QUARTER MILE vs. EIGHTH MILE ET COMPARISONS

by Robert Szabo

IHRA is noted for providing drag race tracks with both the quarter mile and eighth mile distances. As a result, a much greater variety of racecar setups evolved, some optimized for quarter mile and some for eighth mile racing. In the past, timing systems did not have the incremental ET's for quarter mile racing as many have now. My more recent quarter mile time slips included eighth mile performance, and I started watching that as well as the final numbers. In my run recordkeeping, I saw a relationship between the eighth mile ET's and the quarter mile times. Looking at elapse time records for both distances, the following relationship was noted:

ET (1.4 mi.) x 64% = approx. ET (1/8th mi.)

For example in the Quick Rod class, an ET of 8.90 seconds is the target for quarter mile time. According to the IHRA Rule book, an ET of 7.70 seconds is the target for an eighth mile time.

Coincidentally 8.90 x 0.64 = 7.70

Different IHRA classes are examined in the next Table.

1st	2nd	3rd	4th
	Rule Book	1/4 ET x 64%	Rule Book
IHRA class	1/4 ET	1/8 ET	1/8 ET
Hot Rod	10.900	6.976	7.000
Super Rod	9.900	6.336	6.400
Quick Rod	8.900	5.696	5.700
Top Sports. Max.	8.000	5.120	5.490
Top Sports. Max. (Nat'ls)	7.800	4.992	not spec.
Top Drag max.	8.000	5.120	5.190
Top Drag max. (Nat'ls)	7.700	4.928	not spec.

Various classes are shown in the 1st column of this table. The quarter mile ET values specified in the Rule Book for those classes are shown in the 2nd column. The 3rd column computes the eighth mile ET values from those quarter mile values from the previous calculation. In comparison, the eighth mile ET values specified in the Rule Book are shown in the 4th column. The relationship between ET's for the two distances is apparent. While some differences exist between the 3rd and 4th column, they are in the ballpark. Additional classes are examined in the second table.

1st	2nd record as of 6-23-06	3rd 1/4 ET x 64%	4th record as of 6-23-06
IHRA class	1/4 ET	1/8 ET	1/8 ET
SS/PBA (Production-1)	8.895	5.693	5.819
SS/PCA (Production-1)	8.860	5.670	5.673
SS/PGA (Production-2)	9.702	6.209	6.190
SS/PHA (Production-2)	10.953	7.010	6.670
SS/DS	10.366	6.634	not available
SS/BS	9.214	5.897	5.849
V/S	14.810	9.478	9.494
U/SA	14.372	9.198	not available
L/CM	11.785	7.542	7.591
F/PS	12.911	8.263	7.970

In the previous Table, a good correlation exists between the computed values and the actual values in the 4th column. It is almost like there is an envelope of acceleration for all IHRA drag race vehicles. However, note the records in SS/PHA (Production-2). Those are both held by Ashley Parker's Wake Forrest Automotive, NAPA, Gillis Racing Manifolds racecar. That 1/8th mile record is real strong.

TWO TIMES 1/8th 1/4! Many years ago, before I put my algebra hat on, I thought that the quarter mile time (1,320 feet) should be twice the eighth mile time (660 feet). I did not realize that after the vehicle has gone 660 feet, it is traveling at a high rate of speed. It is entering the second half of the1,320 foot distance at that high speed. Consider how fast a vehicle goes after 660 feet. That is an eighth mile in a few blinks of an eye. Consider the time to go the second half of the quarter mile race at that speed. Now subtract that time from the eighth mile ET. The result is in the ballpark of the added time for the second part of the quarter mile race. That time value is a lot shorter amount. In effect, our race vehicles are "wallowing" in the first half of the race; and "flying" in the second half of the race.

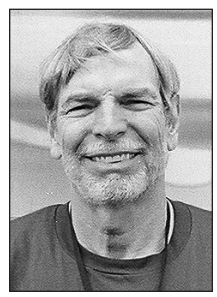
HALF-MILE DRAG RACING: I am old enough to remember half-mile races that were done up to the early '60's. The extra time for the half mile race was not that much longer than the time for the quarter mile race. Now imagine your racecar going that extra distance. Many more classes would hit 200. More would hit 300. And a couple may hit 350. Unfortunately that is beyond our facilities and safety experiences.

Mr. Aaron Polburn: how about paving Bonneville or the Dry Lakes? How about paving Daytona Beach or extending an IHRA racetrack for some HALF MILE drag racing? Or how about a MILE? A well-prepared track surface, going the distance the way IHRA can do it, may only be Sci Fi! Imagine driving the Tom Gould V/S in the mile! Or the Danny Waters Sr. U/SA in a mile! Jim Sickles Top Alcohol racecar: no please. The Mitch King or Rich Cooper Top Fuelers: I think not! For a Top Fuel Funnycar, you would be WEARING the car body at the end of the race. Back on earth, some added quarter and eighth mile time relations are provided.

IHRA class	1/4 ET	1/4 ET x 64% 1/8 ET
bracket or class	22.000	14.080
bracket or class	20.000	12.800
bracket or class	18.000	11.520
bracket or class	16.000	10.240
bracket or class	15.000	9.600
bracket or class	14.000	8.960
bracket or class	13.000	8.320
bracket or class	12.000	7.680
bracket or class	11.000	7.040
bracket or class	10.000	6.400
bracket or class	9.000	5.760
bracket or class	8.000	5.120
bracket or class	7.000	4.480
Pro Mod	6.500	4.160
Top Alcohol	6.000	3.840
Top Fuel	5.000	3.200

TUNING FOR CLASSES WITH NO ET LIMIT: Tuning issues occur from both the eighth and the quarter mile times. Quarter mile tuners often examine the eighth mile times. That is 660 feet on their time slips. They also look at the 330 foot and 60-foot times. Those values are recorded as well on most timing systems. A lot of tuning effort is put into the improvement of those earlier time intervals from the time slip. In classes with no ET limit, it almost seems as though most racing is done by the 660 foot distance; and maybe 990 feet as well The driver keep his or her foot in it in the high end, but the tuning concentration is often primarily to optimize the shorter distances. That is where the vehicle resides for the longest time. An improvement at or near the beginning of the race has a greater affect than an improvement in the high end. In the high end, the vehicle resides for only a short time period.

TUNING FOR ET BRACKETS: In the ET bracket classes, some tuners set up a vehicle to be soft on the low end with a "Bonzi" charge on the high end. IHRA does have rules limiting some of the amount of "Bonzi" in a setup. Officials do not want to see a high-powered racecar throttled on and off and on again at high speed. That is a safety issue. However, the variations of performance in bottom end and the top end combinations result in a lot of passing within many races. That adds an enormous amount of suspense to almost every race. Wherever you are sitting along the IHRA racetrack, you almost never know who is going to win the race until the win light is showing.



About the Author
Bob Szabo is an owner / driver of a blown alcohol drag racecar and author of the technical book: "Fuel Injection Racing Secrets." The author's next book is on methanol racing fuel that will be out shortly. Check the DRM Yellow Pages for Szabo Publishing or look on the Internet at http://www.racecarbook.com or call (707) 446 2917. If you have any comments about this article or any previous articles by the author, feel free to e-mail directly to the author at bob@racecarbook.com or to the DRM staff: pamelamarchyshyn@livenation.com or michaelperry@livenation.com NOTE: If you have spam controls and you Email any of us & want a response, please enter our Email address to clear your spam blocker. Time may not permit us to register to your spam blocker.