LETTERS TO THE EDITOR

Spalding's statement on stainless steel shafts

Allow me to establish one point early—we believe in the stainless steel shaft. We will continue to manufacture golf clubs with this shaft, in spite of what is being rumored by our competitors.

The shaft has some very definite advantages and will play as well as or better than any shaft ever made. It can be made lighter; it is extremely strong and produces a feel that the better player finds superior not only to aluminum, but to carbon steel.

It also has some disadvantages: it is about twice as expensive as aluminum, which is once again as expensive as steel.

Because the shaft is so costly, it must always be positioned in a premium golf club. And the volume of shafts used in the top line clubs is substantially less. Therefore, the shaft manufacturers have to ask themselves how much money they want to spend to develop and produce a shaft that will always be limited to a small segment of the market. We see the stainless steel shaft as having a market position not only in 1970, but also in future years.

Included in this letter is a description of the physical testing that was done on the shaft, as submitted by James M. Long, Spalding's vice president of engineering. (Long has been primarily responsible for Spalding's development of both aluminum and stainless steel shafts.) It is also important that you know a

continued on page 16

LETTERS

continued from page 14

little about our field testing.

In addition to having a large number of sets out in the hands of our home professionals and some amateurs, we conducted a strictly controlled test in Tucson, Ariz., in February, 1969. We used players such as Al Geiberger, Johnny Pott, Al Mengert and Dave Stockton to test distance, control and feel. All proved excellent.

We then went to Dallas in April to cross-check our results and conducted a similar test with players such as Bob McCallister, Shelley Mayfield and Kermit Zarley. Again, the stainless shaft proved superior to steel in all areas, but was about the same as aluminum in distance. Records and charts of these tests are available and open for inspection at anytime.

There are two basic tests used to determine the physical properties for golf shafts: permanent deflection and impact strength.

The purpose of the permanent deflection test is to give assurance against shafts bending in play. Shafts are placed in a collet-like holder placed at an angle of 10°. A 15-pound weight (24 lbs. for irons) is hung 18 inches from the face of the collet. A reading is taken on the shaft before the weight is loaded on the shaft. The weight is hung on the shaft for 60 seconds. A second reading is taken after the weight is removed. The permanent set or bend in the shaft must not exceed .10 inches as noted on the dial gauge readings. Our stainless steel shafts meet this requirement.

The purpose of the impact strength test is to give assurance against shafts breaking in play. The test is performed in a piece of laboratory equipment designed for impact testing known as Izod test. Golf shafts are sawed into sample pieces approximately five inches long—these specimens are placed in a vice and struck with a pendulum hammer—a reading is taken in foot pounds of the amount of energy required to break the shaft. The impact strength must not be less than 20 foot pounds. Our stainless steel shafts meet this requirement.

We have had excellent experience to date with the stainless steel shaft in production and only a minor problem in the field. In the early shipment, we had a slight variation in surface finish. We complained and actually rejected some shafts for this reason. Unfortunately, Sandvik made a serious error in their desire to correct the finish problem. Sand-

continued on page 90

LETTERS

continued from page 16

vik re-polished some of their early production and in doing so, some shafts were ground "thin" in the butt end. We made the mistake of not running the repolished shaft through our test procedure. As a result of these human errors, we have experienced breakage in the field of approximately 97 shafts returned broken to date. This figure is out of some 84,000 shafts that we know are in play at this time. This is a product failure ratio of less than one-eighth of one per cent.

This staggers us and is considered a serious product failure by our team. However, it is not an indication of inherent weakness in the shaft. Our stainless steel shafts meet all the physical requirements currently established for golf club shafts.

I believe the stainless steel shaft will play an important part in future golf club design. Stainless steel is a very reliable, tough material. When built into a golf shaft, it produces a dynamic, resilient, lightweight golf shaft.

Stainless steel is true, pure, strong—like a diamond. Now, glass will do the same job as a diamond aesthetically, but it's not a diamond it never will be. Copper, nickel and chrome-plated shafts are aesthetically equal to stainless steel, but they are not pure, tough, durable, raw stainless steel and they never will be.

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Editor's note: This statement on Spalding's stainless steel shafts provides some of the information which was not available last month when we published "The Stainless Steel Dilemma" (GOLFDOM, *January, 1970, page 57).*