



Supplemental National Rules for Formula Car Challenge

UPDATED 02.20.2020

SERIES OVERVIEW:

The Formula Car Challenge championship features three types of Formula Mazda open wheel racing cars. They are the Pro Formula Mazda (PFM), the Formula Mazda (FM), and the FormulaSPEED (FS). The majority of FCC events are sanctioned inside of the SCCA. These rules are supplemental to the current SCCA General Competition Rules that can be found here: <https://www.scca.com/pages/cars-and-rules>

SERIES CONTACT: The series is operated by World Speed Inc. <https://worldspeed.com/contact-us/>

MANDATORY SERIES PARTNERS DECALS AND DRIVER SUIT PATCHES

Cars must install Series partners decals in official mandated locations. Cars and driver suits that are not in compliance will not be awarded points, and may not be permitted on track.

CAR DECALS

- FCC series decal above nose #
- Mazda on both sides of engine cover
- Goodyear on both side pods
- “Flying M” Mazda logo on nose
- Red Line Oil on both sides

DRIVER'S SUIT PATCHES

- FCC patch on suit
- Mazda patch on suit

Note: To qualify for Mazdaspeed awards and contingency drivers need to be a team member of their program, and also check their contingency requirements. Visit: www.mazdamotorsports.com/

RACE POINTS CALCULATIONS

Points are awarded in the series based on the finishing order of each race, counting only the Series Competitors starting each event. Series competitors need only take the green flag to earn series points. They are not required to finish the race (as done by SCCA). The Top Twenty drivers are credited points for each race as follows:

1st – 29	7th -17	13th – 11	19th – 5
2nd – 25	8th – 16	14th – 10	20th – 4
3rd – 22	9th – 15	15th – 9	
4th – 20	10th – 14	16th – 8	
5th – 19	11th – 13	17th – 7	
6th – 18	12th – 12	18th – 6	

CHAMPIONSHIP POINTS CALCULATIONS

Regular Season FCC Champion is determined by the total points tally after all region events have been completed in the season with 2 race drops. (Winter Championship has no race drops)

Everything that is not explicitly authorized in these regulations, or in the technical bulletins which may be issued by the series during the season, is strictly forbidden.

DETAILED CAR TECHNICAL SPECIFICATIONS BY CLASS:

FORMULA MAZDA (FM) –

Manufacturer Moses Smith Racing (www.formulamazda.com)

The Formula Mazda is a 13B powered 5 speed H pattern tube frame car first designed in 1984. The car has been manufactured by Hayashi, Russell Racing, Star Race Cars, Fab Works, and the current manufacturer Moses Smith Racing. Any Formula Mazda from these builders will be allowed to compete if they meet the following rules.

FM.1 Every FM must meet 2019 SCCA GCR Technical requirements for the FM class which can be found here: https://formulacarchallenge.com/cms/wp-content/uploads/2020/02/GCR_-_October_2019.pdf

FM.2 Fuel: Only the Series-designated fuel may be used.

FM.3 Tires: Goodyear 470 compound tires (D2660 rear / D2659 front) – Competitors may use only one set (two fronts and two rears) of official tires per weekend (including doubles) during all qualify & race sessions. These tires must be declared by competitors and marked by the series. No other tires may be used during qualify & race sessions. It is the responsibility of the competitor to ensure their tires are marked appropriately. If after the start of any qualify or race session a single marked tire is damaged, defective, or otherwise unfit for use, once per weekend the competitor may be allowed to replace that tire with another tire upon verification and approval by the Race Director. If after the start of a qualify or race session for any reason (damage, defect, etc.) a competitor must change more than one, or a second, marked tire the competitor will lose two finishing positions for FCC scoring and season points purposes. This will not affect starting positions for races. Tires may not be changed for the purpose of gaining an advantage. Race Director may increase these penalties at his discretion. Rain tires may be used at any time.

