

2022 - ½ Mile Late Model

SECTION – 6 LATE MODEL DIVISION

Open to two-wheel drive American automobiles provided they comply with, and adhere to, specifications as outlined for this division. ALL EQUIPMENT IS SUBJECT TO THE APPROVAL OF FRRRC OFFICIALS. NO EQUIPMENT WILL BE CONSIDERED AS HAVING BEEN APPROVED BY REASON OF HAVING PASSED THRU INSPECTION UNNOTICED. EFFORTS TO TAKE ADVANTAGE OF “LOOPHOLES” IN THESE RULES WILL NOT BE TOLERATED. ALL RACE CARS WILL BE SUBJECT TO INSPECTION BY TRACK OFFICIALS AT ANY TIME.

6.1 COMPETING MODELS AS APPROVED BY FRRRC

FRRRC ~~Limited~~ Late Model races are open to approved ~~1988 to 2013~~ 2004 to 2022 models of American made passenger cars.

6.1.1 Approved Competition Models

The Gen6 body will be allowed ~~is not~~ in FRRRC Late Model competition. All competing cars will be full-sized, stock American manufactured passenger car bodies. ABC approved bodies (2004-2022) ~~2004 to 2018~~ allowed. Original ABC bodies rules apply, unless otherwise specified herein. Refer to ABC rule book.

No attempt to get any aero advantage allowed, panning of nose or sides, windows, side skirts, tail panels, etc. Five Star bodies or flat 12inch side vent windows only, 3 window braces front and 2 rear window braces. Must be approved.

No cutting, lightening or excessive trimming around windows or drilling of holes in any body panel or windows to exhaust air. Any attempt to lighten bodies will result in a 25-pound weight penalty. All holes or vents must remain open for qualifying, except nose panel.

The FRRRC ABC referee will be the official method of body measurement. ~~The following Five Star and ARP models are also approved for the late model division: 1988 to 2003 chevy monte carlo, 1998 to 2008 dodge avenger, 2005 to 2008 dodge charger, 2010 to 2013 dodge challenger, 1998 to 2008 ford taurus, 2006 to 2013 ford focus, 2010 to 2013 ford mustang, 1988 to 2008 pontiac grand prix~~

All cars must maintain a wheelbase of 103.0 inches (+ or – 2 inches) at all times. The maximum overall tread width of all cars, as measured from the outside of the right body or tire to the outside left body or tire is 82 inches. The tread width for FRRRC spec, 604, 602 and IMCA b mod cars (maximum 66 inches) will be measured with the FRRRC Five Star referee, which is set up for 10-inch rims, resulting is a 2-inch difference. Big 8 (concept car) will be a maximum of 65”. Therefore 66 inches equals 64 inches using 8-inch rims. No shock tie down allowed during tread width inspections. ALL measurements will be done without the driver in the car. All measurements are done on 4-inch blocks front (where stub meets frame rail) and 4-inch blocks rear (rear axle center line)

6.1.2 Other Approved Models

Mid American and big 8 Series (concept) cars may compete in the ~~Limited~~ Late Model Division if the car is in compliance with all Mid American Series or Big 8 series rules.

Mid American Series or Big 8 cars may compete in the ~~Limited~~ Late Model Division if the car is in compliance with all Mid American or all Big 8 Series rules unless an exception is explicitly stated within these rules.

6.1.3 Identification and Marking

FRRRC reserves the right to assign car numbers, and to assign or restrict the display of graphics and advertising on race cars. Offensive graphics or slogans are not permitted. All Competitors agree to accept FRRRC’s decision in this matter. Officially

issued numbers must be at least 16 inches high by 3 inches wide and neatly applied (paint or decals) to both doors. Numbers, as large as possible and in contrasting colors to the body, must be applied to the front headlight cover, rear taillight cover, and upper right corner of windshield. Where requested, participating sponsor's emblems, or decals will be placed in the position designated by FRRC Officials. Failure to place participating sponsor's emblems on a race car may result in ineligibility for contingency prizes.

6.2 GENERAL CAR WEIGHT REQUIREMENTS

6.2.1 Overall Car Weight

The specific minimum weights for all cars are listed below. All weights are with the driver. No fuel burn off allowance for qualifying.

2625 lbs- 602 crate sealed by one of the following: IMCA, Extreme enterprises, Wegner automotive (UMA) with dyno sheet on file with FRRC tech 40 % right side weight and 6200 chip

2650 lbs – 602 crate sealed by GM or other seal approved by FRRC tech 40 % right side weight and 6200 chip

2675 lbs – IMCA B-Mod spec engine (40 % right side weight and 7000 chip) –~~see 7,000 claimer rule~~ must follow all IMCA B Mod rules and engine will be subject to inspection by FRRC tech

2675 lbs- 604 crate with FRRC seal done by Extreme Enterprises or Wegner Automotive with dyno sheet on file to FRRC tech official or be sealed with IMCA official seals. 40% minimum right-side weight, 6400 chip (GM P/N 88958604)

2700 lbs- 604 crate ~~FRRC~~ GM or other approved ~~IMCA~~-Sealed crate (minimum 40% right side weight, 6400 rpm chip) must have GM ~~FRRC, IMCA~~ or other seal approved by FRRC tech ~~inspection seals~~ to run. (GM P/N 88958604 ONLY) we are calling this the "traveler rule" which is allowed to run 3 times and then would have to get dyno and sealed by either Extreme enterprises or Wegner automotive

2850 lbs- 604 crate without all seals (opened) or (in question with tech) subject to inspection and removed from car and taken to FRRC approved dyno facility to dyno and verify if legal crate.

