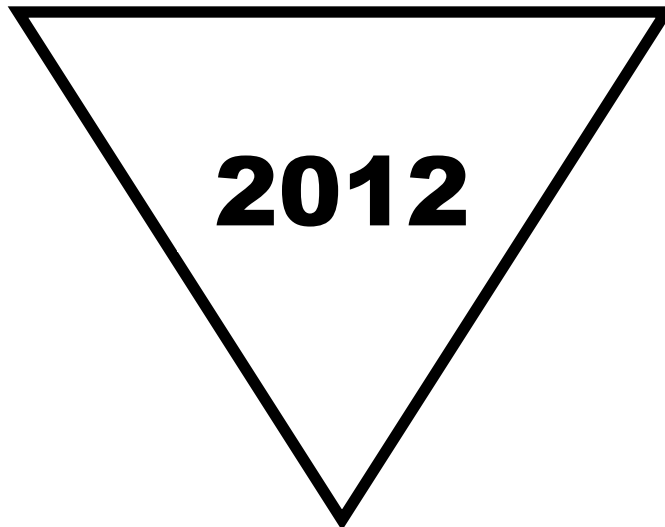


# **TRIANGLE SERIES**

**RADIO CONTROL PYLON CHAMPIONSHIP SERIES**

**FRESNO**

**SALINAS**



**MORGAN HILL**

**DIRECTED BY KEVIN NORRED & JOE DELATUER  
SUPPORTING CLUBS: FRESNO RADIO MODELERS, SALINAS AREA MODELERS &  
SANTA CLARA COUNTY MODEL AIRCRAFT SKYPARK**

2012 – 2013 TRIANGLE SERIES

# T-34 RACING

RACING RULES



Basics of the Class:

Stock World Models T-34 Mentor

Stock O.S. .46 Engine or Stock Thunder Tiger .46 Pro Engine

Gold & Silver Classes (Optional Bronze Novice Class if 4 or more Novice pilots are entered)

# World Models T-34 Mentor Aircraft

## Rules and Limitations

DATED MATERIAL: DECEMBER 3, 2011

All rules are to be followed as listed below. No changes or alterations to the rules will be allowed. Any alteration from these rules will result in disqualification.

The World Models T-34 Mentor racing event was designed as a two pylon-racing event that can be enjoyed by all sport pylon enthusiasts regardless of skill level. The class is intended for both entry-level pilots all the way to the advanced level pilots. The level of piloting skill will be divided into separate classes making the racing more competitive.

### AMA Racing Safety & Marking of Aircraft

- All aircraft must have name and AMA number located inside of aircraft and visible upon safety inspection of the aircraft. Failure can result in AMA safety code violation.
- AMA racing insurance / waivers requires all personal on the flight line to wear ANSI, DOT, NOCSAE, or SNELL approved hard hats or safety helmets within 275 feet of the centerline of the race course. This includes all pilots, crew members, spotters, callers and helpers. Any individual not in compliance of this will not be allowed on the flight line, within the staging areas or in the pits during the racing event. All pilots and team members are responsible for supplying their own hardhats or safety helmets. Each pilot can have one caller/spotter beyond the spectator line during the racing event per AMA regulations and guidelines. All pilots and crewmembers must sign an AMA release form releasing liability from any officials or associates of the racing series. All spectators must stay within the safety areas of the facility.
- It is recommended to have a 1" up to a 3" race number on the back of the pilot's hardhat to help race officials identify aircraft currently racing.
- Aircraft markings and/or color schemes are optional and not need be scale. Bright color schemes are encouraged and will allow easier identification for pylon judges and race officials on the starting line. If aircraft are not easily recognized, confusion with other aircraft may occur.

### Aircraft Requirements:

- The only aircraft allowed is the World Models T-34 Mentor ARF kit that is distributed by Airborne Models LLC. The wingspan size is 57-1/2" & wing area of 557 sq in.
- No kit modifications will be allowed to the structure internally and/or externally of the aircraft such as but not limited to the use of foam wings, clipped wings and airfoil modifications and/or lightning holes. Wing or Tail fairings are not allowed. Structural reinforcement modifications are allowed as long as the physical shape of the aircraft is not altered. The aircraft must be assembled as directed in the instructional booklet or as recommended per rules and guidelines. **Hardware such as metric screws and pushrods may be substituted and is recommended pending pilot's choice.**

