

## LUCAS OIL OFF ROAD RACING SERIES PRO BUGGY RULES

### ADDENDUM TO THE GENERAL RULES

#### PREFACE

"The rules and/or regulations set forth herein are designed to provide for the orderly conduct of racing events and to establish minimum acceptable requirements for such events. These rules shall govern the condition of all Lucas Oil Off Road Racing Series ("LOORRS") events, and, by participation in these events, all LOORRS members are deemed to have acknowledged, accepted, and complied with these rules. No express or implied warranty of safety shall result from publications of, or compliance with these rules and/or regulations. The rules are intended as a guide for the conduct of the sport, and are in no way a guarantee against injury or death to participants, spectators, or others."

**LOORRS rules are the sole property of Lucas Oil Off Road Racing Series. Use of these rules by any other organization or individual is forbidden unless prior written consent is given by the LOORRS.**

**LOORRS, its parent, affiliates, members, officers, directors, or staff, assumes no responsibility, legal or otherwise, for failure or malfunction of any products of manufacturers listed in this rulebook. LOORRS is NOT liable for actions or decisions made by individuals, promoters, or organizations, etc. using LOORRS rules.**

Specifications and/or suggested standards contained in this rule book are intended for use as a guide with respect to safety and for no other purpose either expressed or implied. The use of the specifications and/or suggested standards contained herein by any association, organization, manufacturer or individual is entirely voluntary and **LOORRS** will NOT accept any responsibility for consequences resulting from the application of said specifications and/or suggested standards.

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*-A 4 wheel rear wheel drive vehicle utilizing many different engine combinations with unlimited suspension chassis designs. Engines are limited to cc limits from 1650 to 2000 depending on design and manufacturer with the exception of the GM Ecotec 2.4 Liter V.V.T.LE5 engine.*

#### **PB-1 MARKING AND IDENTIFICATION**

- A. All vehicle numbering is subject to approval and is assigned by LOORRS.
- B. LOORRS officials may require a competitor to use a different number to avoid confusion or duplication at an event.
- C. In the event that a vehicle number is not visible from the timing and scoring area, the competitor will not be scored. It is the competitor's responsibility to make sure that the number is visible during all race conditions.
- D. Advertising on race vehicles must be in good taste.
- E. Foil or reflective numbers are not permitted.
- F. All LOORRS vehicles are required to have LOORRS stickers on each side of the front of the door area, 4 inches down from the window opening.
- G. LOORRS may require the use of specific sponsor decals.
- H. Team vehicles with the same paint and colors must have distinguishing markings of some kind.
- I. All numbers must be block style only with a minimum space of 1 inch between them.
- J. Numbers must be applied side by side. No slanted numbers.

#### **PB-2 NUMBERS**

- A. Pro Buggy numbers are 1-99.
- B. All numbers must be block style only.
- C. Numbers must be side by side. No outlines, stacking or shadows allowed. Italic slant of 25 degrees or less is allowed.
- D. Fonts must be chosen from one the below approved styles only:
  - 1. Impact
  - 2. Helvetica Black

3. Mechanical Bold
- E. Numbers must be located in the following positions:
  1. One number on each side, high and close to the back of roof. Numbers must be solid black with a minimum height of 10 inches on a 12 inch by 14-inch white number plate.
  2. The back of the vehicle facing the rear. Numbers must be solid black with a minimum height of 8 inches on a 10 inch by 12-inch white number plate.
  3. Windshield number and division must be on the upper driver's side corner of the windshield area and must be solid black on a white surface with a minimum height of 4 inches.

### **PB-3 ROLL BARS**

- A. All tubing, welds, gussets, and roll cage construction must be approved by LOORRS.
- B. Round steel seamless or D.O.M. tubing is compulsory for the basic roll cage construction and must be LOORRS approved. Aluminum and/or other composite soft metals are not allowed.
- C. Minimum tubing diameter and thickness for all buggies is 1 ½ inch by .095.
- D. Roll bar construction must be welded.
- E. Gussets are required on all intersections in driving compartments within 3 inches of intersection.
- F. All plate gussets must be of the same material and thickness as the roll cage, measuring 3 inches by 3 inches.
- G. Tube gussets and wrap gussets must be a minimum of .065 x 3 inches.
- H. All race vehicles must have 3 door bars per side.
- I. All roll bars that may come in contact with driver must be covered with high density flame proof roll bar padding certified to SFI Spec 45.1 or better.
- J. There must be a minimum of 2 inches of clearance between the driver's helmet and the cage.
- K. All race vehicles must utilize LOORRS mandated roof support tube that open with top sheet metal subject to approval by LOORRS. **Must be constructed of 1.0x.120 wall steel tubing. Vehicles with radiused roofs may use 1.0x1.5 x.120 wall aluminum tubing that is welded or riveted to the roof. Rectangle tubing must be cut and radiused so that top leg of tubing meets or exceeds roll cage tubing center line.** See FIG 3

### **PB-4 EXOTIC MATERIALS**

- A. No titanium or any other exotic materials or fasteners may be used anywhere in the vehicle with the exception of the following: -Pro Buggies may use titanium for select engine components.