2750 lbs- FRRC spec engine dyno and sealed by Extreme enterprises or Wegner Automotive with dyno sheet on file with FRRC tech officials. 42% minimum right-side weight and 7000 chip

2775 lbs– FRRC Spec engine (42 % minimum right-side weight and 7000 chip) ~~no chip required~~

2825 – Big 8 chevy (concept car) dyno and sealed from Extreme enterprises or Wegner Automotive with dyno sheet on file with FRRC tech officials 42 % minimum right-side weight and ~~7000~~7400 chip

2850 lbs- Big 8 chevy (concept car) 42% minimum right-side weight and 7000 chip

2875 – Big 8 Ford (Concept car) dyno and sealed from Extreme enterprises or Wegner Automotive with dyno sheet on file with FRRC tech officials 42 % minimum right-side weight and ~~7400~~7000chip

2900 lbs- Big 8 Ford (concept car) 42% minimum right-side weight and ~~7400~~ 7000 chip

~~2900~~ 2850 – Big 8 LS 42% minimum right side weight w/ ~~7400~~ 7000 Rev Chip + Must have Wegner approved weights added to each side of engine block. Total add on weight 40 pounds.

(All Big 8 motors do NOT need to add big 8 penalty weight for brakes etc or follow Hub max price rule)

ALLOWANCE (NO RHS HEADS ALLOWED) 1 lb. per scheduled lap fuel burn off.

The following weight adjustments will be made to individual cars: Deduct Weight Full perimeter car (Refer to 6.4.1.1 Perimeter Frame) (Right side door bars cannot be "X" design). Add Weight Cars without leg & shoulder protectors; 50 lbs. 1/8" floor & tunnel; seat 16-1/2" to 18-1/2" from door bars Minimum Specification Car 75 lbs. Lightweight Bolts 25 lbs. Cars exceeding ~~66.0-inch~~ their allowed max tread width 100 lb. / inch over ~~66.0~~. Any kevlar body parts 25 lb. Template Body Car a Short Track Bodied Car that conforms to a FRRC template ($\pm \frac{1}{2}$ -inch) and Five Star Guideline Dimensions, and has the following: 3 front and 2 rear inside window stiffeners; dashboard; 1/8-inch steel floor and tunnel; padded door bars; padded aluminum seat; single lever shifter; and 10-inch-high fuel cell. Minimum Specification Car A car that is not a Template Body Car. Weights and or rpm chips on any engine may be adjusted by FRRC officials to maintain a competitive balance.

6.2.2 Added Weight

Any weight (ballast) added to the car must be secured by no less than two $\frac{1}{2}$ -inch diameter bolts. The maximum spacing between bolts is 10 inches. Loose weights are prohibited. No weights may be added outside the body. The front weight must be angled at 45 degrees. Added weights must be painted a bright color (safety orange or white) and have car number on weight.

6.2.3 Car Weights

After Race, All heat race winners and the top 5 finishers in the semi and feature races must weigh in immediately after the race. Any weight that falls off a car during competition cannot be returned to the car for determining weight after a race. A fine of \$1.00 per pound of weight lost will be assessed to car.

6.3 GENERAL CAR REQUIREMENTS

6.3.1 Car Bodies

The car body must meet the following requirements: Standard approved bodies may compete with an approved V-8 engine equipped with an approved carburetor. Bodies may be steel, aluminum, fiberglass, or plastic.

Wheel wells on steel and aluminum bodies must have a rolled edge. Cars must be neat appearing and standard in appearance. Body panels damaged during an event must be repaired or replaced in a reasonable period of time. Cars with unrepaired or unpainted body panels may not be allowed to compete. The decision of FRRC Officials about appearance is final. Templates will be used by FRRC Officials to check any cars with questionable dimensions or configurations. The tolerance for template cars is $\pm \frac{1}{2}$ inch. Cars with questionable dimensions or configurations may be required to add additional weight. FRRC Officials will

determine the amount and location of additional weight.

The decision of the FRRC Official regarding any additional weight is final, non-appealable, and non-litigable. All cars must have complete bodies, hoods, fenders, and an approved front and rear bumper. Push bars on front bumper are prohibited. Rear of car between bumper and deck lid must be enclosed. All body panels must be fastened in an approved manner. The use of hood, roof, or trunk, rails, wings, or ridges are prohibited. Rub rails mounted on the outside of the body are prohibited. Only pin type hood and trunk pins permitted. Full windshield and rear window of Lexan is mandatory.

