

## Best ball color still a question mark

Since the official opening of the first lighted regulation-length golf course last year, there has been a renewed interest in a very old question in golf: Is white really the best color for a golf ball?

It depends entirely on how you look at it, according to a report recently completed by General Electric, using some highly specialized instruments and some very human golfers.

For the tests, golf balls were painted with the highly reflective fluorescent colors of red and yellow-green, in addition to the normal white. Before tests were run on the golf course, the General Electric scientists wanted to determine what their instruments had to say about the colored golf balls.

As far as the spectrophotometer is concerned, white scores best with yellow-green a very close second, and red last. A more conclusive test was to be found on the fairways using golfers ranging from duffer to nearly professional.

A gray overcast afternoon in March was selected as the test day. The balls were dropped about 500 yards from the golfers without their knowledge. Even at this distance both the white and the yellow-green balls were quickly spotted. The golfers had to move up about 500 feet before the red balls were noticed.

Next, the balls were tossed two at a time into the air so observers could judge combinations of red/white, white/yellow-green, and red/yellow-green against the cloudy overcast sky background. Red was sighted best, with white and yellow-green about equal.

The real test came at night, at a golf hole set up especially for this experiment with both mercury vapor and quartz-iodine lighting. Again, similar test conditions existed.

On the grass and under the mercury lights, the yellow-green had only a slight edge over the white ball, with red coming in a poor last. At about 25 yards, for example, the red virtually disappeared.

No color was outstanding when the balls were tossed in the air.

Under the quartz-iodine lights white

was judged most visible, with yellow-green second and then red. This ranking was the same whether the balls were viewed on the ground or against the night sky. Fluorescent coating on the golf balls apparently is not an advantage under quartz-iodine lights because this system does not produce enough of the ultraviolet rays to spike up the normally reflective powers of fluorescent paints.

Later, the test data was compiled with a comparison of the various colored balls under the lighting conditions of daylight, mercury vapor, and quartz-iodine floodlighting, with the background for the ball being green grass, clear night sky, and overcast sky in the daytime. Although the results were mixed, in the total evaluation the yellow-green and white were nearly equal, with red coming in a definite third.

Instruments for measuring visibility normally associated with the laboratory were brought out on the greens to double-check these findings. An instrument known to lighting specialists as a Luckiesh-Moss visibility meter was used to check the relative ease of seeing the balls. Readings were again made under actual lighting installation on the 85-yard hole. The instrument readings confirmed the visual observations of the golfers.

A qualified "maybe" is the most General Electric lighting engineers will say on the color of golf ball question. For example, there may be "... significant visibility advantage to using specially treated balls for both daytime and nighttime play," states R. E. Faucett, senior application engineer of GE's Outdoor Lighting Department—which did the pioneering lighting installation at the first fully lighted regulation-length golf course, Tall Pines, near Philadelphia.

In the language of lighting engineers, more sophisticated data is required of both a subjective and objective nature to answer the question, "Red, green, or white. . . what color golf ball can be best seen at night?" •