

***Welcome***  
***to the***  
***15th Annual Susquehanna 500!***  
(updated June 14, 2011)

The Susquehanna 500 is sponsored by the Northcentral PA Chapter of the American Red Cross. The mission of the American Red Cross is to improve and enhance the quality of human life by helping people avoid, prepare for, and cope with emergencies. This is accomplished through four basic services.

The Health & Safety Services program trains people in First Aid, CPR, Water Safety, and HIV/Aids Education. Blood pressure screenings are offered regularly throughout the county. First Aid Stations are maintained at several countywide events, such as the Lycoming County Fair and the Little League World Series.

The Armed Forces Emergency Services program is primarily a world wide communications network designed to relay messages between military personnel and their families in times of crisis.

The Blood Services program is responsible for collecting 100% of the county's blood supply. This is accomplished through eighty plus collections each year.

The most familiar program is Disaster Services, which provides emergency assistance to families in times of flood, fire or natural disaster.

## Questions ???

Call the following people with any questions.

### Staff Liaison

Kathy Stine

(570) 326-9131

### Car Sales

Bill VanCampen

(570) 323-4003

### Chief Steward

Bill Bradshaw

Steve Wilkinson/Larry Emery

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### Tech

Engines: Wayne Smith - [wsmith@pct.edu](mailto:wsmith@pct.edu)

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### Concessions

Red Cross thanks everyone for helping make this year's Susquehanna 500 a success. Hopefully, this has been an enjoyable event and most of all a lot of fun preparing and competing in the race. We look forward to seeing you back next year for **The Annual Susquehanna 500!**

A special thanks to our race official volunteers! Without them, this race would not be possible!

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Have a Great Weekend!

## **General Competition Rules**

These rules are intended to assist in the orderly conduct of the Susquehanna 500 as well as participant and spectator safety. The rules are to insure anyone (no matter what level of expertise in racing or mechanics) can participate and enjoy competing in this event.

1. Each team will consist of no more than five team members, including at least three drivers. Drivers and Pit Crew must be at least eighteen years of age.
2. All participants (drivers, crew, owners, and sponsors) shall conduct themselves according to the highest standards of behavior and sportsmanship, particularly in his/her relationship with other competitors and race officials. Unsportsman like conduct will not be tolerated.
3. Only team members, race officials, and authorized volunteers will be permitted within the course perimeter and only when displaying an official credential. Credentials ***must*** be worn at all times within the course perimeter. Credentials will be issued upon completion of a properly executed Release Form to be signed by each participant during registration.
4. The Chief Steward's decision in all matters is final.
5. The safety of the drivers, workers, and spectators is the ***PRIME*** consideration.
6. The owners are responsible for the behavior of their crew at all times during the event. An offense committed by any crewmember may result in expulsion of that team from competition. Each team will designate and announce their team captain prior to race weekend. Forms will be provided.
7. The consumption of alcoholic beverages or use of narcotics in the pits or other portions of the racecourse under control of the race officials is expressly forbidden. Any driver, crew member, or race official who has consumed any alcoholic beverage or narcotic on the day of the race will not be allowed to participate and is subject to local laws.
8. No one under 18 will be permitted in the pit area.

9. Cosmetic work on the car, such as painting and application of decals, is encouraged. We also encourage you to prominently display your car once it is "ready to race". This will not only promote your business, but the event as well. Bodies may be hinged or portions cut away to permit access. Pedal positions may be altered. All cars will be under the jurisdiction of the Chief Steward and the Pit Steward and are subject to impoundment at any time for inspection. All participants will be subject to impoundment at the discretion of the Chief of Tech and the Chief Steward in order to determine compliance with these rules.
10. Any and all protests must be submitted to the Chief Steward at race day headquarters. The protest must be in writing and submitted within **15** minutes after the completion of the race in question. The Chief Steward will review the protest and issue a ruling as soon as possible. An official protest form is provided in the back of this book.
11. No overnight camping in the park.
12. **DRIVING SCHOOL:** There will be driving schools for **new teams** and **new drivers**. This is to familiarize racing teams with safety regulations and course protocol. (see **RULES OF THE ROAD and FLAGS**). Any drivers or pit crewmembers that ***did not*** race in previous years ***must*** attend one of these driving schools. Dates and location will be announced later.
13. **MANDATORY TEAM MEETING:** There will be at least **ONE** Team Meeting at a location and date **To Be Announced** to review changes, procedures, and answer any questions, therefore a representative from each team **MUST** attend. **All team members are welcome to attend, however at least one representative from each team must be present. Roll call will be taken to insure that every team is represented.** This should eliminate any confusion with regard to how we will conduct the race.