A minimum of three stiffeners must be installed inside the front windshield. The stiffeners must be attached to the roof panel or roll bar and dash panel in an approved manner. Stiffeners must be installed so as not to obstruct the driver's vision. Rear window must be equipped with **minimum** two stiffeners attached, inside, in an approved manner. Stiffeners must be attached at the mid point of the window and adequate to prevent deflection. Side door windows are not allowed. A 10-inch vent window is permitted. Back side of vent window must be at right angle to top of door. Hinged or removable trunk lid mandatory. All cars must have a 1/8-inch steel floor and drive shaft tunnel. The tunnel must extend above drive shaft and have a 1-inch, 90-degree lip. The floor area to the right of the seat may be raised to the top of the drive shaft tunnel and extend at an angle to the top right side door bar and seal off below the right window opening. Interior area of car must be of steel or aluminum and be completely enclosed from front to rear firewalls. Underbody aerodynamic enhancing trays, shelves, wings, deflectors, or panels are prohibited.

6.3.2 Body Height and body ground clearance requirements

All body height and body ground clearance measurements are made without the driver in the car. No tolerance for measurements for cars without driver.

6.3.2.1 Body Height Requirements

Per rule 6.1.1, all body measurements must comply with current posted ABC body rules and measurements **taken with car on 4" blocks under frame.**

6.3.2.2 Body Ground Clearance Requirements

Front air dam clearance shall be no less than 4 inches. Rocker panel clearance shall be no less than 4 inches. Minimum height of quarter panels, behind rear tire, shall be 10 inches. 6.3.3 Rear Spoiler Rear spoiler on all cars must be 6.50 inches in height, 60 inches in width and must have a 70- or 90-degree angle. No rudders or forward mounting brackets are allowed. Maximum height from ground to top of spoiler is 41 inches.

6.3.3 Rear Spoiler

Rear spoiler on all FRRC cars (**Excludes** MidAM and Big8 concept car) must be 6.50 inches in height, 60 inches in width and must have 70- or 90-degree angle. No rudders or forward mounting brackets are allowed. Maximum height from ground to top of spoiler is 41 inches. **Big 8 (concept cars) must run a 5-inch spoiler, 60 inches in width, and must have 70- or 90-degree angle. No rudders or forward mounting brackets are allowed.**

6.4 FRAME AND ROLL CAGE

No carbon fiber parts of any kind allowed. Driver safety related items may be carbon fiber. (Examples: helmet, seats, haans) (Decorative type carbon fiber at the discretion of the FRRC Officials & Tech Crew.... Example Gauge cluster mounting backplate)

All frames and roll cages must be acceptable to FRRC Officials. The frame and roll cage must meet the requirements described in the following paragraphs. All chassis must have safety vehicle pickup points clearly marked, front and rear.

All chassis must be equipped with a fuel cell protector bar that extends to the bottom of the fuel cell and is adequately braced. All cars must have a front bumper of round steel tubing. All cars must have a rear bumper of round steel tubing no less than 1¾-inches in diameter that extends 6 inches, or more, beyond frame rails.

6.4.1 Frame

All main frames must be either stock passenger car frames or after market construction. All aftermarket main frame rails must be steel box tubing minimum 10 inches in circumference and must have a minimum wall thickness of 0.083 inches. Drilling or hole sawing of frame is prohibited. Plating of stock frame for strength or rust repair is permitted. Stock passenger car front stubs or fabricated front stubs permitted.

6.4.1.1 Perimeter Frame

Perimeter frames must meet the following requirements: side rails must be magnetic steel box tubing a minimum of two (2) inches in width by three (3) inches in height, maximum 3 inches by 4 inches and must have a minimum wall thickness of no less than 1/8 inch. All frame rails must be parallel. The minimum distance when measured from outside of the left frame rail to the outside of the right frame rail will be no less than 57 inches. Three horizontal right side door bars with 6 vertical uprights required, minimum size 1¾" x 0.083 tubing. Weight boxes permitted to be welded to the outside of the frame rail cannot exceed six (6) inches measured from the inside edge of the frame rail. The weight box cannot exceed the length of the straight frame side rail. Rocker panels must remain in standard location. The centerline of the frame side rails must be within one (1) inch of the centerline of the front and rear tread width.

6.4.2 Roll Cage

Roll cage installation and workmanship must be acceptable to FRRC Officials.

The roll cage must be a four-post design consisting, in general, a vertical main hoop, roof or top hoop; and left and right front post. It is recommended that all right angles must be gusseted. The main hoop must connect to the left and right frame rails, behind the driver, and be diagonally braced. The main hoop must have a horizontal bar at the midpoint. All bars in the main hoop must be round steel tubing no less than 1¾- inches in diameter and have a minimum wall thickness of 0.095 inches. The top hoop must attach to the main hoop, and left and right front posts. The left and right front posts must be connected by a horizontal "dash" bar. All bars in the top hoop, left and right front posts, and dash bar must be round steel tubing no less than 1¾-inches in diameter and have a minimum wall thickness of 0.095 inches. The driver's side must be equipped with four, or more, equally spaced horizontal bars. The door bars must be connected by two, or more, equally spaced vertical braces and must attach to the main frame by two, or more, equally spaced vertical braces. A foot protector bar is mandatory. All driver side door bars and braces must be round steel tubing no less than 1¾-inches in diameter and have a minimum wall thickness of 0.095 inches. All door bars on the driver's side must be plated. The top door bar must be no less than 29 inches from the ground.

