

Lecture T5 –Performance testing of the Jobe G-Track Pro

INTRODUCTION

Figure 1 shows 4 cars of various common types uses in performance testing.



Figure 1 – The 4 Types of cars used in performance tests of the controlled-friction G-Track

Table 1 – 10 run average times (s). Click left on times below to see a slow motion video example from each group of 10.

CAR	1	2	3	4
SMOOTH	2.6935	2.5976	2.5149	2.4479
SERRATED	2.6602	2.5629	2.4974	2.4415
DIFFERENCE	0.0333	0.0347	0.0175	0.0064

A car velocity is 484 cm/s when starting at 4 ft height, so a 7-inch long car will take 0.0367 seconds to go one car length at the finish line. Thus the standard tread wheels of standard cars 1 and 2 on a smooth surface deviate almost a car length's worth at the finish line compared to the straighter trajectory on the serrated surface of the Jobe G-Track Pro. Trimmed wheels reduce this deviation and racing wheels practically eliminate it. Only large deviations can be seen by the unaided eye so there is a considerable amount of side to side motion that cannot be easily seen. The following Slow Motion videos from the 8 links in **Table 1** capture this effect.

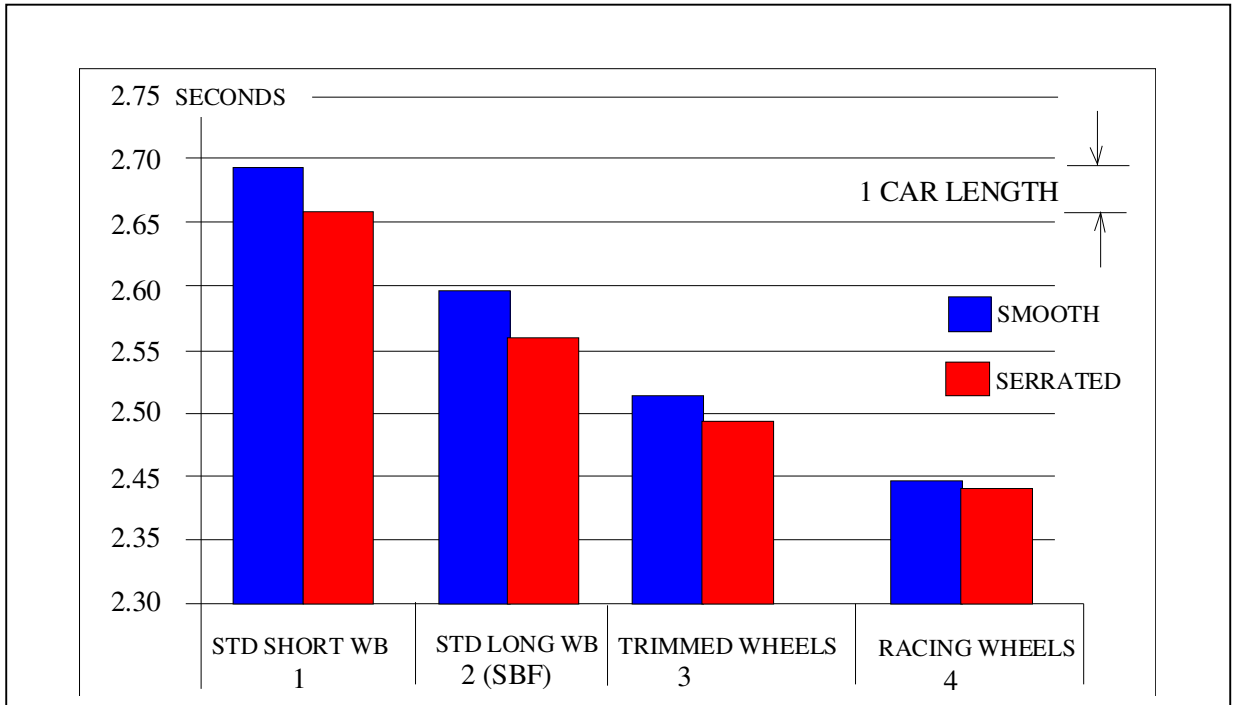


Figure 2 – Average Values of 10 runs for each car on the smooth and the serrated running lanes.