**REMINDER:** A representative from **each** team **must** attend this meeting.

## SAFETY/CLOTHING REQUIREMENTS

1. The Technical Team (Tech Team), the race official volunteers, and the American Red Cross, Northcentral Pa Chapter consider safety to be our first priority. As a result we reserve the right to levy decisions at any time concerning driver/crew member apparel and conduct. Each team is responsible for the safety of their car.
2. Each driver must be equipped with racing attire including:
  - a. Full length sleeved jacket (uniform or denim jacket is appropriate).
  - b. Driver's sleeves must be in the full down (to the wrist) position.
  - c. Full length pants (no shorts)
  - d. Full shoes (athletic shoes are recommended)
  - e. Protective gloves with full finger (no exposed skin).
  - f. Foundation approved safety helmets must be worn and properly fastened by drivers any time they are in the car. This includes parade laps, warm up races etc. Face shield, protective glasses or goggles are required.
  - g. Neck braces must be worn by each driver
  - h. Long hair must be tucked inside the helmet or jacket.
  - i. Knee pads (optional) may be worn and are suggested for long legged drivers
3. Cotton or other flame-retardant materials are recommended for clothing. All clothing should be free of loose strings or other designs, which might be caught in mechanical devices or pose a safety problem.
4. If a driver is involved in a racing accident during a race and the driver appears to be impaired, he/she must pit for a driver change and a check up. No driver involved in a turnover (flip) will be permitted to continue in the event until checked and released by medical personnel!
5. No car involved in a turnover (flip) will be permitted to return to the track prior to being examined and approved as safe to drive by the Tech Steward or scrutineer. Car must be impounded. Any cart cleared to continue in that race will start at the back of the grid and will be one lap behind the lead cart. The driver cannot continue until cleared to do so by medical personnel. The team must still make its' two driver changes for that race. If the driver is not cleared to drive and if no fourth driver is available, one driver may drive twice if approved by the chief steward or the operating steward.

## THE PITS

1. Each team must provide a member of the team with a pit sign showing the car number to signal the driver as to the appropriate location in the pit. If a driver misses the pit location he or she must continue through the pit area and re-enter the track for at least one lap and then re-enter the pit area. **NO BACKING of the cars will be allowed in pit row. OVERSHOOTING your pit box. A car that overshoots by ½ or less, may push back without penalty. If more than half, the existing driver must complete another lap and continue into the pits.**
2. There will be no smoking in the pit area.
3. Any car that is removed or retired from the course perimeter will be ineligible to return to the session in progress, unless they are given permission by the chief steward or their representative.
4. When the engine is running, a driver must be seated in the car or the curbside rear wheel must be chocked front & back of that wheel. No driving will be allowed in the paddock. Race officials will strictly enforce this rule!
5. Drivers intending to enter the pits shall signal their intention before leaving the main portion of the course by raising one arm above their head.
6. Pit crews and cars in the pits are under control of the Pit Steward at all times. Cars in the pits must proceed at a reduced speed.
7. Each race requires **two mandatory driver changes among three different drivers**. The current driver will exit the car and another driver will take over as driver. Both entry and exit is from curbside only. This is called a driver change. Pit Scorers will monitor these stops as a reference for the team and to assure that all pit requirements are being met. Infractions will be reported to the Chief Steward.
8. Cars that enter the pits must come to a complete stop before the driver may exit. Pit crews may not stop cars that are entering the pit from the front portion of the car. Crews may utilize the back third of the car (for example, the rear wing) to stop the vehicle. Team members must chock the wheel while in the pits. *The wheel chock must be in place before the driver change begins and must remain in place until after the change is completed.* After the wheel is chocked no further contact with the back third of the car is allowed (except for repairs). **The driver must exit the curbside of the car and the new driver must also enter from the curbside AND must be completely seated and in control of the car BEFORE it leaves the pit.**
9. When leaving the pit, the driver may receive no assistance from the crew.
10. Exit from the pits will be controlled by a race official and signals **MUST** be obeyed.

11. *Minor repairs only, are permitted in the hot pit area and include: replacement of tires, chain, gas caps, and easily removed loose items from the car. Extensive repair must be done in the paddock. All engines removed must be brought to the attention of the Tech Steward.*
12. A team shall have no more than five (5) attendants in the pits at any time.
13. At no time will unauthorized attendants be allowed in the pit area.
14. Unless the car is actually in the pit, only one person will be allowed in front of the pit safety line. This person will be allowed to signal the driver for any pit stops.

## RULES OF THE ROAD

1. On track, contact between cars is discouraged, although some contact may be considered unavoidable. However, excessive contact is unacceptable and when alleged will be dealt with in the following manner:
  - Drivers involved will be shown a furred Black Flag as a warning.
  - If contact continues, the drivers involved will be shown a Black Flag (unfurred) and will be required to return to the pit area and to report to the Chief Steward or appointed representative. THIS RULE MAY BE INVOKED IF THE ORIGINAL CONTACT IS CONSIDERED TO BE MORE THAN CASUAL.
  - If upon review the contact is proven to be intentional, the driver will be barred from any further participation in the event. (THIS WILL NOT NECESSARILY DISQUALIFY OTHER DRIVERS ON THE TEAM) In instances where wholesale contact is occurring, the Chief Steward or his/her appointee, may Black Flag all and hold an impromptu driver meeting before practice or racing can continue.
2. It is recommended that all teams have a fourth driver schooled, registered and prepared to compete should one of its drivers be disqualified. Otherwise they will be in violation of the rule requiring two driver changes among three different drivers.
3. Driving a car “counter race” is prohibited.
4. In order to be considered a starter, a car must receive the green flag at the start. Cars entering the heat after the initial start will also be considered starters provided they enter before the checkered flag is displayed.
5. The responsibility for the decision to pass another car rests with the overtaking driver. However, this does not relieve the overtaken driver from responsibility for the safe passing by the other car. The overtaken drivers may not block. Any driver who appears to be blocking another car seeking to pass may be black-flagged. **Blocking is defined as any series of side to side moves by the front car that interferes with the rear car from having an available racing lane in which to overtake. NOTE: The front car is allowed one side to side move to set up for the preferred line into the next turn.**
6. The following hand signals should be observed at all times:
  - Before entering the pits, the driver should signal by raising his/her arm.
  - An overtaken driver should point to the side on which an overtaking driver should pass.
  - The driver of a stalled vehicle should raise both arms to indicate that he/she will not move until the course is clear.
7. If for any reason a driver is forced to stop his/her car on the course during a race, the

