



## H2R Challenge - Mustang 4

Rules 1.8 8/ 22/15

### **The “SPIRIT” of this H2R Challenge – Mustang 4 is as follows:**

A real sprint and/or endurance-racing event open to Harris Hill Members only. The Challenge is a racing event as inexpensive as possible while maintaining all recognized safety regulations previously established by the larger sanctioning bodies. It’s a friendly competition between drivers in “like” machines, a true “spec” series.

### **The “SPIRIT” of this class is as follows:**

Showroom Stock “OEM” 1979-1993 2.3L Mustangs.

1979-1986 2.3L Capris.

1983-1988 2.3L T-Birds \*

1978-1981 2.3L Fairmonts.

1979-1981 2.3L Zephyrs.

\* Turbos must be removed, and rear discs must be converted to drums

What we would *like* to see are 100% OEM 1979-1993 2.3L Mustangs with more than 100,000 miles on the drive train, outfitted with safety equipment specified in the H2R Challenge General Rules.

If any questions arise from the interpretation of these rules, or during an event, the SPIRIT of the rule will be the guideline for the final decision by the race committee.

Driver's whose cars do not meet the OEM or performance rules MAY or MAY NOT race but will not be scored or earn points for the event or series. See "Spirit" section above.

Harris Hill is a club. It is not the SCCA. After an SCCA event, the drivers all go home to different parts of Texas and surrounding states, sometimes never interacting with each other again. Here at Harris Hill, we all know each other and see each other sometimes on a weekly basis. The safety rules, performance rules and driving rules herein are designed to promote entertaining, real competition without the overhead of who spent more or overly aggressive driving and contact racing. This is why the "spirit" of the rules is listed and will be referred to when casting judgment. Knowing this available disparity, the *smart* builder or driver should err well within the boundaries of the rules rather than pushing the edges.

### **Expense Mantra:**

Racing costs money.

Used parts are extremely affordable and easy to find.

When asked to make changes to your car or safety gear to comply with these event rules, please refer to the racing expense mantra. If the costs of this event offend your sensibilities or exceed your budget, then racing this event is not for you and we are sincerely sorry.

The H2R Challenge is **NOT** crap-can racing, despite the flags and nomenclature that may be used. The cars need to be attractive and clean. Remember this is a spectator sport as well!

### **H2R Allowed performance changes to the car:**

This is an OEM stock production based class. The horsepower cap is based on the highest-horsepower cars from the model range. There are essentially three different "categories" of Mustang 4-Cylinder cars:

- 1) 1979-1988 - Carbureted 2.3L cars yielding 88 hp.
- 2) 1988-1990 - EFI 2.3L cars yielding 88 hp.
- 3) 1991-1993 – Twin-plug 2.3L EFI cars yielding 105 hp.

All parts of the car must be OEM stock as equipped on the greater majority of 1979 – 1993 Mustangs. Some LX and GT parts are allowed:

OEM LX/GT front brakes / spindles

Maximum Motorsports Caster/Camber plates

Hawk/EBC pads

8.8 rear end w/ factory traction lock – any gear allowed

K&N drop -in filter

Schoenfeld Race header – offset muffler 2.5” exhaust

KYB GR2 dampeners

Ford Racing "C" spring

ANY "Factory" sway-bar combination front & rear

Maximum wheels size is the factory 16" x 7" Pony wheels; any and all 15" x 7" factory wheels are allowed; maximum tire section is a 225mm.

Spec Tire is:

**225/50R 16 -- Dunlop Direzza Sport ZII Star Spec**

ALL interior can be removed with the exception of the dash assembly and door panels. However, you can gut both.

2600 lbs. min weight.

105 HP maximum with approximately 93 RWHP. This means the 1991-1993 twin-plug cars do not have any allowed engine modifications beyond the above mentioned modifications. Earlier cars can make modifications not to exceed 93 RWHP / 105 HP.