The SBF under Car 2 means “Simple But Fast” as explained in the Virtual Race ((VR) Program. The above graphs the data shown in **Table 1** and shows the substantial improvement afforded by the micro-ridged running surface. These improved times thus represent more closely the car capability itself rather than external effects imposed by the racetrack. In **Figure 3**, we see the spread in times is much larger on a smooth running surface.

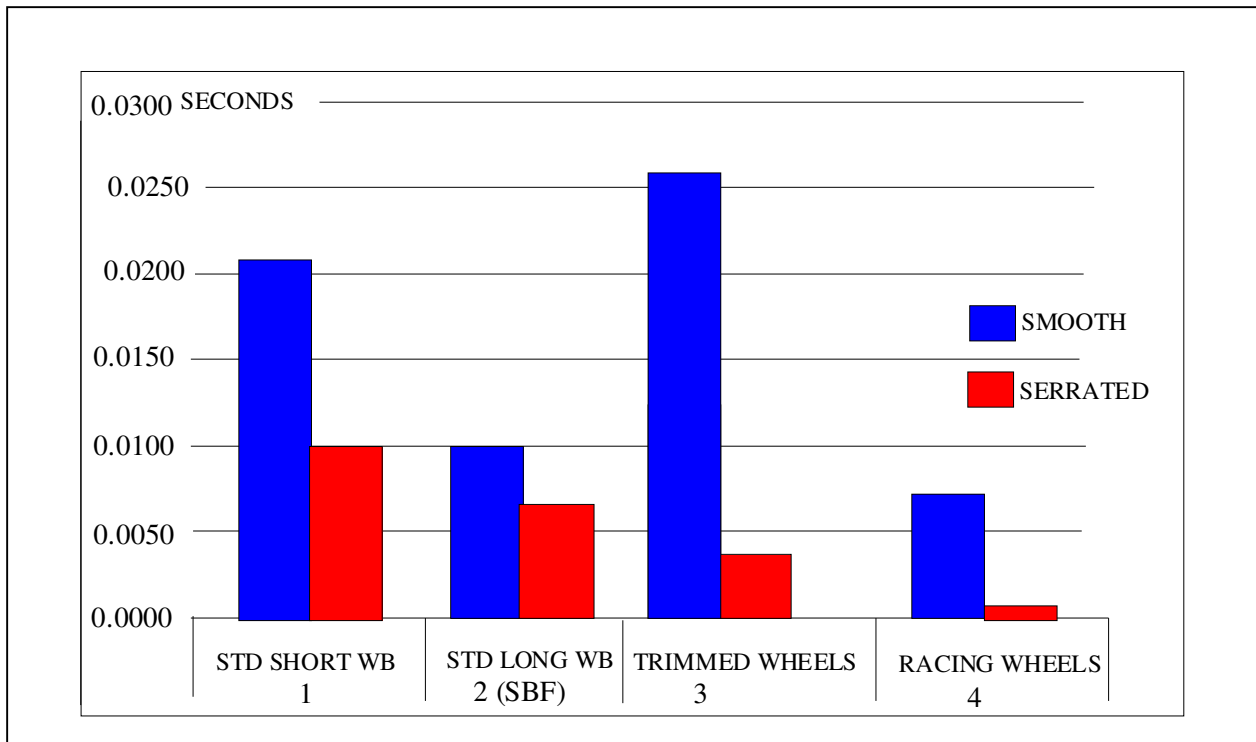


Figure 3 – The Standard Deviation, representing the spread in times, for the 10 runs used in each of 8 averages in **Fig 2**.