drivers' first duty is to place the car in such a manner to cause no danger or obstruction to other competitors. Drivers are allowed to exit their cars to help an incident at that location.

8. Drivers are to obey signals and orders from course workers and officials.
9. Drivers may receive assistance from race officials or members of any team while on course for reasons of safety, and/or good sportsmanship to help someone to be able to continue in the event. I.e.: restarting a stalled kart, reinstalling a chain, etc.
10. No car leaving the course and entering the Paddock for repairs during a practice, qualifying session, or race will be permitted to return without permission of the chief steward or their representative.
11. Due to the increased number of people, including children, that are now allowed in the paddock, -- **NO DRIVER** shall drive into the top of and down through the paddock to get to paddock spot, teammates or to return to the pits for the reason of retirement from the session or for repairs. You may enter from the top – shut off your engine – then stop immediately and get out of kart and walk the kart through the paddock in a controlled and safe fashion.
12. Any infringement of these rules will result in penalties. Penalties can be a time or lap(s) assessment, or disqualification.

## FLAGS

Information and instructions will be relayed to the drivers by means of flags at various locations around the course.

### ***THESE FLAGS SHOULD BE OBEYED WITHOUT QUESTION!!!***

**GREEN:** The heat is underway and the course is clear. Once the GREEN is dropped you may begin racing regardless of where you are in the Grid. You do not have to wait until you cross the Start/Finish line.

**YELLOW-MOTIONLESS:** Take care...Danger...Slow Down;  
NO PASSING ANOTHER CAR FROM THE FLAG UNTIL YOU HAVE PAST THE EMERGENCY.

**YELLOW-WAVED:** Great danger...Slow Down...Be Prepared to **STOP**; NO PASSING ANOTHER CAR FROM THE FLAG UNTIL YOU HAVE PAST THE EMERGENCY.

**RED:** The race has been stopped. All drivers **MUST STOP IMMEDIATELY** and wait for instructions. In the event of a RED FLAG situation cars will be regripped at the Start/Finish Line according to their order at the conclusion of the last completed lap.

**FURLED BLACK:** You have been observed driving in an inappropriate manner-if it continues, you will be black flagged and brought into the pits.

**BLACK:** Return to your pit. The Chief Steward or his representative wants to talk to you. At the direction of the Operating Steward, a driver observed violating a rule while on the track may be shown a furred black flag as a warning. If the violation continues or is repeated a full black flag would be shown requiring the driver to stop in the pit for a discussion with the Operating Steward or his/her representative. Failure to do so will result in disqualification or loss of qualifying time depending on the severity of the infraction and if it occurs during a race or qualifying session.

**BLUE:** A blue flag may be displayed to you telling you that you are being closely followed by or about to be passed by, another driver – be aware- don't block – and leave them racing room.

**CHECKERED:** You have finished the heat or practice run, return to the paddock.

## THE RACE

1. The start will be a rolling start in rows of two behind a pace car. The pole position is the inside position with regard to the first turn. If a car falls out after the grid is formed or during the parade lap, it will go to the rear of the starting grid.
2. Grids for the practice sessions will be on a numerical basis (lowest car # through highest). Heat races will be determined by the finishing order of the Tire Change Competition. All other Features & Championship races refer to race format section. (Addendum to follow upon completion of registration)
3. Should a car drop out of the race after the grid times have been established, but before the grid is formed, all cars will be moved up in grid order of starting positions to fill the vacant spot.
4. A car failing to appear on the pre-grid or starting grid at the appointed time will be regrided at the rear of the field or if the field has begun the pace lap, it will start from the pit lane **AFTER** the green flag has been displayed.
5. The driver must be in his/her car before engine starting and await the signal from the Grid Marshall. Only one of the pit crewmembers will be permitted on the grid for engine starting. The driver will signal the Grid Marshall when the car is started.
6. *There will be an impound/tech area adjacent to the paddock area. All cars will be required to pass through the technical inspection before their race. The top six finishers in each HEAT & FEATURE race must report to the tech area at once. **All cars in the Championship races must report to the "impound" area immediately following the finish.***
7. *After the Championship Races, all cars must complete a cool down lap and all cars must report directly to the impound area. After completion of the inspection, cars will be released to crewmembers and awards will be presented. **NOTE:** No work or alterations may be made to the car after taking the checkered flag and prior to the technical inspection. Any violations will result in immediate disqualification.*
8. Each **heat** will consist of 20\* laps with 2 mandatory driver changes. Each of the drivers must be different and each must drive a minimum of three (3) consecutive laps.
9. Each **feature race** will consist of 20\* laps with 2 mandatory driver changes. Each of the drivers must be different and each must drive a minimum of three (3) consecutive laps.
10. The **Championship Races** will consist of 20\* laps with 2 mandatory driver changes. Each of the drivers must be different and each must drive a minimum of three (3) consecutive laps.

