TORC SERIES
COMBINED CLASS RULES (CCR)
PRO & SPORTSMAN DIVISIONS

The Combined Class Rules will apply to all PRO and Sportsman Divisions. Any modification of or addition to the CCR is prohibited, unless changed by the proper method of notification by the series Officials. Any deviation from the CCR will result in disqualification from the event or the series. **Individual class Competition Rules may amend or supercede Combined Class Rules.**

1. APPROVED MAKES OF COMPETITION

The following truck manufacturers are considered eligible and approved for competition in TORC Series race events: Chevrolet, Toyota, Mazda, Jeep, Ford, Nissan, Dodge

2. ROLL BARS/ROLL CAGE

A. Round steel seamless aircraft 4130 or D.O.M. tubing is compulsory for the basic roll cage construction, and must be TORC Series approved. Aluminum and/or other composite soft metals are not allowable. All roll cage construction must be welded.

B. Minimum tubing diameter and thickness for off road racing vehicles weighing up to 3,000 pounds – 1 1/2 inch diameter by .120 wall thickness.

C. Minimum tubing diameter and thickness for off road racing vehicles weighing up to 5,000 pounds – 1 3/4 inch diameter by .120 wall thickness.

D. Minimum tubing diameter and thickness for off road racing vehicles weighing over 5,000 pounds – 2 inch diameter by .120 wall thickness.

E. Minimum tube diameter for all buggy divisions is 1 1/2 one and a half inch by .090 walls.

F. Gussets are required on all intersections in the driving compartment as well as the bars that attach to the rear of the main roll bar behind the driver. Gussets must be of the same material and thickness as the roll cage and be within 3 inches of intersection.

G. All tubing, welds, gussets and roll cage construction must be approved by TORC Series.

H. All vehicles must have three horizontal door bars per side.

I. All vehicle roll bar and protective caging material must meet or exceed above material specifications. This includes all door bars, diagonals and bracing.

J. Diagonals or similar bracing is mandatory for all vehicle roof openings as well as front and rear roll bar hoops.

K. ALL PRO and Sportsman truck classes must have a 24 x 20 inch .125 thick aluminum or .063 steel plate securely mounted on the outside of the driver side door bars.

L. A Basic roll cage configuration will be outlined in Section 20, DIAGRAMS.

M. All roll bar tubes and roll bars in close proximity to the driver's helmet must be padded with a securely attached high impact padding meeting SFI Specification 45.1.

3. TRACK WIDTH REQUIREMENTS

A. Vehicles cannot exceed a maximum track width as stated in vehicle division rules.

B. Maximum track width will be measured from a ride height of 10 inches with all four tires inflated to 20 PSI.

C. All measurements will be performed with TORC Series instruments or gauges.

4. WHEELBASE REQUIREMENTS

A. All vehicles must compete with wheel base limitations as stated in vehicle division rules.

B. Wheelbase will be measured on one side, from the center of the front wheel to the center of the rear wheel on the same side. Maximum allowable tolerance cannot exceed one-half (½) inch plus or minus on the other side.

C. Wheelbase will be measured from a ride height of 10 inches will all four tires inflated to 20 PSI.

D. All measurements will be performed with TORC Series instruments or gauges.

5. METHOD OF MEASUREMENTS

A. Leaf springs - center of rear eye to center of front eye, measuring circumference.

B. Wheel travel - Front - measured on a vertical plane from the center point on the end of the spindle. Rear - measured on a vertical plane from the center of the rear axle. All measurement will be from stop to stop with spring removed.

C. TORC Series/USAC Technical Director determines all measurements and center points.

6. STEERING COMPONENTS

A. TORC Series/USAC Technical Director must approve any universal joints in steering shaft.

B. Hydraulic power steering is permitted.

C. It is recommended that the steering wheel be removable by means of a quick release mechanism meeting SFI Specification 42.1.

7. BRAKES AND BRAKE COOLING

A. Brakes must be operational on all four wheels at all times. All brake components must be TORC Series 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.

D. Brake lights are ~~mandatory~~ **optional for the PRO Classes**.

E. **Sportsman Class vehicles must have at least one brake light** a minimum of 3 inches in diameter and easily viewed from the rear of the race vehicle.

