

MEMORANDUM

The USCTA Rules & Equipment Committee
April 2024

Background

Leading up to the December 2021 board meeting of the USCTA in New York, the USCTA Rules & Equipment Committee was informed that a non-wooden racquet had been in development and tested informally by several professionals.

The Rules & Equipment Committee produced interim guidelines on play with such racquets pending a formal review process. These guidelines were presented to the USCTA Board in the form of a memorandum and focused primarily on tracking of use of such racquets, including how to track play with these racquets on RTO. The memorandum observed that the American Laws of Tennis prohibited the use of non-wooden racquets in USCTA events but did not govern club play. As such, it recommended that clubs consider and then publicize their policies regarding the use of such racquets in club events.

In April 2022, the USCTA formed an ad hoc committee to consider issues related to non-wooden racquets. The committee consisted of the following members:

Dacre Stoker, Chair (R&E)
Vern Peterson-Cassin (R&E)
Ken Forton (R&E)
Dick Brickley (R&E)
Peter Vogt
Tyler Thompson
Jon Crowell
Adrian Kemp (pro)
Zach Sacks
Suzy Schwartz
Conor Medlow (pro)
Rich Mueller
Mary Livingston (ex officio)

In initial meetings, the Committee considered issues including how to test the racquets versus other racquets strung at the same tension. The Committee noted that over the past few years both Grays and Gold Leaf had strengthened their (all wooden) racquets by using vulcanized paper and adhesives to create very stiff racquet frames, which resulted in the ability to string the racquets more tightly and allowed the ball to be hit at a faster pace. Anecdotally, professionals had observed that there was a discernible correlation between stiffer racquet frames and increased speed of the balls coming off the racquets involved in the test.

The Committee then considered a series of tests to determine whether the graphite racquets produced by Harrow (i) produced greater ball speed or (ii) were stiffer than currently available wooden models.

Speed Testing

Two rounds of speed tests were performed at the Tuxedo Club using a radar gun. The tests were administered by Rich Muller and Dave Christensen.

Round 1 of Testing – May 2022 A variety of players, pros, and amateurs each struck (forced) three balls out of their hand with each racquet. The goal was to measure the speed of each ball with the radar gun in an effort to rank the players and the racquets.

Round 2 of Testing – November 2022 Rich Muller and Dave Christensen again undertook radar gun testing (for pace) at the Tuxedo Club, with a variety of players hitting forces using two Harrow (non-wooden racquets), both the lighter and heavier version, a Grays CRX racquet and a Wayward wooden racquet.

Results can be found here:

https://docs.google.com/spreadsheets/d/1SY5epUhQHdp6qBhoYwUa3HgRYbXAKN2_sa2MtUJyXs/edit?usp=sharing

Data from these tests, although generated from a small sample size, indicated that players at various skill levels were not hitting the ball harder with the non-wooden racquets. This is consistent with reports from professionals who had tested the racquets.

Racquet Diagnostic Center Tests

On two occasions we were able to gain access to a Babolat RDC (Racquet Diagnostic Center) machine to do independent testing for frame stiffness. These tests produced the following stiffness results:

Test 1:

Grays extra Tech (all wood):	67
Harrow 325 grams white frame:	72
Gold Leaf (all wood):	75

Test 2:

Wayward (all wood) 396 grams:	68
Harrow 362 grams (white frame):	76
Harrow 388 grams (black frame):	78
Grays CLX Pro (all wood) 398 grams:	73

Broadly, the conclusion of these tests was that the Harrow graphite racquets were not significantly stiffer than the wooden racquets tested. We also observed that the stiffness of racquets could vary appreciably even within racquet types.

Provisional Approval

Based on testing and anecdotal feedback, the Ad Hoc Committee recommended that the USCTA grant provisional use of the Harrow Non-Wood racquet in USCTA amateur events and for the pros in the National League only for a period of one year commencing July 1, 2023. This recommendation was subsequently approved by the USCTA Board in June, 2023.

Additional reports during Provisional Approval

During the period of provisional approval, the Ad Hoc Committee solicited additional reports from professionals on a number of occasions. From these reports, it became clear that use of graphite racquets varied widely between clubs, with some clubs selling more graphite racquets than other models, and others selling hardly any or none.

Players choosing between racquets reportedly considered multiple factors, including (i) cost of racquet; (ii) cost of restringing; (iii) “feel;” (iv) aesthetics; and (v) the history of the game. No club reported any difference in perception of racquet performance among members.

Anecdotally, player experience with the racquets was highly variable and subjective. Some players reported that they had experimented with graphite but had returned to wooden racquets due to “feel” or to a perception that the graphite racquets were more prone to arm issues such as tennis elbow. Other clubs reported fewer symptoms of tennis elbow and a perception of a larger sweet spot with the graphite racquet. One professional theorized that arm issues might vary from club to club and relate to stringing methodology rather than the frame itself.

Professionals consistently noted two points: First, they did not observe any advantage in play from use of the graphite racquets, nor did members report feeling such an advantage. Second, the somewhat less expensive price point, combined with longevity, was considered helpful to certain demographics of players, including those who are more cost-sensitive or frequent players who might otherwise expect to go through several racquets per year during practice play.

Racquet & Equipment Committee Chair’s Summary

The provisional use of non-wooden racquets in all USCTA Amateur events was agreed for one year July 2023-24. We also agreed that the pros could use them in the National League for the same time period.

Pros were encouraged to monitor their members’ use of these racquets throughout the provisional year, and to provide feedback to the Rules and Equipment Committee on an ongoing basis. We were particularly interested to hear about any injuries associated with the graphite racquets, and any competitive advantage associated with their use.

As of April 2024, we have not heard any reports from club professionals that indicate any competitive advantage or significant injuries attributable to the use of these Harrow graphite racquets. Generally, the attitude towards these racquets is that they are more durable than a wooden racquets, but they do not provide as much feel to the ball as a wooden racquet. At present, there is insufficient data to conclude, even anecdotally, that the racquets cause any more or any fewer injuries.

The recent YouTube video of interviews with a variety of professionals filmed at the 2023 British Open shows varying degrees of interest and support for the graphite racquet. This is consistent with what we are hearing in the US.

It has been noted during this process of testing and practice that racquet stiffness is an issue with both wooden and non-wooden racquets. Stiffness varies across racquets and greater stiffness appears to correlate with greater speed. If the USCTA wishes to address the speed of play, it should address the overall issue of allowable racquet stiffness rather than focusing on differences in materials, as there is considerable variation even within individual models. We note that approval of non-wooden racquets may not be appropriate in the abstract. While the current Harrow models appear to perform similarly to wooden racquets (by design), it is certainly possible that future models could produce higher speeds or more injuries. Careful thought needs to be given to how to consider future innovations.

We note that the Ad Hoc Committee was instructed to consider only impacts of non-wooden racquets on the safety of court tennis. We have become aware that there are other factors for the USCTA to consider at some point in this process: balls, strength and fitness of players, style of play, the position of other racquet manufacturers, and the history of the game.

At this time, neither the Ad Hoc Committee nor the Rules & Equipment Committee has made a final recommendation on the approval of non-wooden racquets, nor has the USCTA Board made such a decision. Racquet use thus remains subject to the interim policy approved in July 2023.

A final recommendation will come after the conclusion of the provisional period and the gathering of any relevant outstanding data.