.
7. The engine is to be the original type and size for that year of car.
8. Other than the air filter and its housings the induction system may not be modified to allow more air into the engine, such as oversize throttle bodies, carbs, or intake manifolds.
9. A piggyback computer that can modify the mass air flow or MAP sensor is illegal.

10. No modifications to the exhaust manifold. The exhaust system may be replaced with a "cat-back" system (where applicable) that runs in the stock location and exits in the stock location.
11. Bolt-on bracing and minor suspension reinforcements that require no cutting or fabrication for installation are allowed.
12. Springs must be on original seats.
13. Rim size may be changed.
14. Tire size is free. Tires must be DOT approved (DOT label on sidewall), minimum treadwear rating 50.
15. Fender lip may be flattened to help prevent tire chafing.
16. OEM flexible brake lines may be replaced with aftermarket or motorsport braided stainless steel lines.
17. A roll cage may be installed.
18. Racing seats and harnesses may be installed.

5. UNPREPARED AND STREET PREPARED CLASS DETERMINATION

A. Class Calculation Method

1. Some classes in Unprepared and Street Prepared are limited to two-wheel drive (2WD) vehicles.
2. Classes are determined within a category by the ratio of adjusted engine displacement (in cubic centimeters) to vehicle weight (in pounds).
3. Curb weights are those published in the N.A.D.A. used car dealer guide, if available, or on the vehicle manufacturer's tag if equipped and not tampered with. If the tag weight is used, it will be given in gross vehicle weight and must be adjusted. Subtract 175 lb per occupant, from the GVWR to get curb weight.
4. Side-intake-port Wankel rotary engine manufacturer-rated displacement is multiplied by 1.62 (to give actual displacement) prior to applying adjustment factors.
5. To determine your car's class, multiply actual displacement (in cc) by each applicable adjustment under 5.B. (Street Prepared) or 5.D. (Unprepared) below. Sum up the adjustments (adding the positive and subtracting the negative) and add this total to the actual displacement, then divide by the car's weight to get a value in cc/lb. Apply this value to the table in 5.C. (Street Prepared) or 5.E. (Unprepared), noting whether 2WD or 4WD/AWD.

B. Street Prepared Adjustment Factors (note whether positive or negative to add or subtract adjustment)

1. Variable valve timing 25%
2. Four-wheel drive or AWD 25%
3. Wheel size difference (diameter and width) per .5 inch 1%
4. Tire treadwear rating less than 100 8%
5. Non-stock anti-roll bars 5%
6. Non-stock springs 5%
7. Modified suspension 5% (Other than shocks, alignment, and bolt-on reinforcement.)
8. 6-point (or more) roll cage -20%
9. Intact interior (only with full cage) -5%
10. Excessive lightening 15%
11. More than 2 valves per cylinder 10% each (Stratified charge valves not included.)
12. More than 1 camshaft per bank of cylinders 5%
13. V type engine configuration 10%
14. 1 venturi or injector per 4 or more cylinders -20%
15. 1 venturi or injector per 2 cylinders -10%
16. Non-stock exhaust manifold 10%
17. Non-stock induction 10%
18. Turbocharger 30%
19. Supercharger 25%
20. Intercooler 25%
21. Excessive sound (over 96 dB) at 50 feet 15%
22. Nitrous oxide (mandatory fire system) plus 1 Class
23. Diesel -25%

C. Street Prepared Classes

1. Street Prepared 1 (S1): 1.500 or above cc/lb
2. Street Prepared 2 (S2): 2WD 1.500 or above cc/lb
3. Street Prepared 3 (S3): 1.060 to 1.499 cc/lb
4. Street Prepared 4 (S4): 2WD 1.060 to 1.499 cc/lb
5. Street Prepared 5 (S5): 0.900 to 1.059 cc/lb
6. Street Prepared 6 (S6): Less than 0.900 cc/lb

D. Unprepared Adjustment Factors (note whether positive or negative to add or subtract adjustment)

1. Variable valve timing 25%
2. Four-wheel drive or AWD 25%
3. Wheel size difference (diameter and width) per .5 inch 1%
4. Tire treadwear rating (50–150) 8%
5. 6-point (or more) roll cage -5%
6. More than 2 valves per cylinder 10% each (Stratified charge valves NOT included.)
7. More than 1 camshaft per bank of cylinders 5%
8. V type engine configuration 10%
9. 1 venturi or injector per 4 or more cylinders -20%
10. 1 venturi or injector per 2 cylinders -10%

11. Turbocharger 30%
12. Supercharger 25%
13. Intercooler 25%
14. Excessive sound (over 96 dB) at 50 feet 15%
15. Diesel -25%

E. Unprepared Classes

1. Unprepared 1 (U1): 1.550 or above cc/lb
2. Unprepared 2 (U2): 2WD 1.550 or above cc/lb
3. Unprepared 3 (U3): 1.000 to 1.549 cc/lb
4. Unprepared 4 (U4): 2WD 1.000 to 1.549 cc/lb
5. Unprepared 5 (U5): 0.840 to 0.999 cc/lb
6. Unprepared 6 (U6): Less than 0.840 cc/lb