8. SHOCKS

A. All vehicles must have at least one working shock on each wheel position. **Shocks must be hydraulic design without electrical or magnetic assistance.**

B. Shocks cannot be adjusted while vehicle is in motion.

C. Heating or cooling liquids or chemicals in shocks is not allowed.

D. Shocks may have external bypass tubes and reservoir cans.

E. TORC Series/USAC Technical Director must approve all team-manufactured shocks.

F. Remote mounted shocks are not allowed. **Each shock must operate independently at each wheel position.**

9. WEIGHT OF VEHICLE

A. The driver will be included in vehicle minimum weight.

B. Vehicles can be courtesy weighed prior to competition.

C. Added weight must be in block form of no less than 10-pound blocks (no liquid of any type except fuel in fuel cell, pellets or other granulated weight). Added weight must be securely bolted in place. Dislodged weight cannot be returned to vehicle for weighing at end of race. TORC Series Officials must approve all weight material.

D. All block ballast weight must be identified with vehicle number and painted a bright fluorescent color.

E. Two additional holes must be drilled in the ballast block and attachment point. Weight can be sealed at the discretion of the TORC Series Technical Director.

F. Weight shifting devices of any kind are not allowed.

G. Complete set of body panels must be presented to TORC Series Technical Director for weighing at or prior to first race of season. Excessive loss of body panels during competition will result in crew chief removing all body panels from race vehicle, adding weight of total panels.

H. Race vehicle total weight must be declared on event entry form.

I. All vehicles, at the discretion of the TORC Series Technical Director, will be weighed after competition. Failure to present a vehicle will result in disqualification.

10. VEHICLE BODIES

Vehicle bodies must meet the following requirements.

A. Standard production or after-market approved bodies may compete. All bodies must be of volume production models as selected and approved by TORC Series.

B. Vehicles must be neat appearing.

C. All vehicles must have complete bodies, cabs, hoods, doors, fenders, grills and roof, in top quality condition, in standard location, maintaining make and model body lines. All body parts and box covers must be attached, preventing loss of body panels and covers during competition. TORC Series/USAC Officials will have the final judgment regarding lines, method of attachment and appearance.

D. Original dimensions of all bodies must remain as manufactured, except changes that may be necessary for tire clearance. All changes for tire clearance must be approved by TORC Series.

E. All stock production glass must be removed from race vehicles.

F. All operational doors must be fastened in a manner acceptable to TORC Series/USAC Officials.

G. All body components must be installed in their standard location, plus or minus 1 inch, as referenced by a production model vehicle.

H. Complete bodies must be attached at the start of competition, pre-run or any other on track activities. Bodies must be attached in such a fashion as not to create a pointed or sharp extrusion when panels are removed. TORC Series mandates a loop body mounting bracket construction.

I. All vehicles must be left side steer only. Steering wheel, seat and pedals must be in approximate stock location.

J. **For fan and sponsor recognition, all vehicles must display the driver's name across the roof at the windshield line. The series sponsor must be displayed on the hood/cowl at the windshield line.**

11. HOODS AND ROOFS

TORC Series Technical Director must approve hood and roof attachment method.

A. The hood must be locked down with six positive pin fasteners equipped with clip cables. Four must be evenly spaced across the front of the hood and two placed in the rear corners of the hood.

B. All vehicles will have a roof.

C. Roofs must be properly attached to the cage of the vehicle.

D. In all PRO and Sportsman Divisions, aluminum or steel sheeting must be firmly attached to the top of the roll cage above driver's head. Minimum thickness of attached sheeting is .075 aluminum, 16ga steel.

12. BED AND TAILGATE

TORC Series Technical Director must approve all bed panel attachment procedures.

A. Allowable, external box panels only. The panels must be attached as not to come off during competition.

B. Vehicle production lines must be maintained.

C. Standard production or after-market box panels may be used.

D. Tonneau covers may be used.

E. PRO 4x4 and PRO 2WD trucks may add a wing to the rear of the bed a maximum of 4 inches high and 60 inches in width. PRO LIGHT trucks may add a wing 4 inches high and 55 inches in width.

