GOVERNMENT AIDS SHAFT MANUFACTURERS

Establish Hickory Shaft Code

AT VOLUNTARILY CALLED MEETING

IN accordance with the action of a general conference representing the manufacturers of hickory golf shafts and golf clubs, distributors, and others interested, held in Columbus, Ohio, June 14, 1929, the Department of Commerce submits for approval of the industry the following Recommended Commercial Standard for Hickory Golf Shafts.

I. Scope

1. The specification herein given is for semi-finished hickory golf shafts, known in the trade as "B" form shafts for iron headed clubs. It covers:

1. Size and general requirements for quality.
2. Grades based on a mechanical test.
3. Methods of testing.

SITTING in conference with experts from the Bureau of Standards of the Department of Commerce, members of the Hickory Golf Shaft Ass'n, recently met in Columbus, O., and established standards of quality that will henceforth assure uniformity in their product. The recommendations will permit accurate grading of hickory shafts and thus simplify the ordering of stocks.

The recommendations, and the proceedings of the conference as released by the Bureau of Standards are given here.

II. Material and Workmanship

2. All shafts shall be made from tough, resilient, high-grade hickory that is free from knots, checks, worm-holes, and other injurious defects. They shall be smooth, clean, and of good workmanship.

III. Detail Requirements

3. *Dowels*—Dowels shall be turned from straight-grain "squares" to a cylindrical form which, when seasoned to a fully air-dried condition of approximately 15 per cent moisture content, shall be not less than 15/16 inch in diameter.

4. *Shafts*—Shafts shall be turned from dowels that have been thoroughly seasoned to a moisture content of not less than 5 per cent and not more than 10 per cent, based on the dry weight of the wood, and averaging approximately 8 per cent, and shall conform to the dimensions shown in Figure 1.

5. *Tolerances*—A plus tolerance of 1/64 inch in diameter will be allowed in not more than 25 per cent of the shafts of a given lot, while a minus tolerance of 1/64 inch will be allowed in any number.

6. *Straightness*—The axis of the shaft shall at no place in its length be more than ¼ inch from a straight line connecting the axis at the grip end with the axis at the smallest diameter.

7. *Grain* — "Goose," "Owl," and "Lark" grade shafts shall be reasonably straight-grained for at least 20 inches from the hozel end.

8. *Stiffness* — Shafts shall be graded in accordance with Table I.

Table I, below, shows standard grades of hickory shafts for iron clubs:

IV. Methods of Testing

10. *Size*—Before grading, the diameters of all shafts shall be measured with steel snap gauges.

11. *Grades*—For grading shafts, the machine shown in Figure 2 or its equivalent shall be used. The shaft is placed across the fulcrum with its hozel end under the stationary hook and the handle end resting free beneath the sliding hook, which is moved downward by foot or hand power, engaging the shaft and bending it until it comes in contact with a stop block. The load indicated by the scale is the actual

TABLE I. STANDARD GRADES OF HICKORY SHAFTS FOR IRON CLUBS

Grade		Minimum Load in Lbs.
Goose	(G)	40 and over
Owl	(O)	34 to 39, incl.
Lark	(L)	28 to 33, incl.
Falcon	(F)	Below 28

9. *Average Quality*—Customers' orders in each Commercial Standard grade shall contain shafts having the following proportion of actual loads unless otherwise agreed upon between buyer and seller.

Grade	Actual Load, Pounds	Proportion Within Grade, Per Cent
"Goose"	40-43	Not more than 40
"	44-46	Not less than 45
"	47 and over	Not less than 15
"Owl"	34-36	Not more than 50
"	37-39	Not less than 50
"Lark"	28-30	Not more than 50
"	31-33	Not less than 50

load on the shaft. Fractions of a pound shall be disregarded in determining the grade, so that the observer uses the nearest whole number below the load actually indicated. The shaft shall be so placed that the growth rings are vertical, and after testing in one direction, the shaft shall be rotated 180 degrees and again tested. The lower reading of the two shall be used for grading.

12. *Testing Machine*—The testing machine, as shown in Figure 2, consists of two hooks and a fulcrum block, which is secured to the platform of a self-indicating scale, such as the Toledo Style 850 F of 100-pound capacity or its equivalent, the full downward movement of which shall equal 9/32 inch, with a tolerance of plus or minus 1/32 inch. The bench on which the machine is mounted shall be sufficiently strong so that the deflection at its center, when the scale is fully loaded, shall not exceed 0.002 inch.

General Conference

1. Pursuant to a request from the joint committee of the Hickory Golf Shaft Manufacturers' Association and the Golf Club Manufacturers' Association, a general conference of golf shaft and club manufacturers, distributors, and others generally interested was held on June 14, 1929, at the Deshler-Wallick Hotel, Columbus, Ohio, to consider the establishment of a Commercial Standard defining grades of Hickory Golf Shafts.

2. The following individuals were present: Geo. O. Bassett, owner, Bassett Hardware Manufacturing Co.; Harry C. Bratt, vice-president, Dayton Handle & Golf Co.; Geo. A. Bush, president, Bush Bros. & Co.; M. R. Campbell, Jr., president, M. R. Campbell, Inc.; L. W. Crandall, president, The Burke Golf Co.; C. W. Custenborder, superintendent, Vulcan Golf Co.; R. E.

