



STRING PINSETTER SCORING REPORT

NOVEMBER 2025

OVERVIEW

USBC staff has been closely monitoring the implementation of approved string pinsetters. Every string pinsetter installation is being reviewed by USBC center certification staff to ensure the models are being installed compliant to USBC specifications. At this time, there have been more than 100 approved string pinsetter installations across approximately 3,500 USBC-certified bowling centers.

Through the ongoing approval process, a total of 10 USBC approved string pinsetters can currently be found on the approved string pinsetters list. Each machine is submitted to the USBC Equipment and Specifications team, installed in the International Training and Research Center, and measured for specification compliance and a pin rebound test conducted with E.A.R.L. the bowling robot.

USBC has approved string pinsetter averages from all over the country with 17 centers reporting averages from the 2023-2024 bowling season and 66 centers reporting averages from the 2024-2025 season. Our initial review of the data has shown that:

- The overall scoring difference between string pinsetters and freefall pinsetters is trending at 3.4 pins lower on string pinsetters.
- The overall scoring pace difference is within what was expected from our original research.
- Higher average bowlers are affected more, with bowlers averaging over 210 experiencing a 7-pin decrease on average. This is equivalent to about 2 less strikes per 3-game set.

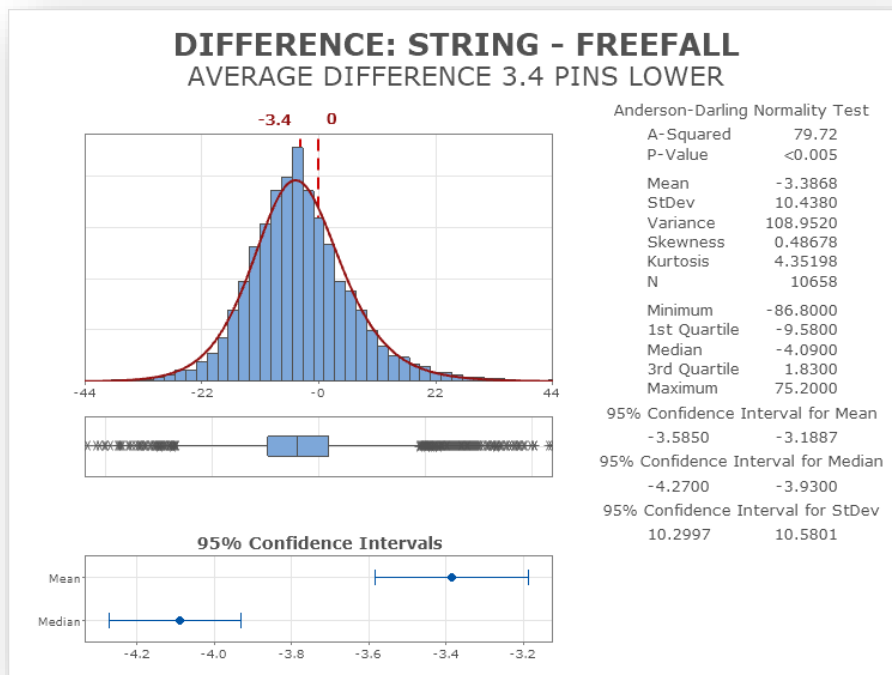
The stronger impact on the higher-level bowlers is outside of what our original research suggested, but aligns with pro bowler descriptions of their experiences with string pin machines. Specifically, it takes a slightly better shot to strike on strings.

Currently, we are not pursuing an average adjustment between string pinsetter averages and free-fall averages, but will continue to monitor the scoring pace of string pinsetter machines as more of them are approved in centers.

RESEARCH

At the close of the 2024-2025 season, we now have 66 centers with 10,658 bowlers reporting string pinsetter averages. For each bowler, we can calculate a paired difference in their average by looking at their overall pins / overall games in the center before and after the pinsetter change.