13. BUMPERS

TORC Series/USAC Technical Director must approve all bumpers.

A. All vehicles must have safe bumpers front and rear. Bumpers must have looped corners.

B. Front bumper cannot be extended more than 12 inches beyond grille and no wider than 2 inches inside the inner sidewall of the front tire when straight.

C. Nerf bars and rear bumpers may not extend more than 2 inches beyond the outside front to rear tire line.

D. Rookie drivers must display a yellow painted rear bumper.

E. Use of angle iron on any bumper, nerf bar or other outside protection is illegal.

F. Use of angle iron on rear bumpers of buggies is allowed.

14. MUD FLAPS

A. Rear mud flaps are required on all vehicles in all classes.

B. Mud flaps be at least the width of the tire and touch the ground when the vehicle is stationary.

C. Mud flaps must be made of a semi-rigid, non-brittle material.

D. Rear mud flaps must be attached to the rear bumper or a non pivoting body brace.

15. ROCK SCREENS

A. All vehicles are required to have acceptable rock screen securely attached to the vehicle in front of the driver.

B. Rock screens and their mounting is subject to the approval of TORC/USAC Officials.

16. ENGINES

A. ~~All engine blocks must be a product of the manufacturer of the make and model of the vehicle being used in competition and readily available to the racing public or any competitor~~. **Engine blocks and cylinder heads must adhere to the same basic design parameters as produced by the manufacturer of the vehicle being used.**

B. ~~All engine blocks must have like manufacturer part numbers, as a product of the manufacturer fifteen days prior to the start of the season.~~

C. Cubic inch of race vehicle motor must be declared at time of event registration.

D. Engines are subject to inspection by TORC Series/USAC Technical Director at any time.

E. TORC Series/USAC Technical Director's primary method of cubic inch measurement is the "P&G Cubic Inch Tester".

F. At the discretion of TORC/USAC Series Technical Director, engine displacement can be measured conventionally by the removal of one or both cylinder heads.

G. Engines may be sealed. If seal is broken, TORC Series Technical Director will require engine cubic inch verification by the approved TORC Series measurement method.

H. If requested, engines must be pumped and sealed by TORC Series/USAC Officials before entering into competition.

I. All competitor race vehicle engines must be capable of being sealed. TORC Series suggests that competitor drill the cap on one head bolt and the cap on one intake manifold bolt and two adjacent oil pan bolts for use in sealing engine. TORC Series/USAC Technical Director is the only individual authorized to seal any competitor's engine.

J. Sealed engines may be pumped at the discretion of the TORC Series/USAC Technical Director.

17. DIP STICKS

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

18. OIL COOLERS

All oil coolers and their installation must be approved by TORC Series.

A. Engine and transmission oil to air or and oil to water heat exchangers are permitted.

B. Cooling fans are permitted.

19. ENGINE COOLING SYSTEMS

Engine cooling systems must be accepted and approved by TORC Series.

A. No icing or refrigerant chemicals may be used in or near the engine compartment or on the vehicle.

B. Impellers of the water pump may be altered.

C. Electrical engine cooling fans are optional.

D. Installation, location and type of electrical cooling fan must be acceptable to TORC Series.

20. CARBURETOR RESTRICTOR PLATES

A. Carburetor restrictor plate must be used when required by TORC Series.

B. All restrictor plates must be purchased from TORC Series and cannot be modified in any way.

C. Devices designed to increase or re-direct airflow between the carburetor and the intake manifold are not allowed. Vehicles must use open plenum or straight bore design spacer with standard gaskets only.

D. Carburetor chokes are not considered to be restrictor plates.

21. AIR INTAKE AND FILTERS

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/oxygen containing compounds.