FM.4 Transponder location:

The center of the transponder should be mounted 2.5" from the front bulkhead on the left side skin. There is no height requirement.

FM.5 Exhaust: All FM cars must have 18 Supertrapp plates (or less if needed to meet sound) and an end cap installed. Supertrapp plates must be installed correctly with all bolts installed and snug, be unmodified, and not use any additional spacers.

FM.6 Weight: Minimum weight with driver = 1350 lbs w/ 6 port 13B, 1400 lbs w/ 4 port Renesis.

FormulaSPEED (FS)

Manufacturer World Speed, Inc. (www.FormulaSPEED.us)

The FormulaSPEED2.0 is a Mazda MZR powered 6 speed sequential car. Cars and parts are available through World Speed Incorporated 707.935.9761

FS.1 Weight: 1335lbs minimum with driver (Note: At SCCA non-exclusive FCC events 1350 as per SCCA GCR)

FS.2 Fuel: Only the Series-designated fuel may be used.

FS.3 Tires: Goodyear 470 compound tires (D2660 rear / D2659 front) – Competitors may use only one set (two fronts and two rears) of official tires per weekend (including doubles) during all qualify & race sessions. These tires must be declared by competitors and marked by the series. No other tires may be used during qualify & race sessions. It is the responsibility of the competitor to ensure their tires are marked appropriately. If after the start of any qualify or race session a single marked tire is damaged, defective, or otherwise unfit for use, once per weekend the competitor may be allowed to replace that tire with another tire upon verification and approval by the Race Director. If after the start of a qualify or race session for any reason (damage, defect, etc.) a competitor must change more than one, or a second, marked tire the competitor will lose two finishing positions for FCC scoring and season points purposes. This will not affect starting positions for races. Tires may not be changed for the purpose of gaining an advantage. Rain tires may be used at any time. Race Director may increase these penalties at his discretion.

FS.4 Upgrades: The only allowable upgrades to the FormulaSPEED2.0 is the addition of on board cameras, a steering sensor, and two brake pressure sensors.

FS.5 The Intent of the FS Class

It is the explicit intention of these rules and regulations to prohibit innovation and alteration of the cars except as provided by these regulations, or event supplementals.

FS.6 Exhaust: FormulaSPEED spec header, and FormulaSPEED Phase9 Muffler part#05-059 with no modifications

FS.7 Suspension: Suspension arms are marked with FS hologram decals, no modification to any suspension is allowed. Only the stock location for the rear pickup points are permitted to be used, and large spacers installed per this diagram (spacers in blue.) Spec springs are 400# front, and 600# rear.

FS.8 Anti Roll Bars: Spec anti roll bars may be adjusted within their range, or disconnected completely.

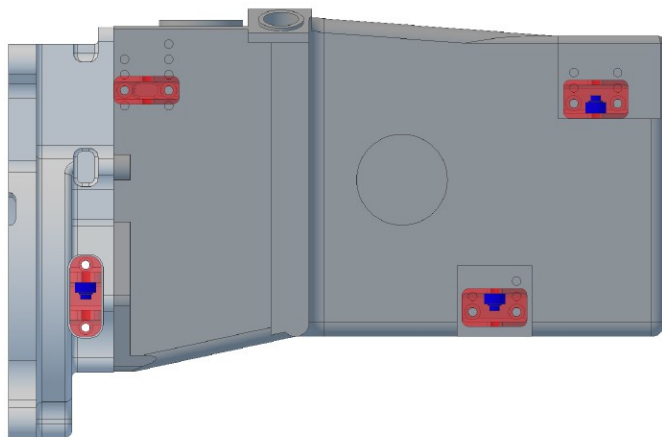
FS.9 Brake Pads: Only series-designated FS brake pads may be used.

FS.10 Transponder: An AMB transponder must be fitted in the provided location on the rear wing upright.