The passenger side must be equipped with a minimum of ~~three~~ **two** door bars. ~~The~~ **Two** of the bars may be "X" or "Y" design. Horizontal bars must be equally spaced and connected by two, or more, equally spaced vertical braces. ~~All passenger side door bars and braces must be round steel tubing no less than 1 3/4 inches in diameter and have a minimum wall thickness of 0.083 inches.~~

~~Right side door bars must be made from round steel tubing with a minimum of, one top bar of 1-3/4" by .090" (.000 tolerance) with a minimum height of 15", maximum of 20 1/2" and one diagonal bar of 1-1/2" x .065".~~

On offset chassis cars, the outward passenger side bars must be steel and curve inward at the front and attach to the frame. The jack posts must be guarded, or inside the body. All roll bars exposed to the driver, and left side door bars, must be padded.

6.5 SUSPENSION.

The front suspension must be independent. McPherson Strut type suspensions and leaf spring front suspensions are prohibited. Steel tubular upper control arms, only, are permitted. Stock power steering or power rack allowed. Independent rear suspensions are prohibited. Solid upper, lower and panhard links only. Spring loaded upper & lower links, 5th spring, Watts linkages, or slider rear suspensions are prohibited. No sliding ball joints allowed. Damper shock permitted on leaf spring cars. Nonadjustable, steel or aluminum coil over shocks permitted. No external adjustments (compression, rebound) permitted on shock absorbers. Schrader valves are permitted. ~~Also see 6.10 for claim rule.~~ Remote reservoir shock absorbers are prohibited. Computerized, electric, hydraulic, pneumatic, or remote-controlled devices, which can change the handling characteristics of the car, during the race, are prohibited. Bump stop systems are prohibited. Shocks must have a solid shaft. Hollow shaft shocks are prohibited. No Bac-Kar type canister or similar suspension limiting device.

Spring coil binding is prohibited on all cars. Inspection of coil binding will be done at FRRC discretion. No limiting chains or straps allowed. **Shocks will be subject to FRRC tech official's inspection, and they will use their discretion on legal or illegal**

6.5.1 Spindles, Wheel Bearings, and Hubs Spindles

Wheel bearings, and hubs must be heavy duty. Wide 5 hub allowed. Steering arm may be modified, and ball joint holes may be enlarged or reduced to fit ball joints.

6.5.2 Brake Components

Front and Rear Each wheel must be equipped with a brake in proper working condition. Disc or drum brakes are permitted. Maximum of 4 pistons per caliper. Inboard brakes are prohibited. Disc brake calipers ~~may be claimed for \$190.00~~ **not to exceed \$250 msrp** per wheel. Disc brake rotors must be steel. Aluminum or composite rotors are prohibited. No floating style rotors. Brake balance bar, or brake proportioning valve is permitted.

6.6 ENGINE REQUIREMENTS

6.6.1 General Eligibility

Only V-8 engines with a maximum displacement of 362.0 for General Motors. The maximum compression ratio is 10.80 to 1 with flat top pistons and valve reliefs cut into pistons.

6.6.2 Engine Location

The referee will be used to determine front axle centerline.

All engines must be located so that the centerline of the forward most spark plug

hole is no more than 4 inches back from the center line of the front axles.

6.6.3 Engine Ground Clearance Requirements

Engine ground clearance measurements are made without the driver in the car **on 4" blocks**. No tolerance for measurements for cars without driver.

Engine skid plate recommended. The skid plate shall be fabricated from steel no less than 1/8 inch thick or aluminum no less than 1/4 inch thick. The skid plate shall extend from the back of the front cross member to the front of the bell housing. The skid plate shall be wider than the oil pan at its widest part. The skid plate shall attach to the front cross member and front frame rails, in an approved manner, by a minimum of four bolts.

6.6.4 Factory sealed, engines are approved

GM 604 crate part number 88958604 or 19318604. The 604 crates MUST be used as produced from GM. This engine will be allowed on Holley 4bbl 650cfm carburetor p/n 80541 with no modifications and on .065 single paper gasket. No adaptor plate or spacer plate allowed. Crate engines may not be altered from factory specs. Must use a 6400-rpm chip. Maximum compression may never be greater than 9.6:1. Any evidence of tampering with engine components will result in disqualification and suspension for 1 year from the date of violation. FRRRC tech staff reserves the right to impound motors for inspection and dyno testing. Motor must be IMCA tagged or FRRRC tagged by Extreme Enterprises in Cecil (715-745-4094) **or Wegner Automotive in Markesan (920-394-3557)**. Weight adjustments may be made by FRRRC officials to maintain a competitive balance. Grandfather any 604-crate engine that competed at least 75% of the events in 2018 that is already sealed by a different vendor **but must follow weight requirements.**

6.6.5.1 Engine Block **for FRRRC Spec**

Block must be a factory production cast iron block with external measurements identical to standard production engine. Block may be aligned honed, bored, and honed, and decked for zero deck.