B. Only naturally aspirated engines may compete in TORC Series events.

~~22. FUEL INJECTION OR SUPERCHARGER~~

~~**A**. All fuel injection systems must be presented to TORC Series Technical Director for approval a minimum of 30 days prior to the first race. All software and available information must be submitted to TORC Series Technical Director. Any sensor may be used but their purpose, number and location must be submitted to TORC Series technical Official for approval. Any change of purpose, number or location must be submitted to TORC Series Technical Official for approval. TORC Series Technical reserves the right to obtain a download at any time. Engine management systems combined with data collection will be considered engine management systems. All injection systems must be manufactured in quantities of 1,000 or more and available through normal dealer channels.~~

~~**B**. Only naturally aspirated engines may compete in TORC Series events.~~

23. ENGINE EXHAUST SYSTEMS

A. Exhaust mufflers are required on all exhaust systems except for 1600 and 1600 Light Buggy divisions.

B. Muffler must meet a maximum decibel of one hundred (100) as measured 50' from trackside.

C. Collector pipes must be attached to headers in a secure manner.

D. Exhaust pipes must extend past driver compartment to the outer edge of the vehicle or to the rear of the vehicle.

E. All exhaust must discharge downward or outward.

F. Exhaust heat shields are permitted.

G. Exhaust pipes that enter the cab of the vehicle must have a protective heat shield.

24. ENGINE AND VEHICLE ELECTRICAL SYSTEM

All ignition systems must be approved by TORC Series.

A. No computerized systems are permitted, unless TORC Series Tech approved.

B. Any make or brand of spark plug may be used.

C. All vehicles must have a working alternator/generator system.

D. All vehicles must have a self-starter in working condition. Vehicles must be capable of starting on their own power. After race is underway, vehicles may be started by hand pushing on pit road only.

E. All electrical switches must be located on the dash panel. A master switch that will shut-off all electrical power and the engine must be so labeled and located on the left dash panel. The master on/off switch must have a red circle around the switch, making the switch easily identifiable.

F. Data collection is not allowed except engine management systems combined with data collection will be considered engine management systems. **Only engine data may be collected.**

25. ELECTRICAL ACCESSORIES

A. At the request of television, certain vehicles may compete with telemetry systems, as so installed by the TORC Series television production network requesting such information.

B. Vehicles cannot carry on board computers, micro-controllers, processors, recording devices, electronic memory chips, or traction control devices. However, digital read-out gauges (digital dash logger) is allowed in all classes. No interaction with vehicle other than power train, temperatures and pressures. No transmitting of data is allowed.

C. The minimum penalty for the use of traction control devices will result in a DQ from the event as well as forfeiture of all driver and manufacturer points to date.

26. GAUGES <u>SEE GCR 24. & 25</u>

~~Analog type gauges only. No LED gauges.~~

27. FUEL SPECIFICATIONS

A. Fuel shall be automotive gasoline only.

B. Gasoline shall not be blended with alcohols, ethers, or other oxygenates, and it shall not be blended with aniline or its derivatives, nitrous compounds or their nitrogen/oxygen containing compounds.

C. Cooling of the fuel by any means is not permitted during competition.

D. In the event an "Official Fuel" is named, TORC Series will sample the actual fuel provided at the track by the fuel supplier and that sample will become the benchmark from which all competitors samples will be judged.

E. TORC Series has the right to sample a competitor's fuel at anytime the vehicle is entered in a TORC Series event. All samples will be impounded for observation and/or testing by TORC Series or outside laboratories at TORC Series discretion.

F. No nitrous oxide.

G. If TORC Series/USAC Officials suspect a masking agent in the 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 points and/or suspension.

28. FUEL CELL AND SYSTEMS

All fuel cells must be TORC Series approved. .

A. TORC Series will reject any previously approved fuel cell, which appears to be defective, damaged, or not in proper condition.

B. No pressure systems will be allowed. Any concealed or non-concealed pressure type containers, feed lines or actuating mechanisms will not be permitted, even if inoperable.

C. 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 ~~AC Delco part number 25036938~~. **<u>Carquest part number 53-33582</u>**. The sending unit receives power from the ground.

D. The use of a commercially manufactured fuel cell is mandatory.

E. No material other than standard foam as provided by the fuel cell manufacturer is permitted.

F. 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.

G. Fuel cells will become obsolete five years after date of manufacture and must be replaced.

H. All fuel cell fillers must have check valves installed. All fuel cells must have a vent system that includes a one-way valve is installed and routed correctly. See illustration in diagram section

I. 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.

J. The fuel cell cannot be vented into the driver or engine compartment of any vehicle.

K. The fuel cell, in all trucks, must be located behind the vehicle cab.

L. Fuel cells must be enclosed in a metal outer shell.

29. BELL HOUSINGS

A. Scatter shield of not less that 1/4 inch must be installed over flywheel, clutch or torque converter and transfer case area. Scatter shield must be approved by TORC Series.