### **PB-5 MEASUREMENTS**

- A. Car must race at a minimum 10 inch ride height. This will be measured at the lowest point from front of skid plate area to rear firewall bulkhead. This includes belly pan bolt heads and any other items that may be under the chassis or belly pan.
- B. Maximum track width is 93 inches. Track width measurement will be taken at the widest outer surface of the tire.
- C. The front bumper must be a minimum of 36 inches with rounded ends.

### **PB-6 BODY**

- A. Complete bodies must be attached at the start of competition, practice or any other on track activities. Bodies must be attached in such a fashion as to not create a pointed or sharp extrusion when panels are removed. A loop body mounting construction is mandatory.
- B. Driver's compartment floors must be a minimum of 1/8 inch for all classes. Floor must extend from 4 inches in front of pedals to 4 inches in rear of seat.

### **PB-7 ROOF**

- A. All vehicles must have a roof that is properly attached to the roll cage.
- B. Roof mounting must not interfere with roll bar padding.
- C. Aluminum sheeting with a minimum thickness of 1/8 inch must completely cover the top of the roll cage.
- D. Sheeting must extend 1/2 inch past the center line of tubes on sides.
- E. Sheeting must be attached with a steel hinge in front.
- F. Hinge must be full width of front of cage and must be made of steel with a minimum thickness of .090. See diagram FIG 2
- G. Hinge must have a steel pin with a minimum diameter of .250.

- H. Hinge must be attached to cage with a minimum of six 1/4 bolts evenly spaced across the hinge.
- I. Hinge must be attached to sheeting with a minimum of six 1/4 inch bolts.
- J. Mounting tabs must be a minimum of .095 thick.
- K. Positive latching system must be LOORRS approved.

#### **PB-8 BUMPERS**

- A. Vehicles must have front and rear bumpers.
- B. Rookie driver rear bumper must be painted or taped yellow.
- C. Use of angle iron on rear bumpers is allowed.

#### **PB-9 STEERING COMPONENTS**

- A. LOORRS officials must approve universal joints in steering shaft.
- B. Hydraulic power steering is permitted.
- C. Quick release metal coupling is mandatory and must be approved by LOORRS officials.
- D. All race vehicles are required to have a steering wheel pad.

#### **PB-10 SHOCKS**

- A. All vehicles must have at least one working shock on each wheel.
- B. Shocks cannot be adjusted while vehicle is in motion.
- C. Heating or cooling liquids or chemicals in shocks is not permitted.
- D. Shocks may have external bypass tubes and reservoir cans.
- E. Remote mounted shocks are not allowed unless approved by LOORRS officials.
- F. Shocks cannot be linked together in any way. This includes but is not limited to hydraulic, electric, manual, or mechanical links.

#### **PB-11 BRAKES & BRAKE COOLING**

- A. Brakes must be operational on all four wheels at all times. All brake operation must be LOORRS approved.
- B. Only disc brakes with steel (magnetic) rotors using standard metal mounting hats are permitted.
- C. Electronic wheel speed sensors or brake actuators will not be permitted.

#### **PB-12 WEIGHT**

- A. Minimum weight with driver is 1900 pounds.
- B. Air cooled weight with driver is 1580 pounds.
- C. Driver will be included in race vehicle's minimum weight.
- D. LOORRS officials may request vehicle be cleaned before weighing.
- E. Vehicles can be courtesy weighed prior to competition.
- F. LOORRS officials must approve all weight material.
- G. Added weight must be in block form.
- H. Blocks must weigh no less than 5 pounds each and cannot be made of liquid of any type, pellets, or other granulated weight.
- I. Added weight must be securely bolted in place on the race vehicle.
- J. Dislodged weight cannot be returned to the vehicle for weighing at the end of the race.
- K. All block ballast must be painted white and identified with vehicle number.
- L. Weight can be sealed at the discretion of LOORRS officials.
- M. No weight shifting devices of any kind are allowed. This includes, but is not limited to hydraulic or electronic devices.
- N. All vehicles will weigh in before and/or after competition at the discretion of LOORRS officials. Failure to do so will result in disqualification.
- O. All weight loss on track will result in a \$5.00 per pound fee.

#### **PB-13 ENGINE BLOCKS**

- A. Engines are subject to inspection by LOORRS officials at any time.
- B. LOORRS's method of measuring the weight to displacement ratio is the only valid method of cubic P&G testing.

- C. At LOORRS officials' discretion engines will be prepared for mechanical cubic inch certification and measurement.