- The following is allowed:
  - Engine, Stab and Wing incidence modifications will be allowed as long as the structure or outline of the plane has not been altered. Incidence modifications are only allowed as long as the structure of the plane is not modified.
  - Hidden compartments with-in the fuselage side to conceal switches or fueling fillers is allowed.
  - Sheeting of the Stab (tail) is allowed for structural strength. It is recommended to install the stab with the wood screw supplied with the kit and a form of adhesive along the meeting points of the fuselage. If Elevator stab is secured by adhesives, the wood screw is not required.
  - The center section of the wing may be reinforced with fiberglass or any composite material if desired for structural strength. The bottom of the wing where the fuselage meets cannot be filled in other than the plywood plate that is supplied for the wing bolts. No filler plates at the leading edge to fuselage or trailing edge to fuselage.
  - Landing gear provided in the kit must remain stock as it is supplied in the kit. You may tape/monokote over the rear landing gear wire that is recessed into the wing. No fairings, tape or any other form of material will be allowed on the exposed wire for the landing gear.
  - Aircraft may be re-covered in a personal color scheme and is encouraged for team identification, personal recognition or official identification. Control surfaces on stock and/or re-covered aircraft may be sealed using tape and/or a covering material such as vinyl tape, Ultra Cote, Monokote, or Toughlon. Hinge less control surfaces not allowed. Hinge type for moveable surfaces is open as long as the stock outline of the aircraft is not altered and gap tolerances remain stock.
  - Cowls may not be altered in shape and air ducts on bottom of cowl must remain open as supplied in the stock kit.
  - Dihedral of the wing must measure a minimum of  $\frac{1}{2}''$ . (This is measured by setting one half of the wing on a flat surface and measuring the other wing panel at the lowest part of the outside wing tip rib. Variances are up to the Contest Director to allow) There is no speed benefit to have more or less dihedral so stock is best.
  - Cockpit detail or pilots optional and are not required.
  - Canopies may be tinted, painted or clear.
  - Fastening of cowls, canopy, or hatches to aircraft airframe is optional. You may use any sort of hardware for mounting purposes including tape or screws.
  - Control Horns for moveable surfaces may be altered to any manufacturer of external hardware. No internal linkages allowed other than the ailerons using torque rods. In the event two servos are used in the wing, servos may be mounted internally into the outer wing panels with a control arm, linkage, and control horn exposed. Standard sized servos must be used. No micro or sub-standard sized servos allowed.

- Aircraft must weigh a minimum of 5lbs dry.

### Radio Requirements:

- Radio installation setup and hardware is as desired by the pilot but must meet all guidelines within the rules. Pushrods are open to any manufacturer or type as long as they are secure.
- Servos of a standard size only are allowed. No Micro or Mini /Compact servos are allowed. If dual servos are to be used in the wing or anywhere in the aircraft, standard size servos must be used.
- Minimum of 500Mah 4 or 5 cell battery pack is required. Batteries may be Nickel Metal, Nicad, Lipo w/ regulators or Life ( A123 Lithium iron Phosphate). It is suggested to have an outboard source to monitor battery level throughout the race day without disassembling aircraft. Batteries with less than 750Mah batteries will need to be charged throughout race.
- Hardware such as pushrods and linkages may be replaced to standard American Hardware. Slip type linkages with setscrew such as supplied with the kit **will not be permitted** on the Elevator or Ailerons. “Z” bends or solder linkages are best suitable for the major control surfaces. All control linkages must have keepers.
- If a radio is setup for “Fail-safe” on PCM or any other radio capable of “Fail-Safe”, it is recommended to have throttle cut to idle or kill in the event aircraft system goes into “Fail Safe”.
- Receiver used must be for Gas Powered Aircraft. Small receivers such as those used for park flyers will not be permitted, as they do not allow the range needed in a pylon-racing event.

### Engine Requirements:

- The only two engines allowed are the O.S. 46AX stock engine with the stock issued Power box mufflers (couple various mufflers) and Thunder Tiger Pro.46 Engines with the stock muffler. All engines must remain stock and are subject to random inspection. No other models or versions of the O.S. engine and/or Thunder Tiger will be allowed. Engines must remain stock out of the box with the exclusions listed below. No removing or adding material other than as noted below. No Rod polishing, sanding, and/or crankcase volume adjustments with epoxies, composite material or metal material is allowed. No combining parts from the O.S. to/from the Thunder Tiger.
- For O.S. Engines, The O.S. stock AX Power Box muffler is the only exhaust allowed. There are various versions of the PowerBox, but no performance enhancements are gained from one to the other. The internal muffler baffles are optional and may be removed. Baffles left in muffler may not be modified or drilled. The only modifications allowed to the muffler are the exhaust exit may be drilled out (**Bronze & Silver classes mufflers must remain stock – no drilling out**). If the muffler exit breaks or comes apart, the engine will be deemed illegal and the pilot disqualified. Mufflers may be welded and/or the connecting screw for the muffler may be changed to another type of fastener such as all-thread wire. *Mufflers may be wire mounted to engine to eliminate*

**loss of mufflers.** No muffler deflectors or extensions allowed. You may use a tie-wrap to fasten the muffler halves together incase the internal screw breaks.

