"Harmonizing" A Set of Clubs

By NORMAN D. MATTISON

THE art of keeping one's eye on the ball and one's head down has long been considered fundamental to good golf, but its importance now-a-days is relatively less than it was formerly. Faulty shots are now known frequently to be due to certain clubs in a set which in some particulars are "out of kilter" one with the other; clubs which make such a demand on the player's sense of body balance that he cannot concentrate on much else.

Almost every golfer has a certain club which gives him an increased sense of surety when he is making his shots, and other clubs which never cease to give him a qualm when he plays them. It is gratifying to know that if all of his clubs are in harmony as to certain physical factors, then they would all feel the same and would all be favorites. Indeed, when the golfer buys a new club and tries to determine how it feels, he is unconsciously attempting to find out how the club will harmonize with the other clubs in his set.

The literature of golf has considered so much in detail the player in action and from so many aspects, that his playing implements in comparison have been somewhat neglected. It is the purpose of this article, therefore, to consider the statics of a golf club as a unit, and also to discuss one of the newer phases of golf which is commanding the attention of all students of the game. I refer to the "harmonizing" of each club of a set with all the other clubs of the set, for experience proves this to be an undoubted aid in improving one's game. When these matters are more generally understood and their importance realized, then the golfer will no longer consider only the usual factors of length and weight and feel of a club but will interest himself in two other factors, later to be discussed, which are relatively of much greater importance.

The older order of judging the playing value of a golf club by its "heft" promises soon to become obsolete, for the balance of a club as it is judged by the muscle-joint sense bears no direct relation to its effectiveness in play and is too empirical to be accurate. For the purpose of precision, which until comparatively recently has been regretfully lacking, it is necessary therefore to consider at first three physical factors which every club possesses: these are length, weight, and a centre of gravity. None of these is difficult to determine. The length is measured from the end of the handle to a point where the diameter of the shaft is prolonged into the club head: the weight is taken on an accurate balance scale; and the centre of gravity is determined by balancing the club on a knife edge or similar fulcrum.

These preliminaries lead up to two other factors which will soon be as much a part of golf parlance and as familiar to all players as the terms birdies and bunkers: these are the "radius" of a club, and also its "moment." Neither presents any especial difficulty, but both must be understood if the player is desirous of having instruments of precision with which to make his shots.

The radius of any club is the distance from its balance point or centre of gravity, to the end of the handle. It is evident that a number of clubs of the same weight and length may all have a radius different from each of the other ones. Some clubs may be heavy in the head and others heavy in the handle. Obviously, the clubs which are heavy at the striking end will have a longer radius, those which are heavy at the handle end will have a shorter radius. None of these clubs would have the same feel, or "harmonize" with any of the others.

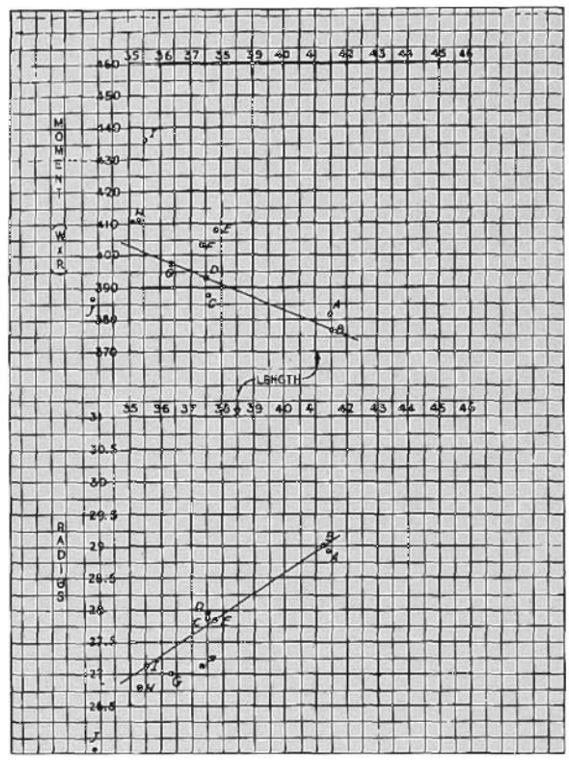
This is briefly the preface to the story of the usual set of clubs. The player is required, consciously or unconsciously, to adjust himself to this unbalance of his playing implements, to regulate his own physical forces so that he will compensate for his inaccurate clubs. I wonder how many times a poor shot has in reality been due to unbalanced clubs, rather than to taking one's eye off the ball or lifting one's head. Countless, I am certain.