B. Location of all shields must be approved by TORC Series.

C. Engine crankshafts must be connected to the transmission input shaft via a conventional clutch assembly or vane type torque converter.

D. Clutch assemblies are limited to a maximum three-clutch disc.

30. TRANSMISSIONS

The TORC Series/USAC Technical Director must approve all transmissions.

~~**A**. Transmissions must be standard production, cataloged and available through regular dealer channels.~~

B. All forward gears and reverse gears must be in working order.

C. Installed in stock order, engine to transmission to differential via a drive shaft, engine must be located in front of vehicle.

D. Buggy drivelines may be in any configuration.

31. DRIVE SHAFT

One 360-degree solid steel bracket, no less than 2 inches wide and 1/4 inch thick, must be placed around each drive shaft.

32. REAR AXLE / DIFFERENTIAL

A. Rear axle ring and pinion may be of any gear ratio.

B. Quick-change rear ends are not allowed.

C. Only steel axles permitted.

D. Independent rear suspension is not allowable.

E. The rear end assembly must be in stock location, as approved by TORC Series Technical Director.

F. Rear differential must be spool type only, **The differential/spool/axle assembly must not allow one wheel to turn independently of the other, either in a forward or backwards rotation.**

G. Rear differential must have a minimum of 1 1/2 inch inspection bung or plate placed in such a manner that TORC Series Tech can see and identify spool. If inspection area does not exist, crew chief will remove differential for TORC Series Tech inspection.

33. TIRES

A. Only one tire per axle wheel position is permitted.

B. Class PRO 2WD and PRO 4X4 will be allowed to use either D.O.T. or "project tires". The maximum tire size will be 35 x 12.50/17. Minimum air pressure at the starting line will be 13.0 psi. **Maximum tread width is 10.20"**. **The maximum tread width will be measured from the outermost edges of the tread block on a new tire. If after competition the material used to support the sides of the tread block enters the tread width, allowances will be made providing the design is not intended to circumvent the rule.**

Maximum section width is 13.20". **Section width will include any side blocks including staggered side blocks. Maximum diameter is 35.0".** All measurements will be taken on a race ready wheel at 13.0 psi. Maximum wheel size is 10.0" x 15", 10.0" x 16" or 9.0" x 17". Minimum wheel backspacing will be 3.75".

All inspections will be with TORC/USAC "Go-No-Go" gauges. Race vehicles may be measured pre or post race.

All other classes must use D.O.T. tires. Sizes are mandated in each class's general rules.

C. TORC Series definition of the term D.O.T. is as follows.

1. Must meet all D.O.T. guidelines and tests and be stamped accordingly.

2. Must be part of a full line of like tires available through retail dealers.

3. Must be readily available to the general public in quantity if requested.

4. Model of tire must be offered in multiple sizes and conform in size with industry standards.

5. Retail pricing must be competitive with other manufacturers of like tires.

6. Manufacturers wishing to compete in a D.O.T. Class must submit, no later than 60 days in advance of the first competition:

a. Size or sizes of tires intending to use

b. Design measurements and weight of tire

c. Target design durameter of tire
d. Digital picture of tread area as molded
e. Sample catalog, listing intended tire
f. List of retail distributors where tire is available.

"One-off" or limited run tires will not be allowed. The maximum penalty for not conforming to these rules will result in a DQ from the race as well as forfeiture of all driver and tire manufacturer points.

34. WHEELS / LUG NUTS / BEAD LOCKS

A. All wheels must be in good condition.

B. Lug nut must be open ended and of proper size.

C. Studs must extend a maximum of two full threads past the end of the lug nut.

D. If bead lock opening is more than 8 inches diameter, wheel studs may be no closer than 1-1/2 inch from the outer most face of bead lock. Studs ends must be rounded.