## **PB-14 ENGINES**

### **Non Ecotec:**

- A. Any automotive engine with production of 5000 or more and available to the public in the United States.
- B. Maximum of 4 valves per cylinder.
- C. Air cooled, 2000 cc maximum
- D. 2 valves per cylinder, 1715 cc maximum, water cooled.
- E. 3 or more valves per cylinder, 1650 cc maximum, water cooled.
- F. Rotary engines are not allowed.
- G. No fuel injection.
- H. No variable timing or cam lift.

### **Ecotec:**

- A. GM Ecotec 2.4 Liter V.V.T.LE5 engine
  - 1. All engines must have LOORRS serial numbered seals applied only by LOORRS authorized engine builders or agents on the following parts:
    - a. Top cam cover
    - b. Intake manifold
    - c. Front engine cover
  - 2. Engine must retain all stock components, configurations and specifications unless permitted by LOORRS officials.
  - 3. All internal components must be in place and be operational at all times (i.e. stock balancer shafts and drive).
- B. Engine Oiling System
  - 1. The use of an Acu-sump style remote oil reservoir system is allowed.
  - 2. Oil pan is open.
- C. Ignition/Fuel Injection System
  - 1. Only a stock GM #17202005 manual cable driven throttle body is permitted. An adaptor plate no thicker than 3/8 inch is allowed for mounting. Plate must be same as existing bore size.
  - 2. Any brand ECU may be used as long as it functions only with the stock GM trigger and pickup

## **PB-15 ELECTRICAL ACCESSORIES**

- A. At the request of television, certain vehicles may compete with telemetry systems, as so installed by the series production television network requesting such information.
- B. Vehicle digital dashes, data recording devices and/or any other form of measurement, sensors or recording of any kind or nature is permitted only for the following:
  - 1. Engine Related items - engine RPM, water temperature, Engine oil temperature, Engine oil pressure, fuel pressure, voltage, lambda O2 (Oxygen Sensors), Exhaust gas Temperature, intake manifold vacuum/pressure (the same sensor may be used in intake or crank case), Water Pressure, power steering pump pressure, power steering oil temperature
  - 2. Transmission Related items – transmission oil temp, transmission main pump PSI. Sensors may not be directly connected to the transmission and must use a minimum of 12-inch soft line type hose to eliminate any direct connection to the transmission of any wiring. Electronic gear indicators for manual transmissions may be used only with a complete stand-alone wire loom and may not be connected to the data collection or engine management system in any way. The electronic gear indicator provides the driver with a numeric indicator of what gear the transmission is in at any given time. Any systems intended to be used for this purpose must be approved by LOORRS prior to use and must be able to function 100% when removed from the vehicle by providing nothing more than a 12-volt power and ground to the unit. Electronic gear indicator may use a sensor connected to the transmission gear shifter or to the linkage directly on the transmission.
- C. No other sensors, measurement, GPS, track mapping, lap timing device or recording device of any kind is permitted at any time during the entire LOORRS event weekend.
- D. Any configuration of data measurement or recording must be completely open and available for LOORRS inspection at any time during a LOORRS event weekend.
- E. The following digital dash units are permitted:

1. Motec – any model
  2. RacePack – any model
  3. AIM – any model
  4. LIFE-any model
  5. All other Digital dashes subject to LOORS approval.
- F. No traction control devices allowed. This includes but is not limited to speed sensors, linear transducers, axle or drive shaft RPM, steering position, etc.
- G. No wireless devices in or on the vehicle are permitted.
- H. No data transfer is allowed to or from vehicle when in motion.

#### **PB-16 ENGINE & RACE VEHICLE ELECTRICAL SYSTEMS**

- A. All ignition systems must be approved by LOORRS.
- B. No computerized systems are permitted unless LOORRS approved.
- C. Any make or brand of spark plug may be used.
- D. All vehicles must have a working alternator/generator system.
- E. All vehicles must have a self-starter in working condition and must be capable of starting on their own power.
- F. All electrical switches must be located on the dash panel.
- G. All vehicles must have a master on/off switch wired to the battery in a manner that will cut off all electrical power and the engine.
- H. Master switch must be labeled as such, have a red circle around it, be located on the left side of the dash panel, and must be accessible from the outside of the race vehicle. Red circle must be at least 1 inch wide.

#### **PB-17 ENGINE COOLING SYSTEMS**

- A. Installation, location, and type of electrical cooling fan must be acceptable to LOORRS.
- B. No icing refrigerant chemicals may be used in or near the engine compartment or in any place on the car.
- C. Electrical engine cooling fans are optional.

