



AiM Webinar
“Calculating Gear Position”
7.7.20
Edited Q&A

1 **Q:** If you are calculating gear, why do you need a top gear in the template?

A: [Answered live at 19:38]

2 **Q:** Is there a way to use CalcGear/PreCalcGear with a motorcycle and driven wheel speed? I.e. can we somehow calculate the change of tire profile as the bike leans over?

A1: A superbike tire circumference is ~8% less at full lean and the tire roll out is constantly changing depending on bike angle, in this situation it is best to use GPS speed as it is land speed and not subject to deviation from bike angle for your calculations.

A2: [Answered live at 25:05]

3 **Q:** Once gears is setup; will it automatically be added to a log?

A: Yes.

4 **Q:** To know the values of the gear ratio and the shift times, should we look at the workshop manual or is an approximation is enough?

A: [Answered live at 28:35]

5 **Q:** For motorcycles, where would the reduction gear go into the calculation?

A: [Answered live at 32:12]

6 **Q:** If you change tire size over the weekend (say 205/50/15 vs 225/50/15) would it affect the gear calculation?

A: The calculation will not work as well or at all. You'll want to update the math channel if you change tire size.

7 **Q:** Does a healthy or unhealthy clutch factor into this math channel?

A: Absolutely. If the clutch is slipping, it will affect the RPM at that particular gear and speed. This will likely cause an inaccurate gear reading.

8 **Q:** Does the Calculated Gear process just work automagically?

A: It's not completely automatic, there is a calibration process where you run the vehicle through all the gears all the way through the RPM range. After doing that a few times, it should be able to do the math to calculate gear.

9 **Q:** Can we have the "rainbow" function in RS3A so you can color the X-Y graph with the chosen gear number (like in the GPS map)?

A: It's still being built but yes.

10 **Q:** Will this work with a prop shaft speed sensor?

A: The calculation does not mind if it is prop speed or wheel speed. You will need to correlate prop speed with transmission ratios all the same.

11 **Q:** I'm just curious why people want to see the gear on the dash while driving? Is this mainly for sequential transmissions?

A: I would say yes. It could also be for novice drivers or just so there isn't a blank space for it on the display. The main reason in non-sequentials would be for the channel it creates for analysis, but if the math is already being done and you have a place to display it, you might as well.

12 **Q:** Where do the identifiers come from?

A: Identifiers come from the names of the data channels available to perform math functions with.

13 **Q:** Is there a good way to get the higher speed of the two undriven wheel for land speed? I have cars that can accel at 3G. GPS data tends to be slow.

A: It depends on the hardware that you are using. Most of our automotive loggers have digital inputs that can be used for a wheel speed sensor on the undriven wheels.