**NO changes, additions, removals or modifications are allowed unless specifically addressed in the rules.**

**NO aftermarket replacement parts are accepted unless specifically mentioned. If the rules do not specifically say you can do it, you are not allowed to do it. (i.e. polyurethane, delrin bushings for suspension or spherical rod ends for bump steer)**

*\*If you cannot determine the difference between a safety and performance rule, consult a race steward BEFORE making the purchase, change or modification.*

**The following are absolutely **forbidden** (repeated here because we know you will ask):**

- No aluminum drive shafts, nor flywheels
- No rear disc brakes (really? You're not supposed to use them)
- No 5 lug conversions
- No tinted windows
- No sun roofs/T-Tops, convertibles
- No other suspension mods (3 link, panhard bar, watts link, SLA)
- No polyurethane, delrin bushings
- No bump steer kits
- No solid or offset rack & pinion bushings
- No brake cooling ducts
- No coolant.
- No sub frame connectors
- No strut tower bracing
- No rear shock tower bracing
- No X2 ball joints
- No aftermarket or factory boxed upper or lower control arms (front or rear)
- Must use factory "collapsible" steering column
- No aftermarket aero, front or rear

## **H2R Allowed performance changes to the car:**

Minor repair and/or replacement parts for the engine and drive train may be aftermarket OEM replacement parts.

The parts must be the same specification as OEM 1978-1993 Fox platform, with no performance enhancement or appearance change. (Examples are water pump, timing belt, seals, gaskets, hoses, filters)

Major parts such as the crankshaft, block, head, and cams must be OEM 1978-1993 Ford factory replacements

***If there is ANY question on this, consult a race steward FIRST***

Brake rotors are Power Stop Brake Rotors.

Brake fluid, engine oil, transmission oil, rear diff oil is open.

Engine coolant is forbidden but WATER is recommended (water wetter or equivalent is ok). Spilled coolant is hard to clean off the track!

Power steering and A/C system removal is open.

Catalytic converter must be either removed and replaced with a “test pipe” or cored out. This is for fire safety. The “test pipe” may be welded in but may not exceed the length of the OEM catalytic converter by more than 6 inches total.

The clutch pressure plate must be OEM or OEM spec.

Fuel must be “pump” fuel from a regular gas station. (93 octane or less)

The H2R Challenge does allow some interior plastic, carpet, switch assembly wiring, heating, A/C, and non-metallic item removal. Stock dash and door panels must remain but can be gutted. **Door glass must be removed.** The spirit of the rule is to maintain the stock appearance of the cars.

Metal removal from the interior for the purposes of safety is acceptable, (ex: Roll cage clearance for rear shoulder belt mount) BUT must be done at a minimum. For example, you cannot cut off the seat belt towers when a notch or simple design change is possible. When in doubt consult a race steward BEFORE YOU CUT!!!

Shift knobs, pedals, gauges and other driver “comfort” items are open. Fender liners and mud flaps may be removed.

A “race” alignment adjustment is permitted and encouraged.

Stainless brake lines at the calipers and rear axle are open.

Parking brake removal is open.

The minimum weight of the car and driver is 2600 lbs. post-race. Drivers will be responsible for making minimum weight to obtain points for that race. When possible, Harris Hill will have scales available pre-race for participants.

Overall horsepower of the car will be a tech item when possible. This test will be comparative rather than absolute. Tests will be done using accelerometer type software like "Pocket Dyno" for the iPhone. The weight of your car will be required for this test; see above rule. The maximum horsepower accepted is 105 HP. This value will be filled in later as we learn more about the horsepower of old 100K 2.3L Mustang engines. See "Spirit" of the rules above.

### **Point System:**

#### 1) Position points:

Position points will only be awarded for finishing positions in class. Racers who finish 1st will earn 10 points, 2<sup>nd</sup> - 7 points, 3<sup>rd</sup> - 5 points, 4<sup>th</sup> - 4 points, 5<sup>th</sup> - 3 points, 6<sup>th</sup> - 2 points and 7<sup>th</sup> - 1 point. To earn position points, racers must run at least one race lap. Points will be awarded in class for enduros in the same way as in sprint races. If two or more drivers share a car during an enduro, the total points earned by that car will be split equally among the drivers who drove it in that race.