*\*The number of laps is subject to change.*

## CAR PREPARATION

### *Susquehanna 500 Engine & Chassis Rules*

*There are some important rule changes for the Susquehanna 500 Race in the area of the Engine and the Chassis. Many of the errors under 4 cycle engine specs have been corrected. It will be in your best interest to read the changes.*

1. Certain decals are already in place. We encourage you to be as creative as you want to be when decorating your car. There are two **mandatory** requirements that must be adhered to:
  - a. Decals and logos that are on the car when you receive it must remain intact.
  - b. The number that you have chosen (or been assigned) for your car, **MUST** be displayed on the nose cone and both sides of the rear wing. Numerals must be a minimum of five inches (5") in height and no more than six inches (6") in height. Numbers can not exceed two (2) numerals and must contrast with background.
  - c. The Northcentral PA Chapter of the American Red Cross requests that somewhere on each car, the initials "GLF" be placed in memory of George L. Fetzer, the founder of the Susquehanna 500.
  - d. **Please remove or cover "SCCA" decals.**
2. Reinforcement of the rear wing support braces **is** allowed
3. There will be **NO** front bumpers on the cars.
4. Side protectors (inside the car) will be allowed as long as the tubing does not extend above the body of the car.
5. A semi-circle bar attached to the sides of the framework may replace steering wheel brace from floor to steering wheel.
6. Qualifying will be done Saturday morning after the kart has gone thru tech and had all major fasteners sealed/painted and been fueled and gas cap sealed. The engine used for qualifying will be the same as used throughout the weekend racing events. No critical engine parts/components will be changed without notification of tech. Should an engine need to be removed, tech must be present and the removed engine must be surrendered to tech. Engine is NOT to be changed after qualifying. If an engine is changed, that kart will now start at the rear of the field.
7. Any kart is subject to inspection or teardown by tech at any time.

## **Rule Changes for Fall 2011**

As adopted and agreed to by team members during the off season, the following rule changes will be used for this year's race in Sept. 2011.

1. All karts, all classes, will use an empty, clear plastic water bottle , 12 or 16 oz size, for a catch can. Nothing allowed inside bottle. Bottle will need to be vented to outside air for proper breather operation. This can be done by drilling a hole in the top of the bottle in addition to the hole for the drain tube/hose, usually placed in the plastic cap. No other type catch can will be allowed.
2. Sleeving of the B&S aluminum block is now permitted or you may use an Briggs IC block that already has the sleeve installed. Maximum overbore tolerances cannot be exceeded. See 4 cycle engine specs on page 17, rule 1.5
3. Bearing surrounding the bottom of the steering shaft tube is now allowed.
4. For stock class karts, steering wheel must be of the original "butterfly" design. Overall height not to exceed 7.5 inches and overall width not be exceed 12.5 inches. No semi-circular or circular steering wheels permitted in stock class.
5. Stock kart seat to remain as near stock in a 2 piece configuration. This means a separate bottom from the backrest. Stock seat has a plywood bottom and back, with padding and then covered with vinyl. Foam type seats or foam bucket seats, either 1 or 2 piece, such as from a lawn and garden tractor, not allowed in stock class. The stock seats that have the manual moveable adjustments, cause the seat to be placed higher on the kart are "unsafe" as they raise the center of gravity, and must be removed.