6.6.5.2 Crankshaft and Harmonic Balancer **for FRRRC Spec** Only an OEM GM crank or a steel Callies Dragon slayer and compstar, howards track smart 3 #353485712t crankshaft is permitted. Minimum journal diameter is 2.100 inches. Maximum stroke is 3.480 inches. Minimum crankshaft weight is 47.0 lbs., after balancing. Only solid steel type harmonic balancers are permitted.

6.6.5.3 Pistons and Rods **for FRRRC Spec**

Any, coated, flat top piston may be used. Valve reliefs may be cut into pistons. Minimum weight of piston plus pin is 450 grams. Only the following magnetic steel connecting rods are permitted: Manufacturer Rod Length Part # Manley Sportsmaster 6.000 inches 14103-8 Manley Sportsmaster 5.700 inches 14101-8 Crower Sportsman 6.000 inches SP 93206 Crower Sportsman 5.700 inches SP 93205 and comp products#rpm600p, Minimum rod weight is 560 grams.

6.6.5.4 Oil Pump **for FRRRC Spec**

Pan Wet sump oil pumps only. Dry sump oil pumps are prohibited. Steel oil pan only. Any after market oil pan, without an oil recovery pouch or power kickout on passenger side, may be used. All oil pans must be equipped with a 3/4 inch plug for inspection. The plug must be directly in-line with a rod journal. Engines equipped with a windage tray must provide a hole in the tray, in line with the plug. All inspection and drain plugs must be

safety wired.

6.6.5.5 Cylinder Heads for FRR Spec

FRR Spec Engine must run only General Motors Cast Iron Vortec cylinder heads (Casting P/N 10239906 or 12558062). General Motors Vortec cylinder head P/N 25534351 & 25534371 are prohibited. Titanium valves are prohibited. Cylinder heads must remain stock. All cylinder head markings must remain. Angle milling, chemical treating, acid dipping, acid flowing, abrasive blasting, bowl cutting, addition of material to the ports or combustion chamber, or other alterations to the original, as cast, head is prohibited. Valves, rocker studs, head bolts, and spark plugs may not be relocated. No polishing or grinding of ports or runners is permitted. No material may be added to the combustion chamber. The cylinder head to block surface may only be machined a maximum of 0.050 inches from OEM. A three-angle valve job may be done as long as no machining marks are more than 1/8" above the head of the valve. The maximum valve sizes, as measured across the face, are as follows: Intake Exhaust 1.940 inches 1.500 inches the maximum allowable spring diameter is 1.26 inches.

6.6.5.6 Camshaft, Valve Lifters, & Rocker Arms for FRR Spec

Hydraulic roller camshaft may be used. Chain and sprocket camshaft drive system only. Any all steel, hydraulic roller lifter is permitted. Camshaft journals must be stock for engine. Rollerized camshaft bearings are prohibited. The maximum camshaft lift is 0.550 inches, measured at the valve or lobe lift. Lobe center is 110 degrees. Overlap is 74 degrees. The maximum camshaft intake and exhaust duration is 246 degrees at 0.050 inches lift. Rev kits are permitted. Only steel push rods are allowed. Roller rocker arms are permitted. Maximum rocker arm ratio is 1.5 to 1. Shaft type rocker arms are prohibited. Stud girdles are permitted.

6.6.5.7 Intake Manifold for FRR Spec

Intake manifold must be "7116" Performer RPM Intake for Vortec heads. Grinding or polishing of the ports is prohibited. Chemical treating, acid dipping, acid flowing, abrasive blasting, addition of material, or other modifications to the original, as cast, intake manifold is prohibited. An adapter plate, with a straight bore and a maximum thickness of 1½-inches, may be used between the intake manifold and carburetor. No chamfering, grinding, or drilling of the adapter plate is permitted. Only 2 gaskets (1 per side), with a maximum thickness of 0.065 inches, may be used on the adapter plate.

6.6.7 Carburetor

Late Model Spec and BIG 8 Legal Cars engines must run a Holley Model 4412 two-barrel carburetor. Sealed Crate Engines must run a 650 cfm. 4bbl Holley 4150HP carburetor (model # 80541-1).

FRRC reserves the right to inspect ~~exchange~~ any carburetor, on any Sealed Crate engine, at any time. The carburetor must meet the following: A. Carburetor Body – No polishing, grinding, or drilling permitted. B. Choke – The choke may be removed. C. Choke Horn – The choke horn may not be removed. D. Boosters – The boosters may not be changed. The size or shape must not be altered. Boosters may not be tapered. Height must remain standard. E. Venturi – Venturi area must not be altered. Casting ring must remain. F. Butterflies – Butterflies must not be thinned or tapered. G. Throttle Shafts – Throttle shafts must not be thinned. H. Metering Block – Metering block may not be changed or modified. Any attempt to pull outside air other than down thru the venturis' is prohibited.

6.6.8 Air Cleaner and Air Intake

6.6.8.1 Air Cleaner

All cars must be equipped with an air cleaner during competition. The air cleaner must be no more than 14 inches in diameter and may not protrude thru the hood.

