

October 15, 2015

To: Club Racing Board

Requested F500 Competition Adjustment: For the 4-cycle, motorcycle motors, change 31mm Flat Plate Intake Restrictor to 30mm Flat Plate Intake Restrictor.

Standard For Adjustment: GCR Rule 9.1.1.D.5.15.B.

It is the purpose of this section to control the power level of current and future 4-cycle engines to yield approximately the same on track performance as the two strokes . . .

Need for Adjustment:

The absolutely dominant on track performance of the 4-cycle engines at the Daytona International Speedway 2015 Runoffs, as documented in the official Race Results, Qualifying Results, and Splits, indisputably establishes the need for a competition adjustment, as does the SCCA race video.

- The fastest 4-cyle engine car out qualified the fastest two stroke engine car by more than 2 seconds.
- The fastest 4-cycle engine car, which had a qualifying trap speed of 158.988 mph, recorded a 155.361 mph race speed, as compared to the fastest two stroke car at 145.929 mph, winning by 9.474 seconds.
- The fastest pair of 4-cycle engine cars also can be seen consistently and significantly out accelerating the fastest two stroke car off Turn 6 on to the oval during the race.

In substance, these results repeated the results recorded for the CRB at the Road America June Sprints in 2014. There the fastest two 4-cycle engine cars consistently showed 137-138 mph through the Turn 5 radar trap, compared to the top pair of two stroke cars showing 132-133 mph. The CRB collected data also showed, contrary to expectations, that the 4-cycle cars out accelerated the two stroke cars off Turn 5 and uphill after Turn 5.

Jay Novak, the designer-builder of the fastest and winning 4-cycle engine car at the Daytona Runoffs acknowledged at the CRB Runoffs Tent Meeting that his calculations had been erroneous and a competition adjustment was needed.

Support for 30mm Adjustment:

Historically, the Committee that developed the 4-cycle engine rule set had agreed on the 30mm Restrictor (until the decision was made to allow greater performance for launching the F600 as a separate Regional-only class). That was the consensus as to what was required to best equalize the performance of the 4-cycle and two stroke motors.

Since the 2014 Road America data that supported the July 20, 2014 Competition Adjustment to 30mm, the only new on track comparative data (other than the 2015 Runoffs data) is the 2014 Runoffs data from Laguna Seca. There, on a reasonably representative 2.238 mile track, with the 4-cycle cars using the then required 30mm Restrictors, the performance of the fastest 4-cycle cars and the fastest two stroke cars was virtually equal.

- The Fastest Lap of the 1st place two stroke car (Novak) versus the Fastest Lap of the 2nd place 4-cycle car (McMahan) was: 1:33.941 vs. 1:34.225, or 284 thousandths of a second.

- The 4-cycle car was running an untested, trackside 90 degree upward bend in its exhaust system for Laguna Seca sound control.
- The 4-cycle car eventually finished 16.052 seconds back because it sustained a collapsed shock rubber.
- The Fastest Lap time differential and finishing Difference between the 3rd place two stroke car (Jorgenson) and the 4th place 4-cycle car (Stewart) was: 1:35.129 vs. 1:35.468, and 32.003 vs. 32.290. As the official video shows, they were side-by-side from the Cork Screw through the last turn where racing contact determined the result.

Because, with very few and isolated exceptions, the 4-cycle cars did not compete in the SCCA Majors in 2015, there is no better comparative data for making the necessary Competition Adjustment.

I am informed and believe that the Restrictor-to-horsepower relationship in the relevant range is effectively linear at 2 hp per mm. I am informed that a freshly rebuilt Suzuki engine produces approximately 110 hp as now restricted, so the 30 mm Restrictor would give approximately 108 hp.

Disclosure:

I currently own 3 two-stroke engine Scorpion cars, 1 4-cycle engine Rakovan, and 1 Scorpion in the process of conversion to a 4-cycle engine car.

I request this adjustment because I believe it is critical to preserving the F500 class within SCCA.

I believe that the adjustment to 30mm will, with the elimination of the now permitted dry sump for the 4-cycle engines, balance the performance of the 4-cycle engine cars, with their 5-speed drive train advantage, against the two stroke cars cut across the full range of tracks. I expect it to leave the 4-cycle engines with some advantage at the longest tracks and hope it will give the two stroke cars a like advantage at the shortest tracks, producing a real “shoot out” at MidOhio in 2016.

Respectfully submitted,

Jack Walbran

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