#### **PB-18 ENGINE EXHAUST SYSTEMS**

- A. Mufflers are required.
  - a. Muffler must meet a maximum decibel of ~~100~~ 105 as measured ~~50~~-100 feet from track side. There will be a penalty of 10 pounds per DB over maximum, will be added to real weight for the first offense.
    - i. Consecutive events of non-compliance will result in weight penalty doubling with each event.
    - ii. Any competitor that remains out of compliance after 4 consecutive events will not be permitted to compete or may be disqualified
    - iii. DB readings may not grow more than 2 DB from the first readings of any event leading into the last race of the weekend
- B.
- C. Exhaust pipes must be attached to headers in a secure manner.
- D. Exhaust pipes must be routed to the outer edge and rear of the vehicle.
- E. All exhaust must discharge downward and outward to either side of vehicle.
- F. Exhaust heat shields are permitted.

#### **PB-19 CARBURETOR**

##### **Non Ecotec:**

- A. One carburetor for water-cooled; two carburetors for air-cooled.
- B. Maximum of two venturis per carburetor.
- C. Maximum venturi size:
  - a. 42 MM for two valve engines.
  - b. 29 MM for four valve engines 1600 CC and smaller
  - c. 28 MM for four valve engines 1601 CC to 1650 CC.

#### **PB-20 CARBURETOR RESTRICTOR PLATES**

- A. No devices between the carburetor and the intake manifold, designed to increase or redirect airflow will be allowed.

## **PB-21 AIR AND INTAKE CLEANERS**

- A. Intake air or filtered air cannot be blended with alcohols, ether, or other oxygenates, nor blended with aniline or its derivatives, nitrous compounds, or any other nitrogen containing compounds.

## **PB-22 FUEL INJECTION**

- A. Fuel injection is allowed on the Pro Buggy Ecotec engine only.

## **PB-23 FUEL CELL**

- A. Maximum size is 9 gallons.
- B. All fuel lines and vent lines must be routed (meaning come out) from the top of the fuel cell.
- C. All fuel cells must be LOORRS approved.
- D. LOORRS will reject any previously approved fuel cell, which appears to be defective, damaged, or not in proper condition.
- E. No pressure systems will be allowed. Any concealed or not concealed pressure type containers, feed lines or actuating mechanisms will not be permitted, even if inoperable.
- F. Icing, Freon type chemicals, or refrigerants may not be used in or near the fuel system.
- G. Electric fuel pumps must have oil pressure shut-off. Loss of oil pressure will automatically shut off fuel pump. A momentary on bypass may be installed. The momentary on by pass may be like a push button, 2-pole starter button, which can be mounted in a position best suited to the driver. The oil pressure-sending unit is either AC Delco part number 25036938, Niehoff part number OP23481, Wells part number PS119 or PS122, Napa part number OP6624 or OP6616, Standard ignition Blue Streak part number PS126 or Niehoff Borg Warner part number OP23311. The sending unit receives power from the ground.
- H. Digital dash or electrical device may replace mandated mechanical fuel pressure switch for operation of electric fuel pump, provided operation can be verified by the tech team to only allow power to fuel pump for a maximum of 4 seconds when engine is not running.
- I. No material other than standard foam as provided by the fuel cell manufacturer is permitted.
- J. Rear mounted fuel cell must have a chassis or body cross member of substance between the fuel cell and driver and be protected from ground obstacles.
- K. Fuel cells must be dated by manufacturer. Fuel cells will become obsolete 5 years after date of manufacture and must be replaced.
- L. All fuel cell fillers and vents must have check valves installed.
- M. Fuel pressure regulator vent line must do one of the following:
  - 1. Connect to intake manifold vacuum.
  - 2. Connect to air cleaner so that any fuel enters engine.
  - 3. Connect to fuel cell.
  - 4. Have vent hose routed past the rear axle.
- N. A splash shield must be in place to direct any spill away from the driver, motor, and motor exhaust. A body panel is considered sufficient splash shield.
- O. Fuel cell cannot be vented into the driver's compartment of any vehicle.
- P. All fuel cells must be housed in a metal can, .060 thick aluminum minimum.
- Q. Fuel cell must be mounted using metal straps. Straps must be a minimum 1.250 wide X .040 thick. No aluminum or nylon straps allowed.