6.6.8.2 Air Intake

Forward intakes are not allowed. Air boxes are permitted. The back of the air box must be flat, with a vertical face at 90 degrees to the floor of the air box. Cars may also run the ABC fiberglass air deflector at the back of the air box. No devices for directing the flow of air into the air cleaner is permitted. The maximum opening in the hood, or Windshield Cowl Panel, for air intake, is 2½" x 20".

6.6.9 Ignition System and Battery

Only one MSD compatible ignition box, mounted out of the reach of the driver, permitted. Sealed Crate engines must run an ignition capable of using a 6400-rpm chip ~~an MSD 6-AL ignition box~~ mounted out of reach of the driver. Magnetos and crankshaft-triggered ignitions are prohibited. 12-volt battery and electrical systems only. A, labeled, centrally located, master on/off switch, to cut off all electrical power to the car, is required. The battery must be located between the frame rails and be securely installed. The battery may not be located in the driver compartment. The battery may not be located forward of the radiator, or behind the rear end of the car. Big 8 (concept car) and LS require 6 ALN with ~~7400~~ required chip.

6.6.10 Exhaust System

All cars must have a complete exhaust system that must be equipped with a muffler. All exhaust must exit the car behind the driver but not past the rear axle of the car. All exhaust exit pipes must be pointed down toward the ground. Max of 5.0 inches o.d. after the collector. Under car exhaust systems are allowed. Exhaust systems are allowed to exit the side of the car. Side exhaust systems must be equipped with a braced plate located on the inside of the body panels. Exhaust exit pipes are to be welded in the center of the plate with the ends flush to the plate. A maximum of 2 holes are allowed in the side of the body panel. All decibel readings will be taken from a location in a consistent location throughout the year. All exhaust must meet the maximum decibel limit of 95 db. No tri-Y headers allowed. Maximum ~~\$350~~ \$400 header cost.

6.6.11 Cooling System

Electric fans are permitted. Use of antifreeze is prohibited. All cars must be equipped with an overflow or catch tank. Factory catch tanks are permitted. Tin cans are prohibited. Radiator must mount in front of engine. Radiator shrouds must retain the same shape as OEM shrouds. Shrouds must be metal or OEM and extend to fan blades.

6.7 DRIVE TRAIN

6.7.1 Clutch, Bell Housing, Transmission, and Drive Shaft

Any two, three, or four, speed, American made, manual transmission is permitted. Transmissions with internal clutch are prohibited. Bottom load transmissions are prohibited. Automatic transmissions are prohibited. Drop Cluster transmissions are prohibited All transmissions must work in reverse. All cars must be equipped with a scatter-proof bell housing. Cars equipped with an enclosed clutch are not required to have a scatter-proof bell housing. A 3-inch diameter hole is required in the bottom of the bell housing for inspection purposes. The clutch on Spec engines must be no less

than 5.5 inches in diameter and be mounted to the crankshaft. Carbon fiber clutches are prohibited. The clutch on Sealed Crate engines must be no less than 5.5 inches in diameter and be mounted to the crankshaft. Carbon fiber clutches are prohibited. Retail cost of clutch must not exceed \$1,000. All cars must be equipped with a loop that surrounds the drive shaft. The loop must be a minimum of 1/8" x 2" steel and fastened to the frame or cross member and be approx. 6" to 8" behind front universal joint. Drive shaft must be minimum 2½ inches, o.d. All driveshafts must be made of aluminum or steel. All other materials including carbon fiber are prohibited.

602 crate, IMCA B-mod and 604 crate engine packages are allowed to compete with the 2 speed Brinn, Falcon, Bert transmissions. High dollar axles will not be allowed. (wrap up, twist etc.) Minimum diameter of 1.170 at smallest point.

6.7.2 Rear End

Only quick-change rear ends with a minimum ring gear O.D. of 10" are permitted. Only fully locked rear ends and open rear ends are permitted. Axle tubes must be steel. Aluminum axle tubes are prohibited. Cambered axle tubes are allowed. (Tolerance ± 1 degree) Aluminum drive plates are permitted. Axles must be steel. Titanium axles are prohibited.

602 crate, B-mod and 604 crate engine packages are allowed a O.D. of 10' non-quick-change rear end. They may also use a Ford 9" rear end. ~~Ratchets and differentials allowed in 2020 but must add 50 lbs (this includes big 8 cars)~~ Drive plates on spool rear ends must be marked accordingly and marks must line up, so tech knows you have a spool. Spools only, this rule applies to the Big 8 cars also.

6.7.3 Wheels and Tires

6.7.3.1 Wheels

The wheels must be steel and meet the following requirements:

- A. After market steel racing wheels only.
- B. All wheels must be 15 inches in diameter and no more than 8.0 inches wide.
- C. Wheels, less tire, weights, and valve, must weigh a minimum of 15.0 pounds.
- D. Wheel studs must be a minimum of 9/16 inch diameter. Eight bolt rear ends may use stock studs if all 8 are used. Only four 9/16-wheel studs are required in eight bolt rear-ends.
- E. Wheels must be attached with 1-inch, steel, lug nuts. Lug nuts may not be altered.
- F. 5x5 spacer plates must be same diameter as hub face, and a full ring, not individual spacers. Wide five must have full ring, not individual spacers.
- G. Wheel covers are prohibited.