- For Thunder Tiger engines, the stock muffler is the only exhaust allowed. The internal muffler baffles are optional and may be removed. Baffles left in muffler may not be modified or drilled. The only modifications allowed to the muffler are the exhaust exit may be drilled out ( no performance gain). **(Bronze & Silver classes mufflers must remain stock – no drilling out)**. If the muffler exit breaks or comes apart, the engine will be deemed illegal and the pilot disqualified. Mufflers may be welded and/or the connecting screw for the muffler may be changed to another type of fastener such as all-thread wire. **Mufflers may be wire mounted to engine to eliminate loss of mufflers.** No muffler deflectors or extensions allowed. You may use a tie-wrap to fasten the muffler halves together incase the internal screw breaks.
- Head shims or sleeve shims must be the stock shims supplied in the engine and may not be altered. The engine must remain with the stock clearance. No other shim or material may be used.
- Engines may **only** be mounted upright per instructional booklet. Engines may not be mounted sideways or inverted. Mounting hardware used may be changed out. **Motor mounts must be stock and may not be switched out for a commercial mount.** The Stock nose gear wire must be used.
- No servo or electronic fuel mixtures allowed. No check valves will be allowed. Fuel filters will be allowed as long as they do not restrict fuel in any direction. A fueling valve is allowed on a third line as needed.
- Standard stock muffler pressure only will be allowed. No crankcase pressure or other pressure sources will be allowed. No Restrictors may be used.
- Stock needle valve assembly may be mounted to aircraft firewall for ease of adjustment. Needle valve and assembly must be stock. Bracket used may be changed but must be similar to stock bracket. All fuel inlet holes must remain stock size and not drilled out or altered. Needle Valve must remain stock and not altered in shape or tapered.
- No shimming or altering of the crank or its timing within the motor. Crank must remain stock.
- Engine Bearings may be changed using any replacement O.S. stock Bearing, Thunder Tiger Bearing or Boca Steel Bearing or any other non-ceramic bearing.
- Glow Plug of any type or manufacturer that is commercially available may be used. All engines must use the Glow plug and compression washer supplied with the plug. Any plug that was produced at any one time by K & B, O.S., McCoy, Fox, which may no longer be available will be legal.
- Motors at any time may be randomly checked by Contest Director or appointed individuals with **no exceptions allowed**. Any engine modification will result in disqualification for one year from any of the Triangle Series Races. Any pilot not allowing engine teardowns will be deemed illegal. All engines will be disassembled by the pilot and re-assembled by the pilot. Engine inspections will be done at the conclusion of the pilots last race of the day.

### Misc. Requirements:

- Spinners of any size are recommended but not required. Spinners used must be Plastic, Brass or Aluminum. No Flywheel spinners. It is recommended to use a single bolt spinner in the case a prop is spun loose and quick installation is needed. Spinners may be balanced if desired. Recommended spinner size is 68mm to 70mm.
- Wheels supplied in kit must be used or replacement wheels of similar size. Replacement wheels must be of equal size and width as stock wheels. No racing wheels will be allowed. Wheels from Dubro, Sullivan or World Models allowed. Wheel size of stock kit is approx. 2" or 50mm. Larger size is ok. Wheels must be 1/2" constant thickness minimum. (25.4mm = 1")
- Gas tanks are open to any manufacturer. No bladder tanks or pressurized systems allowed. Check Valves not allowed. Remote needle valves not allowed.

Definition: A Pressurized fuel system is a system other than a simple, continuously open conduit between the fuel tank and the muffler, by which the fuel is delivered to the carburetor or venturi at a greater than ambient atmospheric pressure. A fuel tank containing a flexible bag that prevents bubbling or foaming of the fuel but does not generate pressure is not a pressurized fuel system

- At a fuel supplied Race, aircraft will fill and de-fill using race supplied pumps and fuel. Standard fuel pumps will be supplied at the races. No Oil additives or foreign liquid may be added to the engine during the event.
- Propellers

**T-34 Gold Class** - Any wood, Carbon or Composite prop that is two bladed will be allowed only if commercially available for under \$10.00 at any time. No single or three bladed props allowed. Props can be modified in shape or balance but must have two equal blades. Wood Props no longer available can be used as long as they were once available for under \$10.00.