## FUEL VENT ROUTING

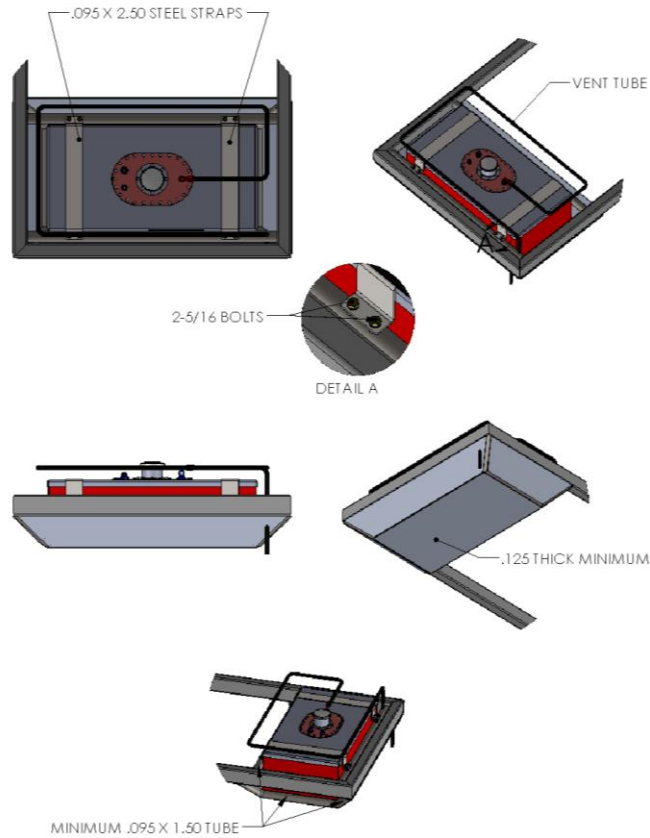


FIG 26

**ALL FUEL CELL LINES AND VENTS MUST COME OUT OF THE TOP OF THE FUEL CELL (PICTURED ABOVE).**

### PB-24 FUEL

- A. All cars shall use fuel, as defined in the following graph, unless a specific exemption is made in the provisions for a specific category/class
- B. Permitted Fuel: Permitted fuel is herein defined as gasoline meeting specified dielectric constant standards and not contain any prohibited substance in excess of stated limits. Gasoline is a mixture of refined hydrocarbons. Gasoline is an electrical insulator and its relative effectiveness as an insulator is represented by its dielectric constant(D.C.). The D.C. of gasoline will be measured by an LOORRS FTK01 Fuel Check Meter. The 0 (zero) calibration of the LOORRS Fuel Check Meter is set against reagent or laboratory grade cyclohexane. Gasoline may be tested and certified at LOORRS events by the determination of the dielectric constant using the LOORRS Fuel Check meter and through the application of various chemical analyses. If a competitor's fuel is not compliant with the fuel standards below, LOORRS shall take appropriate action. Penalties for use of non-compliant fuel can include one or more of the following: fine, reduction of points, and loss of prizes and/or suspension. If the services of an outside laboratory was used and the fuel was found to be non-compliant by the laboratory, the racer will be assessed the cost of the fuel transportation to the laboratory and laboratory fees.
- C. Restricted Substances: The fuel must not be blended with other alcohols, ethers, or oxygenates, and it must not be blended with aniline or its derivatives, nitroparaffins or other nitrogen containing compounds Nitrous oxide is forbidden.

Fuel Standards			
Classes	Type		DC Max
All classes except	Gasoline without added oil		3
Karts			
Karts	Sunoco 260 GTX		1.5
The use of any substance in the following table in excess of the stated limit is prohibited either in fuel or otherwise introduced into the engine.			
Chemical Compounds Prohibited or Restricted in LOORRS Race Fuels			
Compounds	Examples		Maximum Weight Or Percentage by Weight Allowed
Total Aldehydes	Acetaldehyde, Acrolein, Formaldehyde		1.00%
Benzene			5.60%
3,3-dimethyl-1 butene			0.05%
Total ethers	1,4 Dioxane, ETBE, Furan, MTBE, Tetrahydrofuran		0.00%
Total Dienes (Diolefins)	1,d Butadiene, Isoprene		1.00%
Ethanol			0.00%
Total Epoxides	Ethylene oxide, Propylene oxide		0.00%
Total Nitrogen Compounds	Nitromethane, Nitroethane. Nitro- propane, and all aromatic nitrogen compounds such as Nitrobenzene, Ammonia, Amines and their salts, Aniline, Hydrazine, Pyridine, Pyrrole, Benzidine		0.00%

- D. Cooling: The cooling of fuel is not permitted during competition.
- E. Fuel Samples: LOORRS has the right to sample a Competitor's fuel at any time during the Event. Samples will be impounded for observation and or testing by LOORRS and/or any outside laboratories at LOORRS discretion.
- F. No nitrous oxide.
- G. If LOORRS officials suspects maskers in fuel, chemical testing will be conducted at possible expense to the competitor.
- H. Penalties for use of hazardous chemicals will be severe including fine, and/or reduction of points, and/or suspension.
- I. All Cars Restricted to Non-Oxygenated gasoline. Gasoline cannot be blended, mixed, or modified in any way.

#### **PB-25 OIL COOLERS**

- A. All oil coolers and their installation must be approved by LOORRS.
- B. Engine and transmission oil to air or oil to water heat exchangers are permitted.
- C. Cooling fans are permitted. No coolers are allowed in the driver's compartment.

#### **PB-26 TRANSMISSION**

- A. Transmissions must be standard production, catalogued, and available through regular dealer channels.
- B. All forward and reverse gears must be in working order.
- C. No sequential shift transmissions will be allowed.
- D. Motor crankshaft must be connected to transmission input shaft via a conventional clutch assembly or vane type torque converter

#### **PB-27 DIP STICKS**

- A. All dipsticks must be secured in dipstick tube with a positive locking or securing method.