6.7.3.2 Tires

For the 2018/2019/2020 FRRC Race Seasons, Racetech Chassis is the preferred Hoosier Racing Tire Vendor of WIR and will be at WIR weekly selling and mounting new Hoosier Racing Tires. The FRRC recommends you utilize their services.

- A. FRRC approved tire for ~~2018 to 2020~~ 2021-2023 - Hoosier D800 8.0-27.0-15
- B. A FRRC approved tire is unaltered in any way from the manufacturer. The tire must be used on the correct location, have the correct FRRC markings, and if not new, be from your used or impound inventory. Tires not meeting these specifications must be pre-certified by FRRC Tech.
- C. The four (4) tires used during a car's qualifying must be used on that same car for all events within that program.
- D. Four (4) new tires are permitted for the first FRRC racing program of the current year. All

other FRRC racing programs will allow a maximum of one (1) new tire and three (3) previously impounded tires. All cars must impound 3 warm tires weekly. If racing events are canceled after racing begins a vote of the drivers present at the canceled program will vote on how many new tires will be allowed at the next program. A car that begins a FRRC program using more than the allowed number of new tires will forfeit any qualifying points and money earned, will start the first heat, semi-feature (if scheduled) and feature (by way of transfer) in the rear.

E. Prior to post qualifying weigh in, every car must submit its dated program tire sheet to FRRC tech. This sheet will identify, via bar code numbers, the six (6) tires available to that car. The six (6) bar code numbers will include the new, impound and spare tires.

F. A spare tire is one that has within the current racing season, been previously used by that car for one entire FRRC racing program or been impounded after a FRRC racing program by that car. Exceptions subject to FRRC tech.

G. Failure to submit dated program tire sheet within the specified timeline will result in that car forfeiting any qualifying points, and money earned. That car will start the first heat, semi-feature (if scheduled) and feature (by way of transfer) in the rear.

H. Every competing car must present three (3) tires to the impound area within 15 minutes of the car's final event of the program. Those tires must be warm. No warming devices allowed. Tires for import must have correct FRRC markings. Noncompliance will be subject to discipline by FRRC Officers. A tire sheet for the following week must be turned in with the 3 warm tires.

I. If a FRRC program is canceled after qualifying and before heat races begin, all four (4) qualifying tires will be impounded. These four (4) tires will be released at the next FRRC program, changing that program into a no new tire program. For those cars present at the cancelled program.

J. The impounded tires will be released at the beginning of the next FRRC racing program. The impounded tires are to be used only on that car that impounded them. The four (4) tires used during a car's qualifying must be used on that same car for all events within that program. Spare tire usage being the only exceptions.

K. A car requiring a replacement tire any time after qualifying will be dealt with as such: New tire by another new tire, start in rear of all remaining events in that program. New tire by designated spare, keep earned starting position in remaining events in that program. Replacing an impounded tire with a new tire is NOT AN OPTION. Replacing an impound tire with a designated spare, keep earned starting position in remaining events in that program.

L. FRRC Officers/Tech have the right to confiscate at any time, tires/wheels that are to be evaluated to confirm their legality.

M. Tire rule violations will be classified as major infractions and punished as such unless specified else wise. Major infractions result in a loss of all points and all money earned during the program.

6.7.3.4 Tire rule for cars not running the prior week, travelers, or "Emergency Situations"

All cars racing will only be allowed 1 new tire per event. 3 used tires will always be on car and must meet the maximum tread depth listed each week which will be taken by a tire rep, tech, or official. This will be a sliding scale updated each night after the feature. The highest 3 in points finishing the feature will have their tires measured by tire rep, tech, or official and averaged out. This will allow a car to race and bring 3 used tires as long as they meet the tread depth measurements listed for that week. The "used" tires will have to be verified by tire marshal, tech, and officer (at least 2) to make sure they meet this rule and also are not "soaked" or tampered with. Findings of this will result in DNF and loss of points

and money for the night. To find out the weekly measurement for a traveler they can call FRRRC tire dealer Racetech (920-277-6000) or “division rep” Braison Bennett (920-858-4466)

6.8 FUEL SYSTEM

Electric fuel pumps are prohibited. Fuel filler must be mounted on the inside of the quarter panel. Fuel line may not be exposed in driver's compartment.

6.8.1 Fuel

Cell All cars must be equipped with, either a 1/8-inch-thick fuel cell tub, or 18 or 20-gauge fuel cell container protected by 1/8-inch-thick steel plates. The installation must be FRRRC approved. Fuel cell must be located behind the rear end, between the frame rails. The fuel cell must meet FIA – FT3 specifications. Rubber type fuel cell bladders mandatory. Fuel cell must be filled with foam manufactured for use in fuel cells. Minimum height to the bottom of the fuel cell container is 10 inches and will be measured on 4-inch blocks (front) and 4-inch blocks (rear). All fuel cells must be equipped with check balls or flaps.

