

## **NECA Rule Disclaimer**

The rules and or regulations set forth herein are designed to provide for the orderly conduct of racing events and to establish minimum expectable requirements for such events. These rules shall govern the conditions of all events, and, by participating in these events, all participants are deemed to have complied with these rules. NO EXPRESS OR IMPLIED WARRANTY

FOR SAFETY SHALL RESULT FROM PUBLICATION OF OR COMPLIANCE WITH THESE RULES AND/OR REGULATIONS. They are intended as a guide for the conduct of the sport and are in no way a guarantee against injury or death to a participant, spectator or official.

The Chief Steward shall be empowered to permit minor deviation from any of the specifications herein or impose any further restrictions that in his opinion do not alter the minimum acceptable requirements. NO EXPRESSED OR IMPLIED WARRANTY OF SAFETY SHALL RESULT FROM SUCH ALTERATION OF SPECIFICATIONS. Any interpretation or deviation of these rules is left to the discretion of the officials. Their decision is final.

## **NEW RULE CHANGES FOR 2010 TO BE EFFECTIVE IMMEDIATELY**

- 1.) New Optima batteries acceptable.  
(Optima 35 and the Optima SC25A)  
(Rule #2, Section 8 ART. 1)
- 2.) A rear view video camera may be used in place of mirrors.  
(Rule #4, Section 5, ART. 2, Part C)  
\*Due to the camera being a safety device, the cost does not count towards the value of the car and can be run off of a different power source because the device is not a performance enhancer.

## **NECA HIGH SCHOOL STOCK CLASS RULES**

### **RULE ONE - Organization**

#### ***Section 1 FORMAT***

##### **----ART. 1 . . . NECA EVENTS**

1. Are multi-car competitions in which cars compete against the clock to see which can cover the greatest distance in a set amount of time. Races may vary from 30 minutes to one hour in length. The length will be announced with the race registration.
2. NECA Events may be ran in an Open Class or Stock Class format. Both classes use the same rules except for the following:

Money spent on car (Rule #2 Sec. 1 Art. 1)

----ART. 2 . . . ELIGIBILITY FOR PARTICIPATION in NECA sanctioned events is open to High Schools, Technical Centers, and Charter Schools organized as 9-12 or 10-12 schools who are in compliance with NECA event and vehicle regulations.

---ART. 3 . . . A POINT SYSTEM will be used for scoring cars in the NECA Championship Series events. Cars entering these events will be awarded points based on:

1. NUMBER OF CARS DEFEATED

One point is awarded for each car defeated.

2. TIE BREAKERS

Tie Breaker #1: Add up places received and find average. Lowest average wins.

Tie Breaker #2: Fastest overall speed in any one race.

The team receiving the most points in the series will be the national champion for NECA.

---ART. 4 . . . THE LENGTH of the competition year shall be from the first day of September to the last day of August of the following year. National and Regional NECA points championships will be awarded based on points earned during this period.

Trophies will be given to the 1st-3th place finishers in each race and 1st place in both design and sportsmanship.

(no points will be awarded)

**Section 2 COURSE REQUIREMENTS**

---ART. 1 . . . RACE COURSES must be of adequate size to accommodate all cars entered into the race. Adequate size shall be interpreted as meaning a course in which the cars entered have sufficient room to pass and/or maneuver over the majority of the course. The Chief Steward may divide the field into as many heats as are required for safe and competitive racing.

---ART. 2 . . . ROAD COURSE DESIGN may incorporate turns, chicanes and/or other features unique to the course. A road course will normally include at least two right turns and two left turns. Sections of the course may include areas where no passing is allowed for the sake of safety or for course interest. Blue flag represents move over; on road course slow cars shown a blue flag, should go straight through either high or low of chicane. (Decide at beginning of race)

---ART. 3 . . . THE RACE COURSE LENGTH must be at least 660 yards (3/8 mile) from start to finish. The track's length must be certified by the Chief Steward who will determine where the course will be measured. Oval courses will be measured at the inside edge of the racing surface, to be determined by the race sponsors and approved by the Chief Steward. Final judgement will be made by Chief Steward.

---ART. 4 . . . THE COURSE MARKINGS will include visual cues for corners, boundaries and obstacles which are likely to be confusing to the competitor. The cues may be placed on the surface of the course or on the side. The placement of the cues must not affect the safety of the course.

