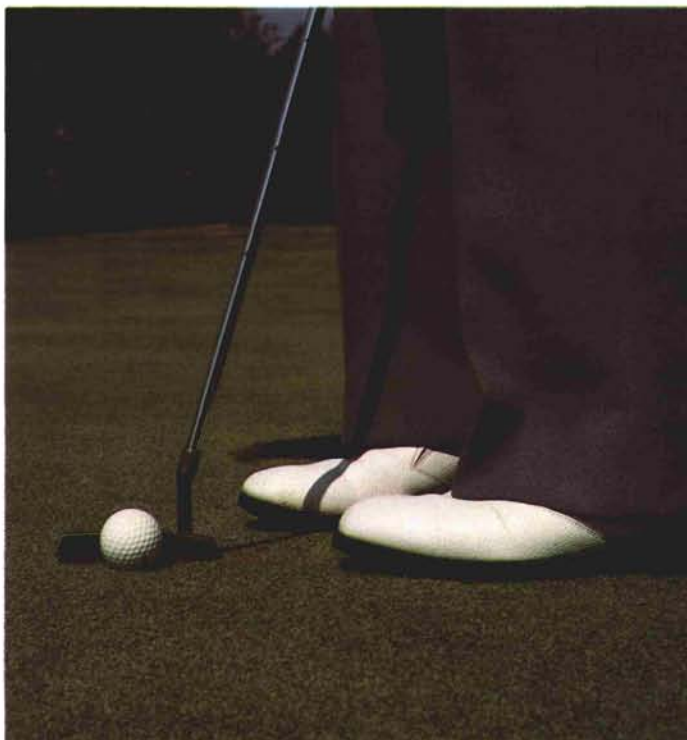


# The Stimpmeter and the Open

by **FRANK THOMAS**,  
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*After four consecutive days of double-mowing at championship setting, note excellence of texture and putting quality.*

**S**UPERINTENDENT JIM YOUNG did an excellent job in bringing Cherry Hills Country Club to peak championship condition for the 1978 U.S. Open Championship. Despite difficult Colorado weather prior to and during the tournament, the course condition was super and greens in particular were superb. Aply assisted by Tim Sedgley and a young crew of eager, interested and cooperative young men, most of whom were students or college graduates, things ran smoothly despite the usual day-to-day problems that are sure to occur when a major tournament is in progress. Young's ability to organize and delegate authority prevailed, but his fine sense of humor made this championship enjoyable for all who came in contact with him.

To achieve championship uniformity and speed on putting greens, Young's program was as follows:

1. Little fertilizer was applied — only  $\frac{1}{8}$  pound nitrogen per 1,000 square feet was applied in the spring prior to the championship. Carefully conditioned hungry turf makes for better championship putting surfaces.
2. Iron is applied periodically during the year. High sodium soils require periodic treatments with ferrous sulfate and chelated iron. One treatment was applied during the week of the Open.

3. The normal summer watering program requires 20 minutes each night; during the Championship the program was altered as follows:

**Tuesday night** — 10 minutes to all greens.

**Wednesday night** — 10 minutes to all greens.

**Thursday night** — 10 minutes to all greens except for No. 1, No. 4, No. 14 and No. 16, which were softer than others. They were watered only five minutes.

**Friday night** — all greens watered 15 minutes.

**Saturday night** — all greens watered 15 minutes except No. 4, 14 and 16, which were watered 10 minutes.

This schedule may surprise some people who are knowledgeable in turfgrass management, since this normally would be considered a heavy watering schedule in other regions. However, the soils and water supplied in this region are high in sodium, which causes a breakdown in soils, increases compaction and limits water penetration — hence the need to water more. Secondly, the temperature for this week was in the 90s, the sky was cloudless for most of the week, humidity was low

and 15- to 20-mile-per-hour winds blew incessantly on some days. This combination causes surface water to evaporate rapidly and close-cut putting green grasses to wilt. Therefore, every green had to be syringed shortly after noon every day. Despite this schedule, greens were tournament firm.

### THE MOWING SCHEDULE

All greens were double-cut beginning on Wednesday morning. Speed tests daily indicated that it took four consecutive days of double mowing to attain the desired uniformity and speed; therefore, in the future, all greens will be mowed so that the fourth consecutive double-cutting will take place the morning of the last practice round, if this can be safely accomplished. Because of the high temperatures at Cherry Hills, Young was afraid that some turf would be lost on greens late in the week if they were double-cut too early.

Single unit rigid mowers were used set at 5/32nds the week prior to the Open, at 9/64ths for Monday to Thursday and at 7/64ths according to Young for the Friday, Saturday and Sunday mowing.

Stimpmeter readings were taken on every green every morning between 15 and 20 minutes before play, keeping well ahead of the field. In many cases more than one reading was taken on some greens to check the consistency of different zones. In general, this is not necessary. In this case, however, the data exposed a problem which might not have been corrected without multiple readings. On one day, greens were tested following the final group in the afternoon to confirm previous findings regarding changing speeds of greens during the day. These tests confirmed that there was relatively little change in speed during the day. This can be attributed to the two opposing factors which influence the speed of the green.

