



## **CVR TSD RALLIES - THE VERY BASICS**

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### **TSD: TIME-SPEED-DISTANCE, THE ART OF STAYING ON TIME**

TSD rallying is NOT a race. The object is to go the AVERAGE SPEED between each set of instructions.

### **CHASING ZERO - STAYING ON TIME**

If this isn't a race, then what is TSD rallying?

Your team will consist of a driver and a navigator. You will receive a set of route instructions that contain distances and the AVERAGE speed you must travel at. The course will mainly be on scenic back roads (other than the odometer check typically).

Driving a course isn't as easy as just going down the road and setting the cruise control. Traffic, stops, and other normal road issues are what can cause you to fall behind, or go too fast if it is clear and you don't pay attention to your speed.

### **CHECKPOINTS**

The goal is to arrive at a check point in perfect time. Some checkpoints will be marked and some are not. When you find a checkpoint your arrival time is recorded. You will be told when you can depart the checkpoint to continue on till you find the next one. Checkpoints are only open for a certain length of time. Once that time is expired then you receive a maximum penalty if you haven't checked in.

Important: You cannot make up time from previous checkpoints. When you leave a checkpoint you are basically starting from scratch. Any penalty you received cannot be corrected. Catching up for being late on a previous leg means you'll just be early for the next one. In NOVICE class you are timed to your nearest second.

Checkpoint workers know the official time to reach that point (+time of last car leaving) and typically will stay open 10 minutes after the last official time+car# (which represents one minute). For example if your car #6 then you leave 6 minutes after the first car out. The checkpoint worker will record your time + 6 minutes to correct it to your official time. If there are 20 cars then the checkpoint is open 20min+10min after the first car out time.

### **CLASSES**

TSD rallies generally have several classes including for example a NOVICE class, an INTERMEDIATE class and an EQUIPPED class. The NOVICE class will be designed to keep things easier for your team. Typically it is 'seat of the pants'. That means you don't worry about doing calculations and just relax and try your best to stay on course.

### **AWARDS**

Dash plaques will be awarded to the top teams in each class.

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### HOW DO I START TSD RALLYING?

- STAY ON COURSE! This is the most important part next to being safe. All rallies are run on paved roads so you should never be on dirt.
- Relax! You shouldn't worry about doing the math on your first few rallies. This is 'seat of the pants', but DO THE ODOMETER CHECK. You'll be surprised how well you do!
- STAY ON THE ROAD. Do not drive beyond your ability. After a few rallies as your driving improves, you will start being on time more often.
- Enter a few rallies. Your first one is usually the toughest.
- Add about 10% to the requested speed. This helps you catch up from when you have to slow down for turns and stop at STOP signs and any unexpected delays you may encounter. Behave: a ticket from a law enforcement official will get you disqualified.
- Listen to the navigator. He or she is your guide.
- Don't follow another team, they may be lost!
- STAY ON COURSE (did we mention this?)
- Most importantly, have fun!!!

### THE ODOMETER CHECK

The purpose of this is to see how far off your odometer is from the official mileage on your instructions. Once you know this you have to adjust the route mileage by your correction factor.

- Step 1. Zero your trip meter at the beginning of the first section.
- Step 2. Drive to the end of the odometer check or calibration ("odo check" or "odo cal.") in the allotted time. There are no checkpoints in this zone.
- Step 3. When you get to the official mileage at that point, calculate the factor:

**Factor** = (your car's mileage) divided by (the Official Mileage)

- Step 4. Multiply all distances written in your route instructions by the "Factor".

#### **Example:**

Your trip meter says 13.4mi and the route instructions Official Mileage says it should be 12.8.

**Factor** =  $1.046875 = 13.4 / 12.8$

Use just the first two significant figures for NOVICE class (1.04). Now when an instruction says turn left at 32.4mi, your trip meter would say 33.69 (or more likely 33.7). The navigator can quickly go through the mileages and adjust. A blank box is provided next to the official mileage for your new figure.

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### TIME CALCULATIONS

You can do these if you really want to, but to advance out of NOVICE class you may want to try some.

All rally math is based on one simple formula.

$$\frac{60 \times (\text{MILES TO TRAVEL AT THE AVG SPEED})}{\text{OFFICIAL AVERAGE SPEED}} = \text{NUMBER OF MINUTES}$$

#### Example:

The route instructions say...

Mile 25.4 L onto Alwin Rd CAS 30

Mile 26.7 STOP. Tee L onto Stonecrest

Mile 28.5 STOP. R onto Torbon Bridge Rd CAS 43

**CAS = Commence Average Speed**

The total distance for this leg is  $(28.5-25.4) = 3.1$  miles at an average speed of 30mph. How do you know if you are staying on time? Use the equation above.

$$\frac{60 \times 3.1}{30} = 6.2 \text{ MINUTES}$$

Convert 0.2 minutes into seconds:  $0.2 \times 60 = 12$  seconds (this gets you the actual seconds)

6 minutes 12 seconds (6m12s) is the actual amount of time it should take to complete this set of instructions.

If the CAS read 40mph, then  $(60 \times 3.1)/40 = 4.65$  minutes.  $60 \times 0.65 = 39$  seconds totaling 4m39s to complete.

How do you know if you are on time? You can check the  $\frac{1}{2}$  way point. In the example above 1.3m is the Tee L onto Stonecrest. That calculates to 2m36s. Now you know how you're doing.

Beginner instructions will have most of these calculated for you so that you can still do some of them if you want but most importantly be safe and have fun!