6.8.2 1/8 Inch Fuel Cell Tub

The fuel cell tub must be 1/8-inch-thick steel (10 gauge) and must have a 1-inch lip. The front, bottom, and rear must be one piece. The top may be either 18 or 20 gauge steel, and have, two, 1 inch by 1/8-inch steel straps, in each direction.

6.8.3 Fuel Cell Container with 1/8 Inch Protector Plates

The fuel cell container may be either 18- or 20-gauge steel and must have a 1-inch lip. The container must have, two, 1 inch by 1/8-inch steel straps, around the top, sides, and bottom, in both directions. The top may be either 18- or 20-gauge, steel. The 1/8-inch, steel, fuel cell protector plates must be mounted on the outside of the frame. The plates must cover both sides and rear of the fuel cell. The only holes allowed in the plates are for attachment or a 2-inch hole for safety vehicle pickup points. Any over the axle style rear tail style chassis must use approved 1/8-inch magnetic steel fuel cell can. Any chassis with incorrect fuel cell can, will be asked to change or be disqualified. The cell must be bolted in with a minimum of 14- $\frac{1}{4}$ inch with flat washers on top and lock washers on bottom. The top for this cell will be 18-gauge steel with straps in both directions. A sonic tester will be used to check fuel cell can thickness.

6.8.4 Fuel

The fuel must be automotive gasoline only. The gasoline must not be blended with alcohols (such as methanol or ethanol), ethers, aniline, or its derivatives, or oxygenated additives (such as nitro methane or nitro propane). The use of nitrous oxide is prohibited. FRRRC has the right to sample a competitor's fuel at any time, during an event. Samples will be tested by FRRRC and/or any outside laboratory at FRRRC discretion.

6.9 MISCELLANEOUS EQUIPMENT

6.9.1 Steering Components

All cars must have either a collapsible, two-piece steering column, or a minimum of two swivel joints. The steering column must have an impact collar, no less than 1 $\frac{1}{2}$ inches in diameter, welded to, or bolted to the column forward of the column support inside the driver's compartment. A metal (no

plastic) quick release coupling, acceptable to FRRC, on the steering wheel is mandatory. The center of the steering wheel must be padded with resilient material.

6.9.2 Seat

Seat must be made of aluminum and installed in a manner acceptable to FRRC Officials. Highly recommended that the center of the seat be a minimum of 17½ inches from the inside of driver's door bar. No less than 4, ½ diameter inch, bolts must be used to attach seat to frame and cage. A flat steel washer no less than 1½ inches in diameter must be installed between the head of the bolt and seat. Seat must be equipped with a fully padded cover. Headrest on seat is mandatory.

6.9.3 Seat Belts and Shoulder Harness

A quick release lap belt and double shoulder belt no less than 3 inches wide is mandatory. A submarine belt is also mandatory. Seat belt and shoulder harness must be date stamped and not more than three years old for SFI rated belts and not more than 5 years old for FIA rated belts. Seat belt and shoulder harness must be installed according to manufacturer's recommendations. The belts and harness must be attached to the roll bar cage with high quality hardware, no less than 3/8 inch in diameter.

6.9.4 Helmet

A helmet that meets minimum SA2015 Snell Foundation specifications is mandatory. Head and neck restraint system mandatory. ~~(SA2010 approved for 2018 SEASON ONLY if you have 2018 proof of purchase)~~

6.9.5 Drivers Suit

It is mandatory that a driver wear a fire-retardant suit (free of rips and tears) and gloves while on the racetrack. It is recommended that a driver wear fire retardant sock and shoes. Drivers will not be allowed on the track unless wearing a fire-retardant suit and gloves. If a driver removes his/her gloves during an event, the driver will be black-flagged.

6.9.6 Fire Control System

It is mandatory that each car be equipped with an on-board fire control system. The on-board system should be at least 5- pound capacity and Halon 1301 or equivalent.

6.9.7 Window Net

It is mandatory that each car be equipped with either a 1-inch web or knitted mesh window net on the driver's side. The minimum allowable length is 12 inches. The window net must attach to the roll cage at the bottom and release with a seat belt snap or FRRC approved release on the top front corner of the window net. Window net must be in place while competing. Net must be mounted according to manufacturer's recommendations.

6.9.8 Two Way Radios

Two Way radios are mandatory. It is required that all teams submit their frequency to FRRC officials. A spotter, with a two-way radio, must be located in the area designated for spotters.

6.10 CLAIMS

~~Claim on disc brake calipers is \$190.00 per wheel pads (plus 20% fee which goes to FRRRC limited late model point fund). Claim does not include brake hose, caliper hose fitting, or brake. Claim on all shock absorbers is \$200.00 per shock (plus 20% fee which goes to FRRRC limited late model point fund). Claim does not include shock hardware, coil-over kit (if so equipped) or any springs.~~

6.11 Transponders

Transponders are required on every car and are to be working and turned on whenever the car is on the racing surface. Only 1 transponder allowed per car. Transponder to be located 9 inches forward of the front side of the rear end axle tube to the center of the transponder.

6.12 Receivers

A receiver or scanner capable of receiving track personal instruction is required by all team spotters. Information relayed from track personal must be relayed to the driver via spotter. Failure to comply with instructions may result in disqualification or black flag from the event.