E. Cut out for valve stem opening must be radiused. Cut out means any removal of lock that opens the inner circle edge.

F. Cut out for valve stem opening must be capped. Cut out means any removal of lock that opens the inner circle edge.

G. No snap clip **or dzus** on wheel cover allowed.

H. All Professional class trucks must have recessed bead lock bolts.

35. NUMBERING / MARKING / IDENTIFICATION

All vehicle numbering is subject to approval of and assigned by TORC Series

A. Single digit numbers can be used in PRO Divisions. Division identification must be indicated in the lower right hand corner of the number plates. (Example: a PRO 4x4 Division vehicle with the number of 1 must place, in the lower right hand corner of the number plate, P-4. This would indicate the vehicle number plus which division the vehicle competed in.)

B. Vehicle number and division must be placed on the upper left-hand corner of the windshield area. Number must be a minimum of 3 inches in height and easily visible by track crew, announcing tower, timing staff.

C. All vehicle numbers must be solid black on a white background and must allow prompt identification by TORC Series/USAC Officials at all times.

D. Numbers must have 1 inch of space between them.

E. All numbers must have a minimum height of 8 inches, and be a minimum of 1 1/2 inch wide. Division identification must be 4 inches high and 1 inch wide.

F. Minimum number plate size is 10 inches high by 14 inches long.

G. Numbers must be located in the following positions:

1. Rear of the vehicle facing rearward.

2. One number on each side high and close to the back of the roof.

3. All numbers must be mounted in such a way to stay clean and unobstructed.

H. Foil or reflective numbers are not permitted.

I. TORC Series/USAC Officials may require a competitor to use a different number to avoid confusion or duplication at a race. In the event that a vehicle number is not visible from timing and scoring, the competitor will not be scored. It is the competitor's responsibility to make sure his/her vehicle number is visible during all race conditions.

J. Advertising on race vehicles must be in good taste.

K. Contracted decals, advertising or other identification may not be placed on the rear quarter of the box. Stated area is reserved for advertising or identification of contingency program, series, or other such special awards decals, advertising or identification. Any and all decals placed in the stated area by TORC Series will result in financial gain for series drivers.

L. Competitor will have option of use of special award or contingency decals. Non-participation will disqualify competitor from sharing awards or prizes from special award or contingency sponsor.

M. All TORC Series competitors must have pit identification boards. Pit identification board must show team name, driver's name, and vehicle number. Pit identification board must be displayed at front of pitting area and be a minimum of 24 inches wide by 18 inches high.

N. TORC Series may require the use of specific TORC Series sponsor decals.

O. Team vehicles with the same paint and colors must have distinguishing markings of some kind.

36. ELECTRONIC TIMING / SCORING SEE GENERAL RULES, 9.TIMING & SCORING, C.

A. A Westhold remote timing and scoring device must be used.

B. All race teams must purchase a transponder from TORC Series. Transponders will be available at all events.

C. Transponders must be installed by each team according to TORC Series specs. Each vehicle must have its own dedicated transponder unit. Transponder units can not be shared.

D. Transponders must be working for the duration of practice as well as the race.

37. RADIOS

A. Radios must be of two-way voice communication type only. Each race team is responsible for meeting FCC requirements and regulations.

B. Radios must operate independently of vehicles electrical system.

C. Radio communication between team drivers is not permitted.

D. All radio frequencies must be approved and reported to TORC Series prior to their use.

E. No scanning type radios that can transmit voice or other communicative noise will be allowed. Such devices when detected will be confiscated by TORC Series.

F. All race vehicle radio communication systems must be approved by TORC Series.

G. A spotter and radio communication is mandatory for all Professional classes.

H. **PRO RACE TEAMS- Mandatory Radio Upgrade**

USAC has developed a new one-way radio communication system required for the TORC Series launching in 2009. Race team communication systems for spotters can still be used, as the USAC radio can be placed in- line between the team radio and driver earpiece inside the race vehicle. USAC Race Control communications will suppress team communications by 20% when necessary for safety conditions, or for driver line-up instructions, etc.

SPORTSMAN RACE TEAMS are encouraged to purchase this radio upgrade for their spotters.