

Further Analysis of Pioneer Rides vs. Single Day Rides

1. Introduction: In general there are fewer pulls in Pioneer rides. The conventional wisdom is that riders ride slower – saving their horses for more than one day. In a previous study we addressed this by analyzing the ride time data for Pioneer rides vs. single day rides. The previous analysis concentrated on rides in the five AERC regions that account for the vast majority of the Pioneer rides (MT, NW, PS, SW and W).

Only the single day rides of 50, 55 and 60 miles were considered since the Pioneer rides are of that distance. All data was pulled from the AERC database and are official ride times. The ride times were normalized to minutes per mile for this analysis.

For the Pioneer rides, the individual rides are termed rides and the rides that make up a particular set of Pioneer ride are termed a Pioneer event. In the previous study all horses that only did one day ride of the Pioneer event were eliminated and only horses that did two or more days of the event were considered. This eliminated the riders who are riding one of the days only as a single day ride.

If the conjecture that "riders ride Pioneer rides slower," is true, the ride times in minutes per mile will show this and it should be statistically significant. In the previous study the ride time data showed that the horses that did at least two days of a Pioneer event go faster than those in a single day ride and the difference in speed is statistically significant.

In this study the criteria for the Pioneer event is changed and only horses that complete all days of the Pioneer event are considered. That is the ride time data for all horses that complete all days of a Pioneer event is compared to the ride time data for the single day rides. The regions considered remain the same. The same distances as the previous study were considered for the single day rides.

In this study the ride times of all ride days of a Pioneer event of only those riders that completed all days of the Pioneer event are compared to the ride times of single day rides of distances 50, 55 and 60 miles. Again the normalized minutes per mile was used for ride time. Again the 2002 ride season was used.

2. Method of Analysis: The method of analysis chosen is the standard statistical method known as Analysis of Variance (ANOVA) for testing the null hypothesis that there is no difference in the mean ride time in minutes per mile of Pioneer and single day

This null hypothesis analysis is:

H₀: the mean ride time of single day and Pioneer rides (all days completed) are equal.

There were 3998 single day riders in 129 rides considered in signal day rides in this study and 1113 riders in 63 Pioneer rides in 16 Pioneer events are considered. The reason for the slight difference in the number of Pioneer rides and Pioneer events is in some Pioneer

events no one finished all days. All the horses in the Pioneer rides considered did all the days of the event.

The Analysis of Variance was performed between the two sets of data of all the ride times for single day vs. all the ride times for the Pioneer rides. We chose 99% confidence for this study.

In section 3 the results are discussed.

3. Results

3.1 Statistical Results

Region	Mean Ride Time (min/mile)	Mean Ride Speed (Mph)
Single Day	8.97	6.68
Pioneer	8.59	6.95
Grand Mean	8.89	6.75

Required F value for 99% confidence = 6.63

F value= 17.28.

Conclusion: To a confidence of 99% there is a format difference.

The value of the F statistic of this set exceeds the threshold sufficient for a 99% confidence so the null hypothesis is rejected with a confidence of 99%. That is, there is statistically sufficient evidence that there is a difference in the mean ride time for single day and Pioneer rides considering only horses that finished all days of the Pioneer event.

A separate analysis give the standard deviation of the mean ride time for each single day and Pioneer as 0.03 and 0.06 minutes per mile respectively. So while the difference in the mean values seem small, the normalized error (difference in mean divided by standard deviation) on the order of 8 standard deviations – a significant amount. Therefore both analyses indicate that there is a statistically significant difference between the ride times in Pioneer rides and single day rides.

The surprise is, like in the previous study, the Pioneer riders are going faster than the single day rides. Although the riders in the Pioneer events rode between three and 5 days in a row to complete the Pioneer event, they were as a group riding faster than riders at the single day rides in the same regions on similar terrain in a similar climate.

4 Conclusions: The conventional wisdom is riders ride Pioneer rides at a slower pace particularly those that want to do the entire event. This conclusion can partially be justified based on the fewer pull rates at Pioneer rides. This did not show to be the case in a previous study that compared riders that completed at least two days of a Pioneer event. In this case, the Pioneer rides were 4 percent faster than the single day rides based on average ride time.

The question this study addresses is the riders that complete all days of a Pioneer event – do they ride slower? It was found that they even ride a little faster (however, not significantly so) than the riders that complete only two days. The riders that complete all days of a Pioneer event ride on the average 4.2 percent faster than the average ride time of single day riders. The conclusions as to the possible reasons are varied, longer single day rides, shorter Pioneer rides, easier or harder terrain, etc. In any case, independent of the reason - the riders that rode all days of a Pioneer event rode 4.2% faster than their counterparts on single day rides in similar terrain and similar climate.