A Word about “Suggested Classes”

The most important thing to understand about the “suggested class” column is that there is a LOT of information that is unknown and cannot be predicted! So, instead of starting with what is unknown, let’s start with what do know and how the suggested class column is populated.

The most important piece of data that we have is what is known as the **ADVANCEMENT PERCENTAGE** or **AP%** (called AP going forward). Below is how this data is obtained and calculated.

First, we need to understand advancement classes. An advancement class is a collection of race classes that run under a single advancement set of rules. For instance, all long course bikes run under an advancement class. Although they run in two groups (A and B), advancement between classes takes place between the groups, creating one advancement class. Bike short course is a second advancement class. Quad long course is another. Pee Wee’s are another. You get the drift…

So, to calculate the AP for a single race, we take the fastest time that any rider was able to run a lap in that advancement class and record it. Then we take each lap that a rider runs, add them all together, and divide them by the number of laps that rider ran, which gives us the average lap time that that rider ran in the same race under the same advancement class. Then we simply represent the average lap speed a rider ran as a percent of the fastest lap in the same advancement class.

- Soooo… John Smith ran the single fastest lap in 14 minutes exactly.
- Joe Smith ran a lap in 17 minutes, another lap in 18 minutes, then another and another in 16 minutes.
- So, we add 17, 18, and 16 together to get 51. Then we divide that by the number of laps he ran, 3. That gives us 17 minutes for Joe Smith’s average lap time.
- Now to get percent, we represent that as 14/17 which equals .82 or 82%
- Joe Smiths AP for that race is 82%
- Which means that Joe Smith was 82% as fast as the fastest lap that was made on that course, in that advancement class, on that day, in similar conditions.

So now we know how, in the past, each rider has performed compared to the “Best Possible” for the given race. Now we need to figure out how they did for the season. The best way we have to do that is to add up all their APs from each race they ran and divide them by the number of races they ran that year in that advancement class. Notice I keep repeating “advancement class”? That’s because a lot of times a rider runs multiple different advancement classes, and possibly on different machines. It’s important to compare apples to apples. So, a rider may run at 72% in the long course bike, but 85% in the short course. They’re different advancement classes and so they’re calculated separately.

- Sooo, Joe Smith ran 85% in his first race, 83% in his second race, and 86% in his third race that he ran that year. He didn’t run any more races.
- We add 85, 83, and 86 to get 254
- We divide that by the 3 races to get 84.66666… rounded to 84.67%
- Joe’s yearly average for the season in this advancement class is 84.67%

Why is AP% so important?

It is the most accurate piece of data available to determine the speed potential of a rider. Fred beat Billy 3 times and Billy beat Sally 4 times but Alex sure looks faster doesn't give any data that is useful. But an accurate measure of Sam's average lap time does. And in order to make that useful, average lap time has to be compared to something meaningful. The most meaningful data we have is how fast a lap on that course can be run by someone in that days conditions. That's why we need the fastest lap time to compare too.

What are the problems with AP%?

1. Number one is understanding. If a person is going to understand why they are where they are, why they get moved when they get moved, why one class is suggested over another, and why they can't all run in the beginner class (or the pro), they have to understand AP%
2. Second is math – YUCK!!! Thankfully computers don't mind doing it at all.
3. It is difficult to consider "outliers". Those oddities where someone cuts the course, breaks down, or runs out of gas, or stops to help another rider, etc…
4. It's an average, and therefore becomes more accurate with more data (laps)
5. Over a season it is also an average so again it also becomes more accurate with more data (races)

What can we do to mitigate the problems with AP%?

1. We MUST foster understanding, explain it, post it, and make sure everyone has it!
2. Ensure calculations are accurate.
3. We have built into the software some code to help identify outliers, but sometimes just have to review the data manually.

How is it possible that a rider can beat another rider in two races, but at the end of the year the other rider has a higher AP%?