---ART. 5 . . . THE RACE SURFACE must be paved and free of holes, protrusions, bumps or other irregularities that may present a hazard to competitors.

----ART. 6 . . . THE DIRECTION OF TRAVEL may be clockwise or counter- clockwise on any course at the discretion of the Chief Steward. The direction must be announced at the time of registration for the event or the direction will, by default, be counter-clockwise.

### **Section 3 STARTING GRID**

----ART. 1 . . . ALL NECA SANCTIONED EVENTS will begin from a standing start. The grid shall be two or three cars wide.

----ART. 2 . . . THE SEEDING OF THE CARS into the heats and grid positions will be at the Chief Steward's discretion. This seeding criterion will normally be announced in advance of the event. However, either random assignment or evaluative criteria may be used by the Steward to seed heats and/or races as conditions require.

### **Section 4 INSPECTION PROCEDURES**

----ART. 1 . . . ALL COMPETING CARS must conform to NECA rules and must be inspected prior to any NECA-sanctioned event.

----ART. 2 . . . CAR OWNERS, INSPECTORS AND BUILDERS are expected to read, understand, and follow the current rules relating to design, construction, safety and competition. Following this requirement will make inspection a satisfactory process for inspectors and racers. Tools used by inspectors should include a tape measure, volt meter, and air pressure gauge able to obtain at least 120 PSI. The inspection team must also have a complete understanding of the rules.

----ART. 3 . . . IT IS THE SOLE RESPONSIBILITY of the car owners or agent to produce their car at the inspection area of NECA-sanctioned events in a timely manner. Owners/agents must allow adequate time for the inspection teams to carefully inspect the car before entering the racecourse. Uninspected cars will not be allowed to race.

----ART. 4 . . . INSPECTION OF COMPETING CARS will be authorized by NECA registered officials following the NECA INSPECTION

CHECKLIST FILLED OUT BY INSPECTION TEAMS.

----ART. 5 . . . ANY EQUIPMENT which is not envisioned by the rules but which may markedly advance the art of electric car racing by significantly boosting performance, may be eligible for exclusion on the car on the first race date following its presentation for inspection.

Fair warning to other competitors, a list which will consist of:

1. a description of equipment,
2. the source of its components, or the method of its construction,
3. and the retail value of the equipment must be given. The information will be considered to have been given fair warning if posted on the NECA website in a manner consistent with fairness to other competitors.

----ART. 6 . . . NON-COMPLIANT CARS (cars not in compliance with NECA rules) may be allowed to run in NECA-sanctioned events only with the permission of the Chief Steward. The Chief Steward must determine that the car is unlikely to interfere with NECA-legal cars during the conduct of the race. Interference includes but is not limited to: compromise of safety for car, driver, participants or spectators; limiting the full use of the course for competitors; and, providing advantage to other cars in the field. No non-compliant car can earn NECA points or establish NECA records.

### **Section 5 INTERPRETATION OF RULES**

----ART. 1 . . . RULE CHANGES and/or interpretations of rules is accomplished by the Chief Steward in conformance with the goals of NECA. The Chief Steward shall be the race organizer or his/her designee.

----ART. 2. . . IN SITUATIONS in which the NECA Rules are ambiguous, silent or lacking specifics, the Chief Steward will make the final determination for the conduct of the event in conformance with the goals of NECA.

----ART. 3. . . DISQUALIFICATION CAN OCCUR only by the decision of the Chief Steward and, in addition to other points in the rules, may be issued for violations of sportsmanship, deliberate cheating, anti-social behavior or other actions which violate the spirit of NECA racing. The decision of the Chief Steward is final.

----ART. 4. . . DISPUTES AND GRIEVANCES are handled through an appeal. An appeal is limited to a contention where clear advantage was gained that affected a final place through illegal means or misapplication of the rules. A driver may file a protest with the Chief Steward within five minutes of the end of an event. The Chief Steward shall render a decision after reviewing the appeal. Only if an appeals panel has been appointed can the decision of the Chief Steward be appealed. When used, the decision of the appeals panel is final.

