The History and Development of the NISCA Power Point Table

By Bob Klapthor, March 28, 2024

1) The Start: Joe Groscost created the first NISCA Power Point Table in 1984.

Several states had previous similar tables (notably IN & IA) which they used to rank teams on a dual meet basis.

2) My involvement with NISCA started in 1986/7 after I moved from Manhattan, KS to Springfield, OH. I had noticed (and kept) several short articles Joe had authored in USA Today about the NISCA Dual Meet ranking program so after moving to Ohio I made a point to contact Joe about the NISCA Program. It just happened that Joe was already planning a revision to the table including having separate tables for Boys & Girls instead of one unified table. We had multiple discussions as I applied several numerical approaches to revise the table and put it on a sounder statistical footing.

3) Here are some of the principle ideas that we incorporated in the Power Point Table (PPT):
    1) The PPT table is **linear in speed (yds/sec**); not in time. That way faster times will have smaller differences between points.
    2) We decided on a 200 point table. Note: NISCA didn't have any generally accepted similar tables to 'use/borrow from/incorporate'.
    3) The **100th swim equals 140 points**. this has remained the **key factor** for 'normalizing/adjusting' subsequent versions of the PPT table. With appropriate scaling the PPT table would have room on top for current & future records while also having room on the bottom for efforts by slower interscholastic swimmers.
    4) The NISCA PPT Table would be designed for primary use by interscholastic swimmers & the swims must be swum in high school competition.
    5) A scaling factor is applied to the yds/sec data for each event.

Development Timeline:

1984 → Initial 140 point table by Joe Groscost. Single table for both boys & girls.

1988 → Revised 200 point table by Bob Klapthor & Joe Groscost. Separate tables for boys & girls. I compiled a largely Midwest (IL, MI, IN, OH) top times list to provide a 2nd point for scaling purposes.

1991 → Revised/updated PPT table to include the 200 FR Relay.

1999 → Further revision. Used the 100th swim (3 year average) = 140 points. Minor corrections on the All American data for missing swims. I was compiling a 250 deep national high school list which was utilized for the corrections.

2014 → Further revision using a 3-year average 100th swim with All American corrections when known. The major changes in strokes were the main reason for the update. Up through this point I was largely just updating the normalization point (100th swim = 140 points) and keeping the scaling factors from 1991.

2023 → This revision was based on corrected 2022 data for the 100th swim.

Due to the pandemic I did not use a 3-year average since the data was too sporadic/incomplete for 2020 & 2021.

I now used the data from the Swim Cloud database (which I had to verify swim by swim to eliminate errors) combined with the All American list to determine the 100th swim for each event. For both 2022 & 2023 there are 11 to 29 'missing/non-submitted' swims per event.

I've had concerns about various aspects of the previous editions of the PPT tables, especially when looking at trends near the bottom of the table. For the 2023 edition I experimented with various methods for scaling the events (NCAA records, National HS Records, % changes, etc). I decided the best fit was to use a constant multiplier applied to the yds/sec data. I used the same multiplier for each event.

The 140th swim (in yds/sec) * multiplier = a small **differential** (in yds/sec) that is added/or subtracted per power point from the 140th swim. Thus each event has its own **unique differential (in yds/sec)** based on the 140th swim. This method allows us to keep the same **relative ratios** between events & between girls & boys throughout the PPT Table. These relative ratios are set by the 100th swims for each event.

Considering all the stroke changes that have occurred the past 20 years the strokes have somewhat evened out (think back versus fly), plus of course we have made substantial changes to the training practices.

This change would also allow a researcher to use historical data to produce comparable PPT tables for earlier eras. You of course would need to apply corrections for the number of participants in high school swimming. For example if the older time period only had 60% of the participation as currently you would use the 60th swim = 140 pts. For historical purposes the National Federation participation data only goes back to the late 1960s. And large scale girls high school swimming started with the 1972/3 season.