## APPROVED STOCK CLASS MODIFICATIONS

1. Kill switch may be relocated (not on steering wheel) NOTE: The kill switch must be operational and easily accessible to the driver.
2. *Brake system may be modified to disc **brake**, hydraulic **brake** is allowed. (Only one brake is allowed.) The brake must remain on drive wheel side.*
3. Cleaning of chain and lubrication.
4. Rear axle may be replaced as long as the axle remains a single wheel drive unit. Wheel size and tires must be “stock” as supplied by the factory. Stock tire size is 12.0 in. x 6.0 in. x 6.0 inches. Overall height of inflated tire must not exceed 12.00 inches tall, measured from bottom to top, unloaded or without driver in kart. Tire must have stock size tube inside, mounted on a 2 piece steel wheel. No welding of wheel halves together to eliminate need for tube. No aluminum wheels or aluminum wheel halves allowed. Stock wheels measure 2 ½ inches wide and bolted together have an overall width of 5 inches wide and a diameter of 6.0 inches.
5. Rear brake may be replaced on the car for safety reasons. Brake must be operational by the brake pedal. *No hand brakes!*
6. Replacement of standard wheel bearings with heavy duty wheel bearings of the same size. Stock bearing sizes are either 1-3/8 inch O.D. x 3/4inch I.D. or 1-3/8 inch x 5/8 inch only. Reinforcement of frame by gusseting in the area of engine mounts, front and rear wings, and axle permitted. Ceramic ball bearings, or ball bearings made from any material other than steel not allowed on front or rear.
7. Replace spark plug
8. Aligning of chain between gears.
9. Change oil. No performance enhancements!
10. Replacement of any other part not listed above, with factory replacement parts only unless otherwise stated in the rules.
11. The front and rear toe setting of the wheels may be changed
12. Reinforcement of drive wheel and is permitted and encouraged
13. *The clutch may be replaced as long as the drive gear is of the same number teeth and is of the **same size chain** supplied by the factory. Chain size is either #40 or #41 only and made from steel only. Large drive sprocket has 60 teeth and clutch sprocket has 10 teeth for a 6:1 gear ratio. No other combination allowed. No modifications to sprockets from stock configuration allowed. No drilling of holes to reduce weight allowed. Sprockets to be made from steel or aluminum only. Stock steel shoes only in*

*clutch and must remain un-modified. Max-Torque and Stinger clutches are the most popular.*

14. *Nurf bars and rear bumper may be added to the car. If a side nurf bar is added, the total width of the car (including the nurf bar) may not exceed 38 inches.*
15. If a rear bumper is added, it may not extend beyond the longest point of the rear spoiler.
15. Any alterations to the chassis other than the above listed will place the car in the **Modified Class** at the discretion of the officials.
16. Oil “catch can” is mandatory to keep oil from dripping on the track. All karts, all classes, will use an empty, clear plastic water bottle , 12 or 16 oz size, for a catch can. Nothing allowed inside bottle. Bottle will need to be vented to outside air for proper breather operation. This can be done by drilling a hole in the top of the bottle in addition to the hole for the drain tube/hose, usually placed in the plastic cap. No other type catch can will be allowed.
17. The gear ratio is 60:10 or 6:1
18. Support to prevent fuel tank damage is allowed. Pump gas only. To be supplied by tech thru a fueling station.
19. Frame rail tubing and crossmembers can only be steel and not to exceed 1.00 inch in diameter. No exotic metals or composite materials to be used for such.
20. Sleeving of the B&S aluminum block is now permitted or you may use an Briggs IC block that already has the sleeve installed. Maximum overbore tolerances cannot be exceeded. See 4 cycle engine specs on page 17, rule 1.5 for more info.
21. Bearing surrounding the bottom of the steering shaft tube is now allowed.
22. For stock class karts, steering wheel must be of the original “butterfly” design. Overall height not to exceed 7.5 inches and overall width not be exceed 12.5 inches. No semi-circular or circular steering wheels permitted in stock class.
23. Stock kart seat to remain as near stock in a 2 piece configuration. This means a separate bottom from the backrest. Stock seat has a plywood bottom and back, with padding and then covered with vinyl. Foam type seats or foam bucket seats, either 1 or 2 piece, such as from a lawn and garden tractor, not allowed in stock class. The stock seats that have the manual moveable adjustments, cause the seat to be placed higher on the kart are “unsafe” as they raise the center of gravity, and must be removed.

# Questions????

Red Cross Office 570-326-9131 or  
Email [kstine@ncparedcross.org](mailto:kstine@ncparedcross.org)

**NOTE: NO ROUGH OR SHARP EDGES MAY BE EXPOSED**

**RAIN POLICY:** Due to the charitable nature of this event, no refunds will be issued in the event of inclement weather. **RAIN OR SHINE.....WE WILL RACE!!!**

## 4 Cycle Engine Specs

- 01 Briggs & Stratton Stock 3.5 HP  
**NOTE:** All parts must be Briggs & Stratton factory production parts unless otherwise specified in this manual. NO machining or alteration of any part is permitted unless specifically noted. All parts to be compared to known stock parts.
- 01.1 AIR FILTER: The air filter box must be in its original position. Filters in the box are an option. If filter is used, filter must remain dry.
- 01.2 BLOCK: Must be produced with no alterations or reworking. Blocks that have been repaired from broken rod, cracked lifter area, etc. are permitted providing that repair does not constitute a functional modification. Sleeving of cylinder block is NOT permitted. The repair of one coil post is allowed, as long as the remaining post is factory and unaltered.
- 01.3 BREATHER VALVE: STOCK-UNALTERED-Tech will include complete breather valve assembly including the grommet. Two gaskets are allowed. Breather tube from breather to carburetor may be disconnected. If so, there must be a hose connected to a catch can so oil does not drop on the raceway.
- 01.4 BOLTS: Any bolts used to secure sheet metal, shrouding, etc., with the exception of the sheet metal secured by the head bolts, may be replaced with larger diameter bolts. Any other bolt EXCEPT ROD BOLTS and HEAD BOLTS may be replaced providing replacement is of same diameter.
- 01.5 BORE/STROKE: Stock cylinder bore is 2.5625 and over bore is permitted providing it does not exceed a .040 overbore. No circular or machined grooving is allowed in any position of the cylinder. Angle boring is not permitted. Stock stroke is 1.748 plus or minus .010 for wear. Stroke is checked from bottom dead to top dead. Sleeving of the B&S aluminum block is now permitted or you may use an Briggs IC block that already has the sleeve installed. Maximum overbore tolerances cannot be exceeded.
- 1.6 CAM: Only stock factory nylon camshaft with alignment as shipped from factory is permitted. The camshaft lobes must remain flat and of original width. Maximum camshaft base circle is .735.