1. Math!
2. Rider A beats rider B in a single race and rider A has 85% while rider B has 84%
3. Rider A beats rider B in another race where rider A has 86% and rider B has 83%
4. Rider A goes on to compete in 3 more races where his ap is 80%,76%, and 80%
5. Rider B takes his ball and goes home
6. At the end of the year, rider A has an annual AP of 81%
7. At the end of the year, rider B has an annual AP of 83.5%
8. But rider A was faster than rider B right? Not by the annual AP.
9. Why? Because averages become more accurate with more data. How rider B would have done in the same 3 additional races that rider A ran is unknown. Most likely, rider B would have had lower percentages then Rider A because Rider A appears to be faster. But, by not participating, the data isn't there to analyze.

Enough about how we get AP%. How is it used?

In a normal year, this is pretty easy… look at last years results to predict this years class placement. But in 2024, there are some unique challenges.

To begin with, riders were not in their appropriate classes in 2023. There's no ability to look at the prior years classes to determine where the riders should be in 2024. Even if riders were in the correct class, that's no assistance in 2024 because almost all classes have changed. The XC1, XC2, XC3, vet expert, etc classes are gone, pushing faster riders back into "A" and pushing "A" riders int "B", etc... C classes have been added across the board, and age-based classes have become more predominant. A total re-organization of riders and class associations is required.

In order to accomplish such a re-organization, assumptions must be made. These assumptions are NOT necessarily accurate but are a best guess to create organization out of chaos. They are listed below:

1. Riders will prefer to ride in the class where they have the highest likelihood of a podium finish.
2. Women will prefer to ride in a women's class.
3. School age will prefer the school age classes.
4. Age based riders will prefer to ride in their respective age-based class.
5. Bike specific riders will prefer to ride in their bike specific class (ie vintage, decades, etc…)

Addition considerations have to be made for early signups, which will require drastic changes in early season. Listed below:

1. Many riders are NOT going to ride in their suggested classes.
2. Some riders will ride up a class.
3. Some women will want to ride the open or age-based classes.
4. Some school age will choose to ride the open classes.
5. Some age-based riders will ride in lower age groups.
6. Some bike specific riders will run in other classes.
7. Many riders are eligible for many different classes and the rules permit them to run them.

Accurate predictions are not possible.

How are the classes organized and separated?

For the moment, this is 100 percent based on faulty assumptions and incomplete data. It is a "best effort". At this point, I will refer you to the spreadsheet I distributed earlier.

If you look at the %class%Calc pages, you will see where the number of riders is charted and graphed. The charts are the easiest to read.

1. Each available class is assigned an AP% cut off. The point where the division between that class and the next fastest class is made. At the moment that point is an arbitrary number chosen only by the number of people it puts in each class if they choose to run their suggested class based on the criteria above.
2. Class cut offs were organized to favor higher numbers in lower classes and lower numbers in higher classes within an advancement structure. This was done for a couple of reasons:
    a. Riders can choose to ride up a class, but not down, therefor number migrations will be toward higher classes.

b. It is much easier to advance riders up a class then it is to move them back down. Primarily because moving them down a class damages the points of the riders in the down class, or requires forfeiture of points, where moving them up does not.
c. Riders in higher classes tend to have higher attendance records, where lower classes see much higher “one hit wonders”.
d. It’s safer to err toward the side of slower classes then it is to accidentally throw a rider into a higher class they may not be suited for.

That concludes the Suggested Classes write up. There were many factors that went into developing this system, hundreds of hours, sleepless nights, and most importantly and absolute burning desire to make these division as fair, understandable, and transparent as possible.

A word of note… as early registration starts to fill in the blanks, there will be MUCH more data to work with. This will necessitate changes in the AP class divisions. I am going to encourage everyone NOT to purchase expensive number until after the 3rd race, as there is a very high likelihood that numbers will change for many riders. Some, even before the first race begins.