----ART. 5. . . A HIGH LEVEL OF SPORTSMANSHIP is expected of all competitors. Unsportsman-like conduct is behavior which is unethical or dishonorable. It includes, but is not limited to, taunting an opponent, use of trash talk, arguing, disrespectfully addressing an official, use of profanity, willful failure to follow the directions of an official, or other action which could bring discredit to the individual or to his/her school. Unsportsmanlike conduct by a driver, team member or adult advisor will result in disqualification. All persons associated in any way with a NECA event are expected to conduct themselves in a proper manner.

## **RULE TWO - Specifications**

### **Section 1 General Specifications**

----ART. 1 . . . THE RETAIL VALUE OF NECA STOCK CLASS vehicles may not exceed \$2,500.00 for the competition year. This value excludes batteries, driver clothing, seat belt and helmet. The intent of this rule is to cap the costs of competition in the High School Stock class. All schools competing in this class must work within the spirit of this rule.

Therefore:

a. Each team must make available to all other competitors and judges a retail price list of all parts of

each vehicle. The

total retail cost of all parts may not exceed U.S. \$2,500.00.

2. Each team must make available to all other competitors and judges a list of suppliers or vendors of each vehicle part used along with telephone and/or address of retailer.
3. Sale priced, discounted, quantity discounted, donated or "deal" parts, used, remanufactured, rebuilt or recycled parts, "junk" parts or old parts from previous vehicles shall be fairly appraised as to their retail price at the time of acquisition and listed as an estimate on the retail price list. Postage or freight charges, taxes, shipping & handling charges, and/or price increases following purchase shall not be included in the retail price.
4. As a matter of encouraging participants to build, fashion and/or fabricate their own parts, each vehicle part constructed entirely by the team shall be listed at the retail cost of materials only. Professionals or technicians who assist the team in a teaching or supervisory role during the construction shall be considered as "members of the team." The determination by sponsors as to when this rule applies must be based upon the spirit of this rule. The intent is to avoid undue advantage for any team while encouraging the widest participation from students.
5. The cost of safety belts, the seat, and the brakes shall not be included in the computation of the retail value of the vehicle.
6. OPEN CLASS NECA VEHICLES may use unlimited dollars.

----ART. 2 . . . NECA SANCTIONED VEHICLES MUST HAVE at least three wheels and not more than four, one or more of which may drive the vehicle, and all of which must be load bearing and designed to remain in contact with the racing surface at all times, even under hard cornering conditions. There is no limitation to the number of driven wheels or axles.

----ART. 3 . . . THE TURNING CIRCLE of the vehicle must be less than 15.5 meters curb to curb.

----ART. 4 . . . THE AXLE(S) AND SPINDLES MUST be a minimum of one- half inch (12mm) in diameter if unsupported at both ends.

### **Section 2 Body**

----ART. 1. . . ALL VEHICLES MUST HAVE A BODY SHELL. The shell must prevent any part of the driver's body from contact with any other vehicle or stationary object.

----ART. 2 . . . SHARP EDGES, CORNERS OR PROTRUSIONS that could cause injury must be avoided in the design and finished construction of the body. Fins, spoilers, airdams and other aerodynamic devices must be deburred and filed or coated with tape or other material which will dull the edge.

----ART. 3 . . . OFFICIALLY ASSIGNED VEHICLE NUMBERS at least 15 centimeters in height must be on both sides of the car. The number must be in a contrasting color to that of the vehicle so that it may be easily read from a distance for scoring purposes.

### **Section 3 Dimensions**

---ART. 1. . . ALL NECA SANCTIONED VEHICLES MUST MEET the following dimensions:

1. Minimum track width (front or rear) is 90 cm  
(rule change to comply with Electrathon America)
2. Maximum vehicle width is 1.5 meters
3. Maximum vehicle length is 4 meters
4. Minimum ground clearance is 1.5 inches or 3.81cm

---ART. 2 . . . THE VEHICLE MUST WEIGH a minimum of 100 pounds without driver, driver clothing, driver ballast, radio, and batteries.

### **Section 4 Tires and Wheels**

---ART. 1. . . ALL NECA SANCTIONED RACING EVENTS must be run on inflatable tires. The mounted tire must have a minimum diameter of 30 cm and a maximum diameter of 70 cm. Tread design is optional and may be slick or smooth. The tires selected may be of any design suitable for use under the loads and conditions of NECA racing. Cars not meeting this standard will not be allowed on the racing surface.