### Camshaft Profile Limits

Exhaust	Lift	Intake
49-41	.020	8-0 btdc
34-26 bbdc	.050	6-14 atdc
10-16 bbdc	.100	26-35 atdc
20-29 abdc	.150	59-67 atdc
.170	max lift	.170
72-60 btdc	.150	35-27 bbdc
35-27 btdc	.100	4bbdc-4abdc
14-11 btdc	.050	16-25 abdc

**EZ-SPIN:** Must be profiled when cam is profiled and cannot be tampered with in any way. **Automatic disqualification!!!!**

**01.7 CARBURETOR:** Carburetors with air-mixture screws were manufactured for the 1997 race. In 1998 there was a new carburetor without the air mixture screw. Either of the two is allowed. **MUST REMAIN STOCK AS SUPPLIED BY THE FACTORY.** To be compared to known stock Carb during tech. Entirety of carburetor casting will remain stock. No aftermarket coatings are permitted. Choke must remain in place. Fuel is subject to testing at any time. Measurement of the main metering jet is .026. Briggs carb with adjustable jet, Part # 495459

**NOTE:** There will be a restrictor plate placed between the carburetor and the block. This item will replace the governor. It will be necessary to use two (2) stock factory gaskets for this plate. The plate will be placed between the two gaskets when installed. The block is already drilled from the factory to accept a stud. Stud may and should be secured with Loctite. All carb to block bolts should be LOCTITED.

The size of the restrictor plate is .425. Either WKA or IKF plate is allowed. The only area of this plate that can be altered is the lower right corner. Any other alterations of the plate will be a disqualification.

Stop arm on the throttle shaft is not a tech item. It may be bent to allow full throttle position.

Measurement on throttle shaft is .075.

Measurement on screw is .285.

Measurement on carb bore is .755.

Measurement on butterfly is .026.

**01.8 CONNECTING ROD:** Stock connecting rod **only**. Stock rod length is 2.380 + or - .005 measured from the bottom of wrist pin to top of crankshaft journal. Rod may not be lighter in weight than known stock component. No undersizing of the rod. Oil dipper must be present and in stock position.

- 1.9** CYLINDER HEAD: Stock Briggs and Stratton 3.5 HP head as shipped from the factory. Machining of gasket surface and top of head is permitted. No machining of **ANY** other portion of the head is permitted. One plane of head interior surface is subject to tech by depth gauge to establish its proximity to gasket area surface, including .010 above piston area. Other areas are to remain stock and will be compared to a known stock head. Carbon build-up on either the head or the piston that cannot be readily wiped off with a dry cloth will be considered as part of the head or piston for tech purposes.
- 01.10** CRANKSHAFT: Stock factory crankshaft **MANDATORY**. Lightning, polishing of counterweights, addition of metal or other material is not permitted. Offset crankshafts are not permitted.
- 01.11** DECK/PISTON CLEARANCE: This dimension may not exceed .015 above block surface. Machining of block surface is permitted.
- 01.12** FLYWHEEL: **ONLY** stock 3.5 HP flywheel is permitted. Stock flywheel key only. Painting or coating of the flywheel (other than factory overspray) is not permitted. **NO MACHINING OF FLYWHEEL** is permitted. Chipped fins because of poor casting is allowed, however, completely broken fins are **NOT** allowed. Weight of flywheel shall be 5.9oz **MINIMUM**. Screen must be present on flywheel holding unit.
- 1.13** GASKETS: **HEAD GASKET** - Head gasket must be a minimum of .040 thickness at a minimum of three points between head bolt\_holes around the gasket. Gasket sealer may not be utilized on head gasket.  
**CRANKCASE GASKETS**: Aftermarket gaskets are allowed providing they are the size and material as stock gaskets. Up to three- (3) crankcase gaskets are allowed.  
**BREATHER CHAMBER VALVE**: Two valve chamber gaskets are allowed.  
**INTAKE**: Two gaskets mandatory. Restrictor plate between two gaskets.
- 01.14** EXHAUST: Stock muffler. No extra holes may be drilled to change the directional plate if used. No alterations of any kind allowed to muffler. **Automatic disqualification.**
- 01.15** IGNITION: Briggs & Stratton factory stock coils are **MANDATORY** and must be utilized in an unaltered form. No slotting of mounting holes or machining of attaching bolts is permitted. Resistance from plug wire must be 2000 ohms **MINIMUM** and 5000 ohms **MAXIMUM** as run regardless of temperature factor. Spark plug connector must be of stock factory type. There must be a resistance from ground to plug wire. Coil must retard during tech.
- 01.16** PISTON/PIN/RINGS: Stock Briggs & Stratton or Weisco 3.5 or 5.0 unaltered piston and rings. To be compared against known stock items during tech.