For each bowler we calculated a composite free-fall average from the 2022-2023 season through the centers string conversion. This was used as their freefall average. Their string pin averages were calculated the same way using total games and total pins from the conversion forward. The analysis omitted any challenge / sport leagues.



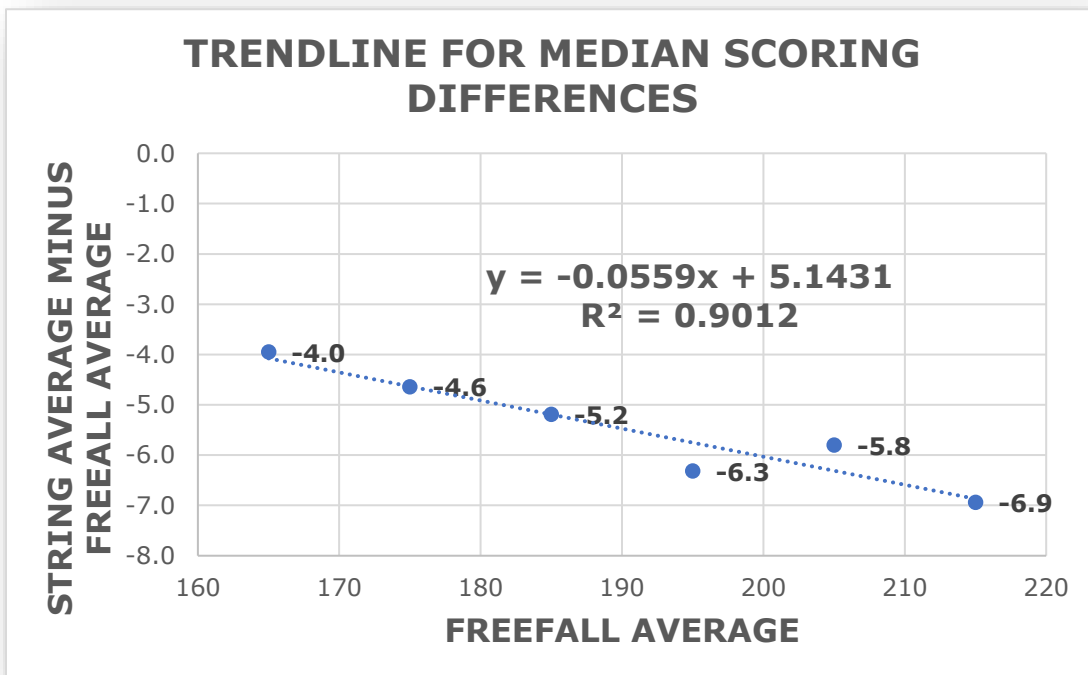
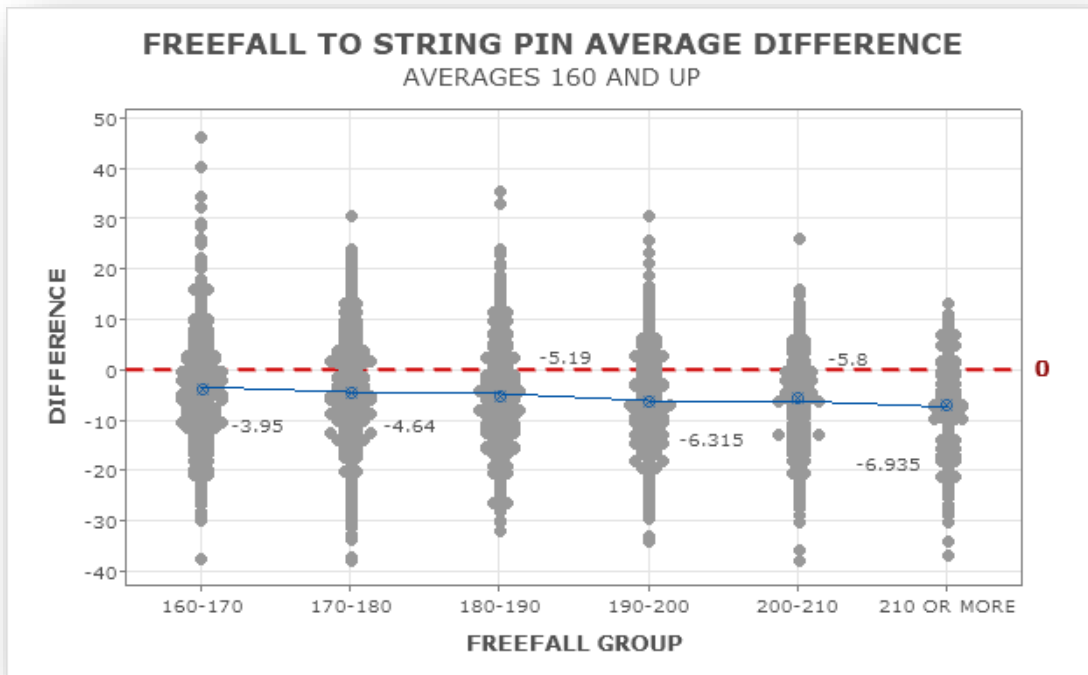
Compiling the results for all 10,658 bowlers shows a mean difference of -3.4 when subtracting the freefall averages from the string pinsetter averages. Negative means scores were lower on string pinsetters.