#### **PB-28 TIRES**

- A. Tires must be DOT only
  - 1. DOT tire classes are restricted to tires that are intended for highway use. All tires must be designed, built, and sold for use on passenger car or pickup truck ONLY.
  - 2. Tires must be available to the general public through standard dealers or normal internet retail stores. All tires must be listed in dealer communication as available prior to use and must be listed on company web site in the same size and model of tires. Internet only or one store only tires are NOT acceptable. Tires



must be able to be purchased by the general public and or LOORRS officials before being allowed to be used in any race.

3. Tires need to be part of a multiple line of tire sizes within a currently sold design. A minimum of 2 sizes in addition to what is allowed in the class must be offered. A tire used in the race should be identical in construction: rubber compound, durometer, construction, sidewall with identical tread design as other sizes not used in the race (Example – if the tire used is a 32" tire, other tires from the manufacturer in sizes like 31" and 33" will be the same as the tires raced upon).
  4. Tires may not exceed \$200 in price
- B. Durometer testing will be done and shall not be below 58 points. Tires may be Durometer tested with race ready conditions prior to any competition on the track
  - C. Each Tire Manufacturer must submit for approval from LOORRS a list of the tires they wish to use in competition no less than 3 weeks prior to any event they wish to compete with said tire. This notice should be sent by mail and copy by email to the Technical director and is not considered received if no confirmation of receipt is sent by the Technical director of LOORRS. The notice must include tire line name, size, load range, part number, and manufacturer's suggested retail sales price. It is the responsibility of the Tire manufacturer to submit the tire use request list before expecting to use any tire make or model or size at any LOORRS event. Once any tire make / model / size has been submitted and approved for use the manufacturer may consider that approved for the rest of the race season and is not required to submit again unless a change is made in construction or compound of the tire in question. Any change to construction, compound, or tread design will be considered a "new" tire and must be re-submitted and follow all tire guidelines for the class.
  - D. LOORRS at its sole discretion may purchase tire(s) from a retail outlet of its choosing at any given time to be brought to the track to be used in the inspection process. Any cost associated with LOORRS obtaining the required tire(s) for comparison to the tire(s) brought to the track will be billed back to the participating manufacturer at the same cost incurred by LOORRS in the process including any and all testing procedures and lab costs. LOORRS officials may at their sole discretion dis-assemble or cut the tire(s) apart for testing purposes as part of the testing process. At the end of the inspection process time the purchased tire(s) will be returned to the Manufacturer by LOORRS tech officials.

#### **PB-29 WHEELS**

- A. All wheels must be in good repair and free from cracks or defects that could cause wheel failure.
- B. Lug nut must be open ended, and of proper size.
- C. Studs must extend a minimum of 2 full threads past the end of the lugnut.
- D. Wheel studs may be no closer than 1/2 inch from the outer most face of the bead lock ring opening or wheel. Stud ends must be rounded.
- E. All bead locks must have recessed bolts only that do not protrude past the face of the ring.

#### **PB-30 RADIOS**

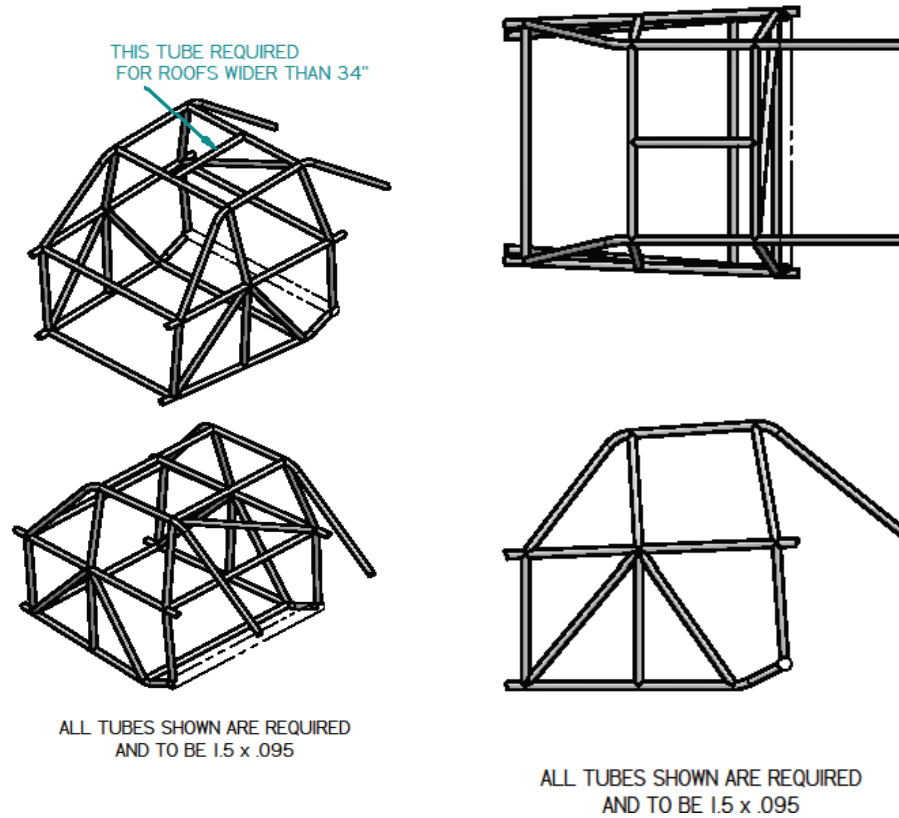
- A. Radios must be of two-way voice communication type only. Each race team is responsible for meeting FCC requirements.
- B. Radio communication between drivers is not permitted.
- C. All radio frequencies must be approved and reported to LOORRS prior to their use.
- D. All race vehicle radio communication systems must be approved by LOORRS.
- E. See Section 5 of LOORRS General Rules for spotter requirements.
- F. Spotters are required for all race teams.
- G. Any 2 way radios used at a LOORRS event may not exceed 6 watts output.
- H. Each competitor race vehicle must use at all times while on the track an override race receiver to listen to race control that overrides any communication from the spotter when race control is transmitting to the vehicles. The receiver device must be approved by LOORRS and meet LOORRS standards at all times. Competitors will not be allowed on the track at any time without the race receiver installed and functional.