FS.11 Clutch: The clutch disc and pressure plate must be bolted directly to an unmodified stock flywheel, or optional 2016 upgraded spec lightened flywheel part # 06-006.

Clutch Disc: MAZDASPEED 0000-02-5415-AC

Pressure Plate: Mazda LF04-16-410A



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FORMULA CAR CHALLENGE

presented by: **GOODYEAR**

Part Diameters & Weights

Clutch disc: 8.5" min. weight 1.7lbs

Pressure Plate: 9.875" min. weight 9.4lbs

Flywheel: 11.0" min. weight 16.0lbs

Car	Engine	Wheels & Tires	Aero	Transmission	Weight	Notes
Formula Speed2.0 (FS)	2.0 Liter Mazda MZR	(F) 8" (R) 10" Goodyear 470 compound tires (D2660 rear / D2659 front) Wheels must be 3 piece FS wheels with FS logo, or 2016 one piece FS wheels with FS logo.	Dual rear adjustable main planes. Front main plane is fixed. Front winglets are adjustable. Wings and bodywork are delivered with an FS marking that is to remain visible for scrutineering. 1/8" Gurneys on front flaps, and 1/2" Gurneys on rear upper and lower wings are mandatory. Wings can be adjusted within stock adjustable range.	6 forward speeds and reverse with an open differential. No lift shift system. Spec gears are as follows: 12/29 15/29 17/26 18/22 24/26 24/24 Ring & Pinion 9:31	1335 with driver	ECU map and engine shall be sealed by Hasselgren Engineering. FS hologram sealed Ohlins TTX dampers. Hasselgren Engineering spec FS intake must be used. No part of the car shall be altered from FS original parts except for repairs that do not affect performance. Spec springs are 400# front, and 600# rear.

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PRO FORMULA MAZDA (PFM)

Manufacturer Star Race Cars (www.starracecars.com) The Pro Formula Mazda is the same RX8 powered 6 speed sequential racecar used in the Star Mazda Championship from 2004-2012, and the Pro Mazda Championship from 2013 - 2017. All PFM cars competing in the Formula Car Challenge must comply with the 2012 Star Mazda Rules as available below except where stricken through or otherwise stated herein – where otherwise stated herein these rules supersede Star Mazda rules. Where “Star” and or “IndyCar” are mentioned in the 2012 Star Mazda Rules it should be assumed that the Formula Car Challenge and NASA (or whichever sanctioning body an event is held under) will do the same.

2012 Star Mazda Rules available here:

[http://formulacarchallenge.com/Documents/2012 Star Technical Rules Excerpt 4.10.14.pdf](http://formulacarchallenge.com/Documents/2012%20Star%20Technical%20Rules%20Excerpt%204.10.14.pdf)

PFM.1 Engine:

- 1.A Engines must be built and have official motor seals from an approved builder. Approved engine builders are:
- o Star Race Cars (motors built or sealed by Star Race Cars prior to 1.1.13)
 - o Daryl Drummond Enterprises, Inc. (SCCA PFM FA spec) 541-761-5520.
 - o Speed Source (Pro Mazda Championship spec) 954-578-7071.
- 1.B Engine ECU map may be Star or Pro Mazda Championship.
- 1.C Specified air filter is K&N Filter P/N 050-539 only with original air box P/N 050-560.
- 1.D Option air filter is Pro Mazda Championship Spec Air Filter (Mazda PN: N3H1-13-Z40) in combination with “Speed Source Reset Airbox” (P/N RESET Air Box).

PFM.2 Fuel: Only the Series-designated fuel may be used.

PFM.3 Gears: Competitors have a choice of two sets of gears.

3.A Set “A” shall consist of: 12/29,15/30,15/25,19/27,20/25,19/21

3.B Set “B” shall consist of: 12/29,17/30,19/27,18/22,24/26,24/24

PFM.4 Weight:

4.A Minimum weight with driver – 1350 lbs.