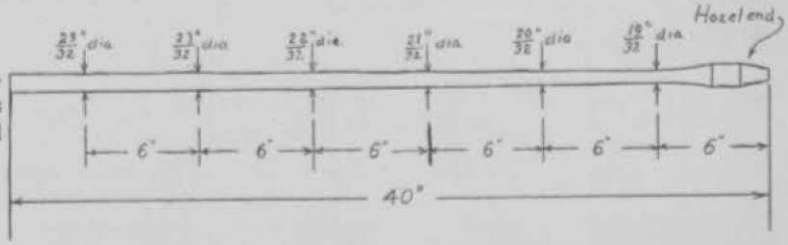

Figure 1. Standard dimensions for wood-shafted irons.

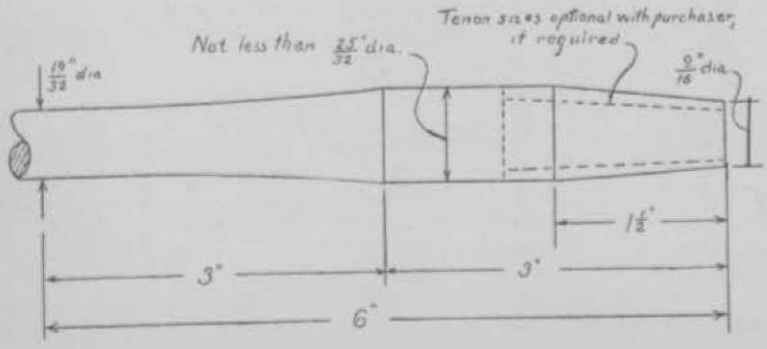

Figure 2. Details of hozel end, standard golf shaft.

Dickinson, president, Golf Shaft and Block Co.; C. G. Jansky, superintendent, Wilson Western Sporting Goods Co.; A. C. Link, vice-president, L. A. Young Co.; N. C. Lyon, manager, Cumberland Hickory Co.; W. A. McMinn, manager, W. W. McMinn; Geo. W. Mattern, sales manager and vice-president, Crawford, McGregor & Canby Co.; Geo. C. Mattern, Jr., engineering department, Crawford, McGregor & Canby Co.; R. B. Minton, vice-president, T. W. Minton & Co.; C. H. Rickey, vice-president, R. H. Buhrke Co.; F. M. Staggs, superintendent, Bush Bros. & Co.; Alexander Turner, plant manager, The Burke Golf Co.; Harry H. Steidle, Division of Trade Standards, Bureau of Standards, Department of Commerce.

The conference was presided over by Mr. Harry H. Steidle of the Bureau of Standards, while Mr. L. W. Crandall outlined the need for standard grades of hickory golf shafts.

Several minor changes were made in the specification as proposed, and upon motion by Mr. L. W. Crandall, seconded by Mr. Geo. C. Mattern, the altered Commercial Standard specification was unanimously approved.

A stiffness testing device was installed for a practical demonstration of mechanical testing, which indicated the simplicity and effectiveness of testing hickory golf shafts by this method.

Effective Date

September 1, 1929, was fixed as the effective date for new production of Commercial Standard Hickory Golf Shafts.

Certification Plan

7. The conference voted its approval of the certification plan to be used on hickory golf shafts made in accordance with the Commercial Standard specification. This plan, operated by the Bureau of Standards, provides a method of listing those companies who are prepared to certify to their consumers that hickory golf shafts made by them meet all the requirements and tests as specified in the Commercial Standard.

The conference also recommended that all shafts should be grade marked and accompanied by a certificate of quality.

Standing Committee

A standing committee was appointed to represent the various phases of the industry and to receive all comments and suggestions for the improvement of the specification. At the expiration of six months from the date on which the standards become effective, the standing committee will meet to consider what changes, if any, shall be made.

The standing committee consists of the following: Mr. L. W. Crandall, The Burke Golf Company; Mr. Geo. C. Mattern, Crawford, McGregor & Canby Co.; Mr. A. C. Link, L. A. Young Company; Mr. William Cason, N. C. Blanchard Company; Mr. M. R. Campbell, Jr., M. R. Campbell, Inc.; Mr. N. C. Lyon, Cumberland Hickory Company.

Three professionals and three golf equipment distributors will be named later for service on this committee.

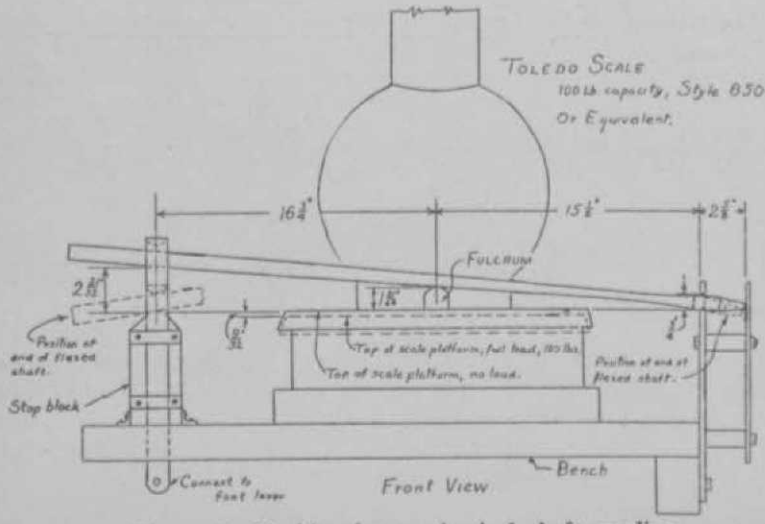

Figure 3. Machine for mechanical shaft grading.