#### **PB-31 TRANSPONDERS/TIMING**

- A. Remote score timing devices will not be permitted by teams, owners, or anyone associated with an entry, unless approved by LOORRS.
- B. All LOORRS teams are required to purchase remote timing transponders. Transponders can only be purchased through LOORRS and numbers must be recorded with LOORRS officials.
- C. Drivers are responsible for the charging and installation of all transponders. Any entry without a properly charged, properly installed, functioning transponder may not be scored and may be subject to further penalty.

D. Transponders must be mounted 98 inches behind the front bumper on a Pro Buggy.

### BUGGY-TOP VIEW



**FIG 1**

\*Suggested design for newly constructed buggies. Final design is up to individual builder, but all bars within the driver's compartment must be 1.5 inch by .095 round steel seamless or DOM tubing. All intersections must be gusseted. All designs are subject to LOORRS approval.

\*Buggies constructed before 2002 must have a minimum of two 1.5 inch by .095 bars added to each side of the existing frame in such a way to protect the driver from side impact. All two-seat vehicles must have 1.5 inch by .095 tubing added to the center roof. All intersections within the driver's compartment must be gusseted. All designs are subject to LOORRS approval.

FIG 2  
BUGGY ROOF PANEL

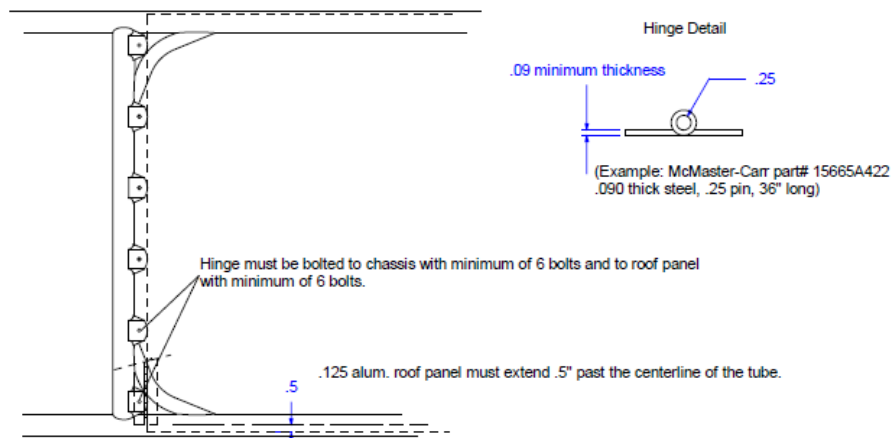
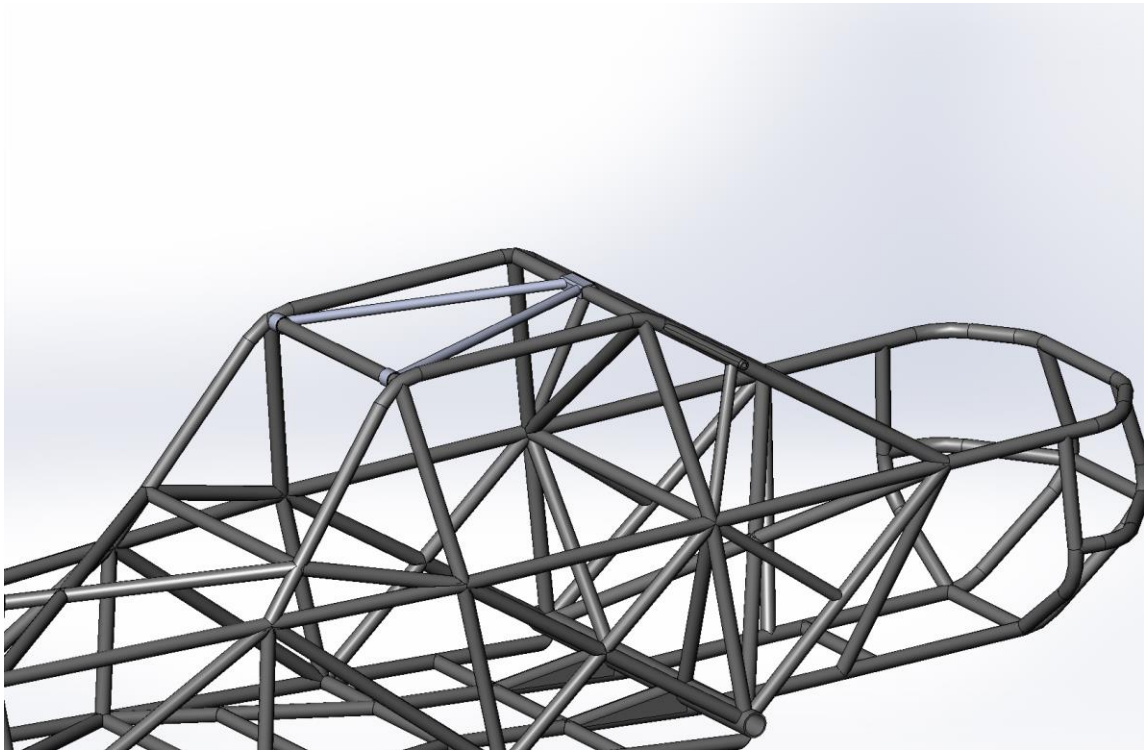