---ART. 2 . . . TIRE INFLATION PRESSURE may not exceed the recommended inflation pressure placed on the tire by the manufacturer by more than 10% cold when the tire has no DOT label. Tires with DOT markings may exceed the recommended inflation by 15%.

---ART. 3 . . . SAFETY WIRE or cotter pins must be used on the wheel nuts of each attachment. Axle ends must be tapped to permit the use of this equipment.

---ART. 4 . . . WHEELS MAY BE of any design suitable for use under the loads and conditions of NECA racing. Wheels designed for use on bicycles with fewer than 48 spokes are not recommended.

### **Section 5 Brakes**

---ART. 1. . . ALL NECA SANCTIONED VEHICLES MUST be constructed so that at least two wheels are braked. Individual brakes must be installed on:

1. both wheels of the common axle and must be capable of being simultaneously activated by a single foot and/or hand device;
2. the center of an axle with a single disc brake.

---ART. 2 . . . THE INSTALLED BRAKES MUST BE CAPABLE of locking the wheels when the brakes are set full on and the vehicle is pushed. Cars not meeting this standard will not be

allowed on the racing surface.

### **Section 6 Electrical System**

----ART. 1. . . ALL NECA SANCTIONED VEHICLES MUST be equipped with two isolation switches or one switch with two actuators which will cut all power to the vehicle and accessories. One switch or actuator will be mounted inside the vehicle which the driver can easily reach. This switch may be a circuit breaker. A second switch or actuator will be mounted on the outside of the vehicle easily accessible by race officials. The switches or actuators (internal and external) must be marked so that anyone could easily determine how to turn them to the OFF position.

----ART. 2. . . THE WIRING SYSTEM must be well-insulated and of sufficient capacity to handle the current loads anticipated. Wiring must be securely attached to the body or frame. Terminals must be mounted so that they will not short circuit or come loose from their mounting during competition.

----ART. 3 . . . ALL NECA SANCTIONED VEHICLES MUST be equipped with a fuse or circuit breaker in the circuit between battery and motor. The fuse or breaker must be mounted in such a way as to avoid the accidental ignition of battery gasses.

----ART. 4. . . THE BATTERIES must be securely mounted. Battery boxes and restraints must be mounted to the frame of the vehicle

### **Section 7 Motor**

----ART. 1. . . ALL NECA SANCTIONED VEHICLES MUST be powered only by electrical motor(s). Any type of electrical motor may be used.

----ART. 2. . . THE DRIVER MUST CONTROL the motor, whether by manual or semi-automatic means. The motor must shut off immediately and automatically whenever the driver releases the motor controller.

### **Section 8 Battery**

----ART. 1. . . ALL NECA STOCK OR OPEN CLASS Batteries

1. STOCK AND OPEN CLASS VEHICLES must be powered by a Werker WKA12-55P/FR battery, Optima 35, or an Optima SC25A. Batteries will be weighted, inspected, and marked before the start of each race.

No heating, alterations, or modifications to the battery are permitted, including modifications performed by the manufacturer or supplier.

Any batteries approved by OPPD, Electrathon America, or Iowa Electrathon are also legal for open class only.

You can purchase the Werker 12V 55ah battery from Batteries Plus.

Jason Ego  
Batteries Plus

3575 Alpine Ave NW  
Walker MI 49544  
(616)-647-0100

Battery name: WKA12-55P/FR  
Werker 12v 55ah

---ART. 2. . . THE BATTERY TEMPERATURE

a. ALL Batteries must not exceed the temperature created by charging to manufacturer's settings, to be measured on the case exterior at the start and end of competition. The battery may not be heated by any device or means prior to or during competition.

**RULE THREE - Driver**

***Section 1 General Qualifications***

ART. 1 . . . ALL DRIVERS OF NECA SANCTIONED VEHICLES must have their driver's license or segment one permit. Drivers under the age of eighteen must have a liability release signed on their behalf by parent or guardian. Drivers 18 and older must also execute a release but may sign their own release.

ART. 2. . . THE DRIVER MUST WEIGH a minimum of 160 pounds. The required weight includes race clothing and helmet. Drivers not meeting this minimum weight will require ballast to achieve the standard.

***Section 2 Driver's Ballast***

ART. 1. . . BALLAST MAY NOT BE PERFORMANCE RELATED or performance enhancing equipment or material. (Note: Computers or communication equipment, while otherwise acceptable, is specifically prohibited from acting as driver ballast.)