#### 2) Bonus points:

A racer will earn 1 bonus point for each car in class that finishes the race behind the car driven by that racer. Bonus points will be earned by all cars finishing the race except the car that finishes last in the class. Cars that do not finish the race (DNF) or are disqualified (DQed) do not count as cars beaten in the class. There will be a 10 point limit on bonus points available in any race. For example: The car that finishes 21<sup>st</sup> in a 22 car field where all 22 cars finish will earn 1 bonus point. In that same race the car that finishes first will earn 10 bonus points.

#### 3) Event points:

Each racer will earn 5 points for each event attended where the racer starts at least one scheduled race. To qualify as a starter, the racer must have passed the starter stand on the track after the green flag has been displayed to start the race. A late start after the field has started will count as a start if the racer passes the starter

stand on the track. There will be a maximum of 25 points available for each year in this category.

#### 4) Championship points:

The best 10 race point totals for each racer in all points scoring races for the year will count toward the H2R Championship. Each monthly event will have 2 races thus 16 races for the year. Ties for the first three positions will be broken by the highest total in the 9th race, then 11th race, then the 13th race, etc.

## **Safety:**

### **Safety mantra**

Driving cars is dangerous.

Racing is even more dangerous, one could get seriously hurt or worse.

If you aren't prepared to take that risk, racing cars is not for you.

Driver/participant has to accept the responsibility for the risks.

**Safety Rules:** The safety rules below are only the “**Minimum Safety Requirements**”. Each participant is free to add additional safety equipment. Each driver/ participant is responsible to build to the level of safety, above the minimum, they see fit.

1) Radio communication will be required during race (listen only so we have a communication channel for safety workers)

2) A full-face, Type SA helmet, Snell SA2010 or newer is required. A HANS or similar racing neck brace or foam racing collar is mandatory for all drivers.

3) Full SFI 3.2A/5 or FIA certified fire-retardant driving suits must be worn by all drivers at all times while on the track. Suits may be one- or two-piece. Fire-retardant FIA- or SFI-rated socks, racing gloves and shoes are also required.

4) Roll cage - Full roll cage w/ door bars that meets safety tech review by H2R. Tubing must be 1.75” DOM as a minimum (World Racing League rules are good reference). Must also have SFI rated padding in any areas where the driver may make contact with the cage. Ask questions and get guidance prior to building your cage.

5) Any 1 piece race seat(s) with roll cage mounted seat back support may be used with current SFI rated 5 point harness.

6) Fuel Cell: A road racing fuel cell (current SFI rated) may be added provided it is located in the same location as the OEM tank and does not change the center of gravity or weight balance of the car.

7) Fire Extinguisher: Must be reachable by the driver while strapped in the car (2 ½ lb minimum). The mount must be all metal and strong enough to withstand the extremely high force encountered during a crash, rollover or similar catastrophic load.

8) Master Switch (Kill Switch): Cars shall be equipped with either an aftermarket master kill switch OR the OEM ignition switch. The outside of the car near the switch must be labeled with minimum 6" lightning bolt.

a) If an aftermarket master kill switch is installed, it shall be in a position easily reachable by the driver when he/she is fully strapped into the racing harness and outside emergency crew.

b) If the OEM ignition switch is used as the master switch; The OEM ignition switch, wiring, key, lock tumbler assembly and body shall remain unmodified and retained in their OEM location, appearance and operation.

c) **Note:** In either case above, the steering column lock must be carefully removed from the OEM assembly and the proper master switch markings need to be on outside of the car.

9) Securely mounted battery in box or with insulated battery terminals

10) Any steering wheel and/or quick release assembly may be used.

11) Tow hooks (front and rear).

12) Window nets may be added as a competitor elected option.

13) Minimum (2) working brake lights. Brake lights must be covered with a clear protective film (ie: package tape) to help contain pieces of the lens, if broken.



14) Windshield banner – All car racing in the H2R Challenge series must have a H2R Challenge windshield banner.