FIG 3



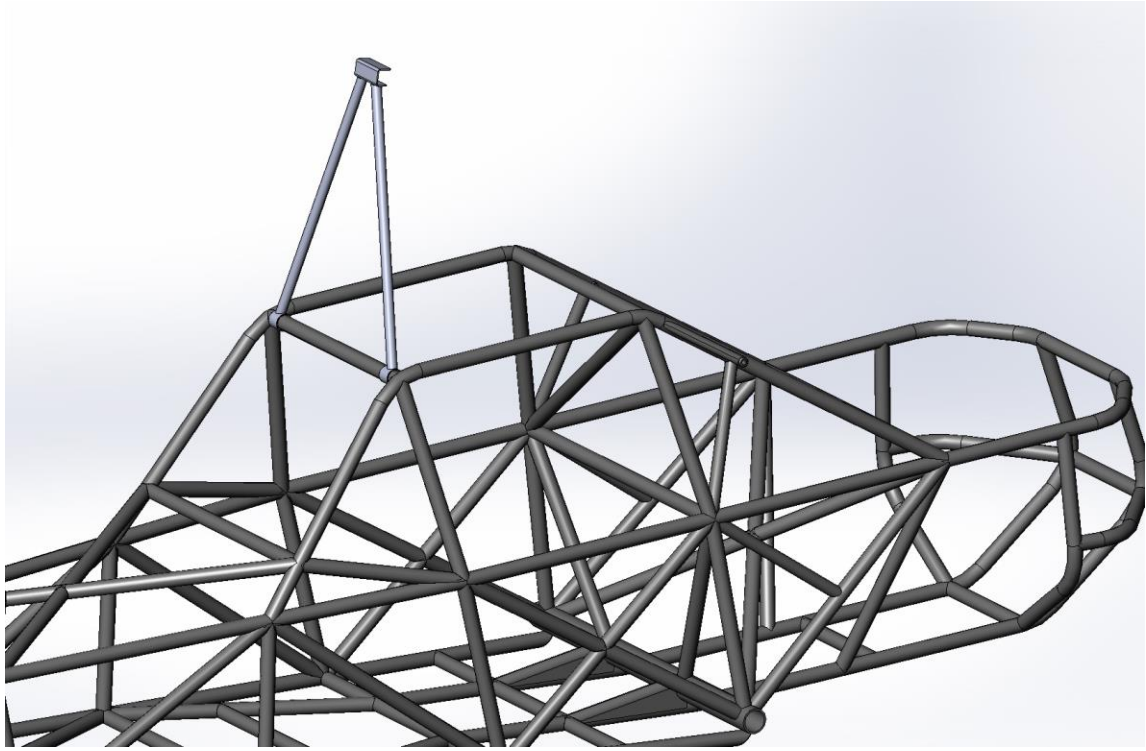


FIG 3