ART. 2. . . BALLAST MUST:

1. be capable of being removed from the vehicle for weigh-in
2. be capable of being securely fixed in place in the vehicle
3. be non-liquid
4. be contained without loss during the race.

ART. 3 . . . BALLAST MAY CONSIST OF metal shot or ingots, driver weights, or other material. Each driver is responsible to provide the correct amount of ballast, which should be adjustable to accommodate variations in driver weight or scale limitations. Loss of ballast during competition will disqualify the vehicle.

***Section 3 Driver Position and Exit***

ART. 1 . . . ALL DRIVERS NECA SANCTIONED VEHICLES must be seated and facing the front of the vehicle. Legs must be forward.

Kneeling, prone or transverse positions are prohibited.

ART. 2 . . . THE DRIVER MUST be able to exit the vehicle unaided within 20 seconds. All body and/or canopy fasteners and safety belt latches must be accessible to the driver to permit this action. Cars not meeting this standard will not be allowed on the racing surface.

## **RULE FOUR - Safety**

### ***Section 1 Clothing***

ART. 1 . . . IT IS RECOMMENDED that drivers wear driving suits of fire resistant material that effectively covers the body from neck to ankles to wrists. If such clothing is unavailable, the driver must as a minimum must be dressed in long sleeved upper body garment and full-legged lower body garment. The upper and lower parts must meet and overlap. Gloves are optional but recommended. Shoes are required.

### ***Section 2 Belts***

ART. 1 . . . ALL NECA SANCTIONED VEHICLES MUST be equipped with a quick release five point racing harness with anti-submarine (crotch) strap. Belts must be minimum 3" width and in good condition. Drivers must use them at all times.

ART. 2 . . . THE LAP BELT ATTACHMENTS MUST be mounted to a structural point minimum three inches below the safety catch. This structural mounting point must be the frame of the car or reinforced to the frame.

ART. 3 . . . THE SHOULDER BELT ATTACHMENTS MUST be mounted to a structural point behind the seat and at least three inches below the driver's shoulders. This structural point must be the frame or roll bar or be reinforced to the frame or roll bar.

ART. 4 . . . THE SAFETY HARNESS must be mounted securely to the vehicle so that the entire car and driver can be lifted from the ground by means of the belts alone.

### ***Section 3 Roll Bar***

ART. 1 . . . ALL NECA SANCTIONED VEHICLES MUST be equipped with a roll bar capable of lifting the entire car and driver.

ART. 2 . . . THE ROLL BAR MUST BE ATTACHED to the frame and mounted in such a manner as to prevent collapsing or breakage. The bar must not be less than two inches above the driver's helmet when seated in race position. The roll bar must be braced either forward or rearward to the frame of the vehicle. The upper attachment point to the roll bar must be no greater than 30 centimeters below the top of the roll bar.

### ***Section 4 Helmet***

ART. 1. . . IN ALL NECA SANCTIONED EVENTS the driver must be equipped with a helmet which meets 1985 or more recent Snell specifications.

### ***Section 5 Miscellaneous Safety Features***

ART. 1. . . IN ALL NECA SANCTIONED EVENTS it is highly recommended that:

1. drivers use a safety neck brace (horse collar).
2. drivers use a full face helmet.
3. the driver's seat be racing-quality molded fiberglass or aluminum construction.

ART. 2. . . IN ALL NECA SANCTIONED EVENTS it is required that:

1. All gears, chains, drive belts and sprockets be protected with guards.
2. Drivers are protected from all moving parts.
3. Driver's mirrors are placed on both sides of the vehicle in such manner as to provide clear view to the rear from the driving position. A rear view video camera may be used in place of mirrors to provide the same clear view to the rear from the driving position. Due to the camera being a safety device, it will not count towards the value of the car and can be run off of a different power source because it does not enhance the performance of the car.
4. Bars and structural supports within the reach of the driver be padded for protection.
5. The driver wear goggles, safety glasses or full face shield.
6. The driver seat attach to a sub-structure connecting to the roll cage and/or primary frame members.

### ***Section 6 Official Flag Rules***

1. Green – race has begun
2. Yellow– Caution Do not Pass
3. Red – Danger, All vehicles stop
4. Black – Pull into pits for consultation
5. White – 1 minute left in race
6. Checkered – race has ended, no more laps will be counted