**T-34 Silver & Bronze Class** – **APC 10x5 prop only.** Props must be stock and can be balanced. If a prop is damaged, shortened at all, or altered, prop must be replaced with a new propeller. Flashing of propellers only may be removed but prop may not be altered at all.

**Bronze Class will only be used if 4 or more Novices have registered and there are 4 or more registered in Silver class. Otherwise the novices will run in the Silver class.**

- Fuel will be supplied at all Triangle Series Races. Type and Manufacturer will be listed on website prior to race. Contest Director can be contacted as well. It is recommended to use a 15% / 18% mixture
- Back-up aircraft are allowed but must have the same race number and same frequency as the primary aircraft. Back-up aircraft may be used only if the primary aircraft has been severely damaged or has been deemed unsafe and can't be fixed before the next heat. It is up to the Contest Director to allow back-up aircraft to be entered in replacement of primary aircraft under different race numbers and/or frequency. There are no additional entrance fees to have a back-up aircraft. It is not permitted to allow the original aircraft entered and flown to return to race once the backup aircraft has flown a heat. Race officials have the right to allow primary aircraft back if desired. Parts from back-up aircraft may be

interchanged with primary aircraft if needed. \* **It is up to the CD to make the overall decision if other circumstances may apply.**

- Pilots may have another person land their aircraft if needed. This is a decision for safety of pilots and aircraft.
- No timing devices, Hand held radios or any other electronic device will be allowed on the race course during the event that will help aide in the pilot's finish. GPS systems not allowed.
- The Contest Director has all rights to challenge any and all entries of aircraft in question to legality at no expense or at any time during the event. If a contestant or pilot wishes to challenge another entrant, there will be a \$20 protest fee, which will go to the pilot challenged if deemed legal. If the pilot is deemed illegal, the person filing the protest gets his/her money back. A pilot deemed illegal would result in disqualification. If the races have not started, the pilot may change to make aircraft legal. Major violation will result in termination from all races for one year. Only contestants signed up may challenge another pilot's aircraft.
- Three classes will be offered; Gold, Silver & Bronze (optional). The classes are offered and separated to make sure pilots of like skill are grouped together.
  1. **Bronze class** (Novice) is intended for pilots with minimal racing skills, who are learning the basics of R/C Pylon and have not participated in more than 4 organized pylon racing events of any type. Pilots who have displayed capabilities of that beyond the Novice class will be asked to move up into Silver class if skill level exceeds class expectations. Class will only be used if 4 or more Novices have registered. **No Championship Points or Prizes given for Bronze.** Class limitations are that all aircraft must run a STOCK 10 X 5 APC prop and the engine/muffler must remain stock with no modifications, with the exception of the removal of the baffle. Mufflers may **not** be drilled out
  2. **Silver Class** is intended for pilots with intermediate /advanced skill levels and who have more experience in racing or flying than a Novice Pilot. Class limitations are that all aircraft must run a STOCK 10 X 5 APC prop and the engine/muffler must remain stock with no modifications, with the exception of the removal of the baffle. Mufflers may **not** be drilled out. Only points earned within the Silver Class can be used in the Silver Points Championship.
  3. **Gold Class** is for pilots who have demonstrated their intermediate/advanced skills in R/C pylon over the years and/or pilots who have intermediate/ advanced flying skills. Pilots participating in Gold can use any prop allowed under the rules of the class and modify the muffler as allowed in the engine / muffler rules. Only points earned within the Gold class can be used in the Gold Points Championship.



# RACE NUMBER DIAGRAM

## FUSELAGE NUMBERS-OPTION 1

3" NUMBERS ON FUSELAGE SIDE BETWEEN TRAILING EDGE OF WING AND LEADING EDGE OF TAIL ( BOTH SIDES )

## FUSELAGE NUMBERS-OPTION 2

3" NUMBERS ON RUDDER ( BOTH SIDES )

## BOTTOM OF WING NUMBERS

7" NUMBERS BOTTOM WING, HIGH OR LOW PANEL. MAKE SURE THAT FUSE IS POINTED IN SAME DIRECTION AS DRAWING.