PFM.5 Electrical and Instrumentation:

5.A. Battery shall be securely mounted in standard, left side pod position. Size and type are unrestricted provided it is a 12 Volt rated gel cell. Car may have connections fitted for auxiliary battery. Auxiliary battery is permitted for starting the motor only, and may not be permanently attached to the vehicle.

5.E. ECUs are serviceable only through the manufacturer Star Race Cars or Pro Mazda Championship.

PFM.6 Bodywork and wings:

Bodywork and Crash Structure

6.A. Numbers: Use of Series issued numbers and number panels on nose and rear wing endplates is required, in the Series specified locations. Must be black with white background.

PFM.7 Car Configurations, Updates:

The following car configurations are legal in the FCC series.

Current PFM spec car as described in Star Mazda Rules referenced herein, with these additions: original Steering (Ackerman) Arm P/N 010-503 may be used, original Track Rod P/N 110-506 may be used.

OR - Original PFM spec car as delivered in 2004. 2004 spec cars may have updated the following components only to be considered a 2004 car: traction control switch and fuel trim switch to 11 position P/N 095-538, rear clevis to upright P/N 020-531. 2004 spec cars must use the two piece upper nose bracket: Upper Nose Mount-Nose Side (P/N 030-565), Upper Nose Mount-Tub Side (P/N 030-566)

2006 rear attenuators are optional but highly recommended.

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FORMULA CAR

CHALLENGE

presented by: **GOODYEAR**

Components made for the Pro Mazda Championship - and sold by Carl Haas Auto - which are in all functional ways identical to Star parts and use the same part number with a Carl Haas Auto prefix may be used in the originally designed and intended location.

PFM.8 Cooling: As delivered. Optional additional volume World Speed Inc. pipe kit is permitted. Star Race Cars water radiator Fan Kit is permitted consisting of the following P/N:

8.A Electric Fan Sub harness P/N 080-568.

8.B Automatic Electric Cooling an P/N 100-539.

8.C Cooling Fan Brackets and Studs (if using radiator not delivered with mounts) P/Ns 100-540 and 100-541.

PFM.9 Suspension:

9.A. Only shock absorbers serviced and sealed by Star Racecars or Carl Haas for the Pro Mazda Championship are allowed.

PFM.10 Brakes:

10.A. Brake pads: Only Performance Friction PFC01 or PFC05 or PFC07 or PFC13.

PFM.11 Clutch:

11.A. Original spec clutch discs P/N 060-539 may be used.

PFM.12 Exhaust

All cars must be fitted with World Speed Inc. or Star Mazda club muffler system with a Supertrapp flange. The series will determine if plates will need to be used on a race by race basis. Competitors are encouraged to have 18 plates and an end cap available should noise abatement be deemed necessary. Supertrapp plates must be installed correctly, be unmodified, and not use any additional spacers. Single muffler 'Pro' pipe may be specified in supplemental event regulations for events without sound restrictions.

PFM.13 Tires: Goodyear 470 compound dry tires (D2769/D2770) – Competitors may use only one set (two fronts and two rears) of official tires per weekend (including doubles) during all qualify & race sessions. These tires must be declared by competitors and marked by the series. No other tires may be used during qualify & race sessions. It is the responsibility of the competitor to ensure their tires are marked appropriately. If after the start of any qualify or race session a single marked tire is damaged, defective, or otherwise unfit for use, once per weekend the competitor may be allowed to replace that tire with another tire upon verification and approval by the Race Director. If after the start of a qualify or race session for any reason (damage, defect, etc.) a competitor must change more than one, or a second, marked tire the competitor will lose two finishing positions for FCC scoring and season points purposes. This will not affect starting positions for races. Tires may not be changed for the purpose of gaining an advantage. Rain tires may be used at any time. Race Director may increase these penalties at his discretion. Tires may not be changed for the purpose of gaining an advantage. Rain tires may be used at any time.

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