The radius of a golf club is only the introduction to the story of a harmonized set; the "moment" of a golf club is the gist of the story to follow. When a golf club is put into motion its weight may be regarded as concentrated at its balance point, or centre of gravity. Thus a club, for example, may weigh 15 ounces and have this weight actually distributed over a length of 38 inches, and also have a centre of gravity 23 inches from the end of the handle. These factors give this particular club a certain "feel." Theoretically, if this weight of 15 ounces could all be concentrated at the centre of gravity 28 inches from the end of the handle, then swinging this weight at this distance from the end of the club would still have the same feel, because its moment is the same. If, however, this club of 15 ounce weight were to have a radius of 26 or 30 inches. then it would in each case have a different feel, because it would have different moments. Therefore, a "moment" may be defined as the product of the weight of a club multiplied by its radius.

This is a brief summary leading up to the method of harmonizing a set of golf clubs, first described by Mr. J. Lewis Stackpole, a well-known attorney and himself an ardent golfer. His dedication of these principles to golf and golfers is an important milestone on the road of progress, once the method is carefully worked out by all studious players, and then generally applied.

A typical example of lack of harmony in a set of clubs is indicated in the accompanying tabulation, and also in the charts which are used as the basis of analysis. This player's game is consistently in the low eighties, but he found that he always had to play certain of his clubs in this set differently from the others. After a "player's balance line" wa s determined in each of the two charts, it was learned that the moment of some of his clubs was too high, in others, too low: and these required to be changed so as to bring them nearer to his balance line.

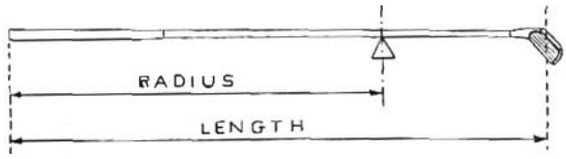
In the radius chart, likewise, certain clubs were found to have too short or too long a radius to be on or near this balance line, and therefore in harmony; and these also were altered so as to conform with the others. This golfer's experience with a set of clubs which are balanced is that he plays all of them with the same swing, he does not have to make allowance for the different clubs, and he has confidence in all of them. To correct defects of balance means improvement.



		LENGTH	WEIGHT	RADIUS	MOMENT W. × R.
A	DRIVER	41.37	13.25	28.87	382
B	BRASSIE	41.25	13.00	29.00	377
C	DRIVING IRON	37.50	14.00	27.75	388
D	Nº2 IRON	37.50	14.12	27.87	393
E	MID IRON	37.75	14.75	27.75	409
F	MASHIE IRON	37.25	14.87	27.12	403
G	MASHIE	36.25	14.75	27.00	398
H	MASHIE NIBLICK	35.25	15.37	26.75	411
I	NIBLICK	35.50	16.00	27.25	436
J	PUTTER	33.75	15.12	25.62	387

A TYPICAL SET OF CLUBS

Showing the usual lack of harmony. The charts of this set are shown above with a "player's balance line" for each chart



A CUSTOM-MADE GOLF CLUB

This driver was specially made for the author to harmonize with the other clubs of his set, according to the following specifications: length, 43.25 inches; weight, 13 ounces; radius, 30 inches; moment, 390 inch ounces