In general, as the greens dry they may become a little faster. During the day, however, the grass continues to grow, and this is inclined to decrease speeds. These two factors are therefore counter-acting one another. It depends upon which of the two is dominant as to which way the change will be. However, the change at the end of the day tested was slower, but no more than 6 percent slower than when play started. One cannot conclude from this that the relationship between these

two opposing forces is linear throughout the day. For example, a quick-drying spell in the early morning may have a rapid speeding-up effect on the green before the growing grass can slow it down. Greens sheltered from the wind may not be affected as much as exposed greens.

Syringing of the greens also has an affect on the putting surface, but not nearly so dramatically as we anticipated. Preliminary tests have shown that if syringing is done correctly and those conditions requiring syringing prevail — i.e. reasonably high temperatures and drying winds — within five minutes after the syringing, the putting speed is virtually identical to what it was before syringing. The preliminary tests showed that even though approximately five minutes was required to regain the putting speed, only two and one-half minutes was required for the speed to return to within 5 percent of the original speed prior to syringing. This information should not be misused, because it depends upon a number of conditions — first, that the syringing is done correctly; second, that the conditions requiring the syringing prevail after it has been done; and third, the analysis cannot be considered conclusive since data was gathered from one location only.

When we tested the Cherry Hills greens with the Stimpmeter, we experimented with a golf ball with no dimples. This ball gave us repeatable readings, and yet when we compared them with the data we gathered using regular dimpled golf balls, we found them to be no longer or shorter on the average.

### SPEED AND CONSISTENCY

The chart below shows the green speeds Wednesday through Sunday, the final day of the Championship. These are averages and include the measurements made on the practice greens.

It can be seen from these figures that the greens were in the medium-fast range for championship conditions during the final two days. However, this does not imply that the faster the greens the better. One should understand that generally a fast green presents a better putting surface and, therefore, a truer test of one's skill. However, one must seek to achieve consistency of the greens over the entire course.

### GREEN SPEEDS STIMPMETER READINGS — 1978 U.S. OPEN

Last Practice Round	First Round	Second Round	Third Round	Fourth Round
Average 8' 8½"	8' 11½"	9' 4¼"	9' 5½"	9' 7¾"

#### Speeds for Tournament Play

10' 6"	Fast
9' 6"	Medium-Fast
8' 6"	Medium
7' 6"	Medium-Slow
6' 6"	Slow

It can be argued that a true champion should be able to determine the speed of the green for himself and that, therefore, making greens consistent in surface texture and speed takes something away from the game. Unfortunately because greens are mowed and maintained in the condition they are today, it is almost impossible for anybody to determine differences in speeds from visual inspection. Also, the Rules of Golf prevent him from using his sense of touch to test the texture of the grass.

If the condition of golf courses had not changed in the last hundred years because of advances in management practices and turfgrass research, then possibly there would be no reason for the Stimpmeter. However, courses have changed, and because course conditions are so good, we should try to present the players with similar conditions with regard to surface texture. Course architecture is therefore playing an increasingly important part in maintaining the challenge a golf course should offer. A well planned and executed shot should be rewarded.

During the last round, the average speed was 9 feet, 7 $\frac{3}{4}$  inches; 68 percent of the greens were within plus or minus 3 $\frac{3}{4}$  inches of the average, and 95 percent of the greens were within plus or minus 7 inches of the average. We consider this adequately consistent, the result of Young's close scrutiny each day of the Stimpmeter readings and his modification of the mowing and watering schedules.

Mowing procedure was also modified slightly. The first green at Cherry Hills, for example, features a large dip or valley across the front part of the green, rising to a plateau section towards the back. Either section could be used for hole locations. Wednesday's Stimpmeter measurement showed the speed of the front section to be approximately 9 feet; the back area was almost a foot slower. There was no apparent reason for this, although it did present a problem. Young, in consultation with USGA agronomists on the scene, decided to triple-cut the back section of the green on the mornings of the first and second rounds. On the final day of the Championship the back section of the green was still a little slower than the front, but only by two or three inches.

Prior to the 1978 Open at Cherry Hills, the Stimpmeter was used and measurements made for educational purposes. However, at Cherry Hills the data was actually used to manipulate and modify preparation of the greens and thus present the fairest challenge possible to every competitor.

A note of caution should be added. Readings of from six to seven feet are perfectly adequate for regular membership play; emphasis should be given to consistency rather than speed. If one attempts to maintain a green at speeds over nine feet for everyday play, it can become extremely costly because of the manpower required.

We must keep in mind that the lifeblood of golf is the challenge it offers; however, this challenge should be fair and one's ability to return a good score should not depend to any major degree

upon luck. Having presented the player with virtually a perfect undulating green on which to putt (whether it is good or bad for the game is a subject for debate), we have taken away the contrast which previously allowed him to determine the speed of each green he approached. The Stimpmeter allows us to give something back that we have taken; however, there are other areas where advances in technology may be taking some of the challenge from the game and these must be carefully considered and with advanced technical standards controlled.

Fighting fire with fire.

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