RINGS: Three (3) rings are mandatory. Rings must be Briggs & Stratton or Weisco only. Excessive end gapping of rings not allowed. End gap with ring in the cylinder cannot exceed .120. Rings must conform to all listed factory specs and be of stock configuration.

**01.17** PORTS: Flashings may be removed. No grinding is allowed on underside of valve seat. No holes in ports allowed. Bump on right side of intake port must remain. No additional materials allowed to be placed in ports. Ports with excessive grinder marks for the purpose of resizing will be disqualified. Port size to be compared to known stock block. Ports may have a radius under seat.

**01.18** FUEL TANK: Stock, including the fuel cap. Fuel tank baffle, Briggs part # 555220

**01.19** SHROUDS & COVERS: Engine shrouds and covers must be intact and not modified.

**01.20** VALVES: Stock valves only. No stellite valves allowed. Must be one angle only on valves and seats. Intake 45 degree and exhaust 45 degree. Intake valve minimum diameter is .970. Intake seat inside diameter is .875. Exhaust valve minimum diameter is .840. Exhaust seat inside diameter is .740. Valves may not be polished or lightened. No knife edging of valve allowed. Minimum thickness of outside circumference from top of valve to face of valve is .025. Valve guides may be replaced as long as they remain in stock position. Stacking of guides permitted.

**01.21** VALVE SPRINGS/LIFTERS: Stock Briggs & Stratton valve springs and keepers are mandatory. Maximum spring length is 1.250. Maximum wire diameter is .086. allowed. Upper valve spring retainer allowed. Retainers to measure .020 or .050. Recessing upper valve chamber for valve spring retainer is permitted. Head of lifter must be a minimum of .780 diameter.

**01.22** SEATS: Intake and Exhaust seat height not to exceed 4.905 (+) or (-) .015.

### **MODIFIED DIVISION** **APPROVED MODIFICATIONS**

1. *Modified engines will use a red restrictor plate that measures .500 in size and is funneled.*
2. Any timing key is allowed or timing key may be removed.
3. Gear ratio will remain 6:1 or 72 teeth on drive sprocket and 12 teeth on the clutch. No other combinations allowed. This ratio will match any kart entering the modified class that will not meet specs to run in the stock class. Those karts would already have the 6:1 ratio as run in stock. Steel chain only, standard size will be #35, with a #40 or #41 as brought forth from the stock class for those karts not legal to participate in stock class. No other size allowed.

4. Any clutch of steel shoe or dry disc is allowed.
5. Chassis modifications must be presented in print to the tech steward with a written explanation for approval. Tech steward has the right to deny any or all requests.
6. An oil catch bottle is mandatory. All karts, all classes, will use an empty, clear plastic water bottle, 12 or 16 oz size, for a catch can. Nothing allowed inside bottle. Bottle will need to be vented to outside air for proper breather operation. This can be done by drilling a hole in the top of the bottle in addition to the hole for the drain tube/hose, usually placed in the plastic cap.
7. **FACTORY BRAKES NOT ALLOWED IN MODIFIED CLASS!**  
*Hydraulic applied disc brake only attached to drive axle.*
8. *Stock muffler* or any WKA (World Karting Association) muffler *may be used.*
9. *Total width of chassis not to exceed 41 inches.*
10. Tire sizes are either, 12 in. x 6 in. for karts not legal to compete in stock class and are entering the modified class, or a Maxxis brand tire with a size of 11.0 in. x 6.0 in. x 6.0 in. or a Dunlop 11.5 in. x 6.0 in. x 6.0 in. for the true modified karts.” No other tire size or brand tire is allowed at this time.
11. Front wheel bearing size is 1-3/8 in. O.D. x 5/8 in. I.D. Ceramic ball bearings, or ball bearings made from any material other than steel not allowed on front or rear.
12. Rear axle diameter not to exceed 1.25 in. O.D. and must be mfg. from steel or aluminum only. No composite materials allowed. A “live axle” can be used. This means the entire axle may rotate. However, only 1 tire/wheel may be driven. The other wheel/tire must free spin, meaning it must be disconnected so not to have power applied to it. Either left or right side may be driven, and the opposite side must spin freely.
13. Wheels for the modified karts can either be a 1piece or a 2piece design. If using a 2 piece wheel, you will need the Van-K “O” ring type seals, which consist of a flat metal washer with the bolt pattern holes pre-drilled and a rubber “O” ring type seal for each wheel. The Van-K part # is AP4658. The 2 piece wheels consist of each wheel half with a size of 6” in. dia. X 2 ½ inches deep, and normally you have to drill the hole for your valve stem in one half. Another optional size wheel half would be 6 in. dia. X 3.0 inches deep. For a 1 piece wheel, the approved size is 6 in.dia. x 6.0 in. wide, with a back spacing of 2.5 inches. For the front wheels you will usually need a wheel hub with bearing, usually 5/8 inch I.D. and for the rear wheels, you will normally need a 1 1/4inch rear wheel hub to attach to your 1 ¼ inch diameter rear axle. For all 4 wheels, it will be necessary to purchase the attaching bolts and mounting hardware, depending on the mfg. of the wheel and hub.