15) Car numbers – effective Event #1 2017 all cars must have a number ball or square panel on both doors which contain the car number. The number ball or square panel must be either white with black numbers or black with white numbers. No other colors are allowed. Numbers must be at least 12” tall, a minimum stroke of 1.5” and non metallic. White cars and black cars may have contrasting numbers without using a number ball or square panel provided the side of the car is all one color. The goal is clear readable numbers. This is not the place to get artistic.

16) Fluid leaks are considered a safety issue. Vehicles that are unable to contain their fluids may not be able to compete. Catch cans are encouraged.

## **Drivers:**

### **Spirit of the driving rules:**

On any part of the track, if you even THINK that there MAY be a portion of another car next to any portion of your car you must give that other car 1 full car’s racing room on the hard surface of the track.

If you are the car being given the 1 car space, be aware that this space is unlikely to be “the” racing line and is very likely to be a line with less grip than you may need at full speed.

At H2R contact may happen but rubbing is NOT racing here.

### **Driving Rules:**

\*The following rules are copied directly from the NASA and SCCA driving rules. They are established, tested rules used for governing drivers of all calibers and classes across the country.

1) Blocking (Chopping) – A driver may choose to protect his or her line so long as it is not considered blocking or chopping. Blocking is defined as two (2) consecutive line changes “to protect his/her line,” and in doing so, impedes the vehicle that is trying to pass with each of the two (2) consecutive movements. Drivers are encouraged to check with the Race Director for a full explanation before the start of the race.

>Just one example of 2 consecutive line changes:

a) After consecutive laps that the lead car chooses a different line down the straight (as protection).

b) Then, specifically in front of the trailing car, crosses the track to retain the race line used in previous laps to enter the next corner.

2) Right to the Line - The driver in front has the right to choose any line, so long as not to be considered blocking. The driver attempting to make a pass shall have a right (not “the right”) to the line when their front wheel is next to the driver of the other vehicle.

3) Passing General - The responsibility for the decision to pass another car, and to do it safely, rests with the overtaking driver. The overtaken driver should be aware that he/she is being passed and must not impede the pass by blocking. A driver who does not watch his/her mirrors or who appears to be blocking another car seeking a pass may be black-flagged and/or penalized. The act of passing is initiated (in play) when the trailing car’s (Car A) front bumper overlaps with the lead car’s (Car B) rear bumper. The act of passing is complete when Car A’s rear bumper is ahead of Car B’s front bumper. Once the trailing car has its front wheel next to the driver of the other vehicle, it is considered that the trailing car has the full right to be there. And, that the leading driver must leave the trailing driver enough “racing room”.

a) “Racing room” at the H2R Mustang 4 Challenge is considered one (1) full car’s width on the hard surface of the track.

b) “No Passing” (yellow flag or yellow flag radio call) means a pass cannot even be initiated. Any overlap in a NO PASSING area is considered illegal.

### **Protests:**

The H2R Challenge series was established to be a wheel to wheel racing opportunity for club members/ friends who enjoy club style racing. As such it should be rare that there would be a need to protest a fellow competitor. Protests filed out of anger and/or not supported by fact, may result the protesting driver being penalized. Any protest must come from an H2R member driver who participated in the race being protested. The protest must be written and specifically detail the infraction. The protest must be delivered to a race official

within 15 minutes of the conclusion of the race being protested. H2R staff can identify which H2R members are serving as race officials. The race official(s) will distribute the protest information to all H2R member drivers of the race being protested. The H2R member drivers of the race being protested will meet and vote on the protest and if appropriate, assess a penalty. The driver filing the protest and the driver being protested may briefly describe the incident from their perspective. Neither will stay for any deliberation and they will not vote.

This is a self governing protest process. Only H2R member drivers participating in the protested race will participate in any meetings to discuss the protest and vote on any proposed action. All protests will be finalized on the day of the race.

**Cars:**

Eligible cars must comply with all safety requirements outlined above AND the class specific performance rules for their class.