Our in-house testing focused on getting many people to bowl on freefall and string pinsetters to measure the difference. Based on our previous research we expected the true difference to be less than 4 pins and the data shows that test was valid.

Viewing the bowlers who averaged 160 and higher on freefall, we begin to see a trend where the median score for the group moves down from about 3.9 pins (group that averaged 160-170 on freefall) to 6.9 pins at the highest group (210 average and above).

This data indicates that better bowlers, bowlers who average higher, experience a bigger difference between their freefall and string pinsetter experience than bowlers with a lower average.

As averages increase, the difference in the pin action between the two types becomes more meaningful. In general, as averages increase, the amount handicap granted becomes less until bowlers become scratch bowlers.



The two charts above indicate that each of these bowler groups are trending down on string pinsetters (between 4 and 7 pins lower). However, the individual value plot shows that all these average groups have some bowlers (each gray dot in the top chart) averaging as much as 10 or more higher on strings than they did on freefall. That means there is no "one

size fits all, everyone scoring less” on strings. Rather, more often than not, bowlers are a few pins down on string pinsetters.

If everyone is bowling on the same machines, you might ask why it would be different for some bowlers than others? We believe this to be completely related to *pocket percentage*. If you take the assumption that higher average bowlers have a higher average pocket percentage – that is more of their deliveries are in the pocket with higher odds of striking, that means their final average is going to be more dependent on the pin action or “carry.”

A bowler loses about 11 pins when they get a 9-spares instead of a strike on a string of strikes. If you put this in terms of a 3-game set, which most leagues are, we can generate this table of how missing any number of strikes per night may affect longer-term averages.

STRIKES DOWN PER NIGHT	PINS DOWN PER NIGHT	AVERAGE EFFECT
1	11	3.67
2	22	7.33
3	33	11.00

Taking this perspective, our 160 to 170 group is averaging just a little bit more than 1 less strike per league night, and our 210s and above are averaging just under 2 less strikes per league night. Taking in the feedback we see from around the industry, professional bowlers have said strings are slightly harder to strike on than their freefall counter parts, this makes sense. The machines are slightly lowering everyone’s carry percentage on pocket hits and the specific impact to a bowler is dependent on the percentage of their shots getting to the pocket which has a corresponding missed strikes per league night, lowering their average in the long run.

CONCLUSIONS

USBC has approved string pinsetter averages coming in from all over the country with 17 centers reporting averages from the 2023-2024 bowling season and 66 centers reporting averages from the 2024-2025 season. Our initial review of the data has shown that:

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