## SUGGESTED TOOLS/ITEMS FOR YOUR PIT CREW

1. Tire gauge
2. 1/2" closed end wrench
3. 7/16" socket wrench (chain guard)
4. 1/2" socket wrench (engine mounts)
5. #41 (stock) or #35 (modified) master links for the chain
6. Wheel chocks
7. 3 in 1 oil (chains may require lubrication after only a few miles-see owner's manual)

Any other tools/items such as air compressors, generators, jacks, etc. are your discretion.  
**NOTE:** Electricity will not be provided in either the pit or paddock areas.

## DRIVING SCHOOL

There will be mandatory driving schools for new teams and new drivers. This is to familiarize racing teams with safety regulations and course protocol (**see RULES OF THE ROAD and FLAGS**). Any drivers or pit crewmembers that *did not* race in previous years *must* attend one of these driving schools. Dates and location will be announced later.

## MANDATORY TEAM MEETING

There will be at least **one** Team Meeting at a location and date To Be Announced to review changes, procedures, and answer any questions; therefore a representative from each team **MUST** attend. **All team members are welcome to attend, however at least one representative from each team must be present. Roll call will be taken to insure that every team is represented.** This should eliminate any confusion with regard to how we will conduct the race.

**REMINDER:** A Representative from **each** team **must** attend this meeting.

**RACE FORMATS AND SCHEDULES WILL BE ANNOUNCED ONCE REGISTRATIONS HAVE BEEN COMPLETED. TEAMS WILL BE NOTIFIED IN ADVANCE.**

**OFFICIAL PROTEST FORM**

(This section to be completed by the protesting driver, entrant, or owner -then taken to the Chief Steward)

**(CIRCLE ONE)**

I, \_\_\_\_\_ **DRIVER/ENTRANT/OWNER** of car # \_\_\_\_\_ do hereby protest the driver/team of car# \_\_\_\_\_.

**CLASS** \_\_\_\_\_ **DRIVER** \_\_\_\_\_ or **the** decision/action of **OFFICIAL** \_\_\_\_\_.

I hereby charge violation of page # \_\_\_\_\_ paragraph \_\_\_\_\_ or section \_\_\_\_\_ of the competition or regulation, specifically:

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And have attached the \$ **25.00 PROTEST FEE**. Time filed \_\_\_\_\_

SIGNED \_\_\_\_\_  
(If tear-down is required, bond will be set by the SOM & agreed to by all before work begins)

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**THIS SECTION TO BE COMPLETED BY THE CHIEF STEWARD**

TIME RECIEVED \_\_\_\_\_ DATE \_\_\_\_\_ TRACK \_\_\_\_\_

FEE RECEIVED \$ \_\_\_\_\_ CHIEF STEWARD'S SIGNATURE \_\_\_\_\_

NOTES: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**OFFICIAL PROTEST FORM**

**TO BE COMPLETED BY PROTEST REVIEW CHAIRMAN**

PROTESTER NAME \_\_\_\_\_ CAR # \_\_\_\_\_

ADDRESS \_\_\_\_\_

PHONE # (H) (\_\_\_\_) \_\_\_\_\_ (W) (\_\_\_\_) \_\_\_\_\_

PROTESTEE NAME \_\_\_\_\_ CAR# \_\_\_\_\_

PHONE # (H) (\_\_\_\_) \_\_\_\_\_ (W) (\_\_\_\_) \_\_\_\_\_

TIME FILED \_\_\_\_\_ DATE \_\_\_ / \_\_\_ / \_\_\_ EVENT \_\_\_\_\_

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**DECISION** (CHECK ONE)

\_\_\_\_ UPHELD

\_\_\_\_ DISALLOWED

\_\_\_\_ WITHDRAWN

BASIS FOR DECISION

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**OFFICIAL PROTEST FORM**

**PARTIES NOTIFIED** (CHECK ONE)

\_\_\_\_ PROTESTER

\_\_\_\_ PROTESTEE

\_\_\_\_ T & S

\_\_\_\_ TECH

\_\_\_\_ OTHER

**(IF ANY OF THE PARTIES WERE NOTIFIED BY LETTER, ATTACH COPY OF LETTER)**

LIST NAME OF EACH SOM WHO SAT ON THIS COURT \_\_\_\_\_

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PENALTY IMPOSED \_\_\_\_\_

PROTEST FEE (CHECK ONE) \_\_\_\_ RETURNED TO PROTESTER \_\_\_\_ RETAINED

AMOUNT OF BOND: \$ \_\_\_\_\_ DISPOSITION OF BOND: \_\_\_\_\_

SPECIAL INSTRUCTIONS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**CHAIRMAN, SOM SIGNATURE** \_\_\_\_\_