The Royal and Ancient Golf Club of St Andrews
Fife, Scotland, KY16 9JD

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8th October 2002

To: **ALL MANUFACTURERS**

OVERALL DISTANCE STANDARD

Further to my memorandum dated 30th January 2002, I am writing to update you on the progress we are making towards updating the current Overall Distance Standard. As you will know, my previous memo contained a proposal for a 'two phase' introduction of an updated test – including a proposal to move the whole test indoors (Phase I) and to change the test club, the calibration ball and the standard launch conditions (Phase II). Comments have been received from a small number of manufacturers and these have now been reviewed and considered by the R&A's Implements and Ball Committee.

IMPLEMENTATION OF PHASE I

Please be advised that Phase I of the updated test will be implemented for all of the balls submitted for inclusion on the January 2003 Conforming Ball Lists and beyond. Therefore, this applies to all balls received on or after 24th October 2002.

Phase I of the updated test will replace the current three level test, most significantly by removing the necessity for testing balls outdoors. The Indoor Test Range (ITR) and the mechanical golfer will each be used to determine the aerodynamic properties of golf balls and the actual launch conditions. Computer technology will then be used to determine the ball's Overall Distance and Symmetry.

The current calibration ball and the current wooden-headed golf club mounted in the mechanical golfer will remain unchanged under Phase I, and the same set-up launch conditions will be used (i.e. 10 degrees launch angle, 42 rev/sec backspin and 235 feet per second ball velocity). No change will be made to the current ODS limit (i.e. 291.2 yards plus test tolerance of 5.6 yards).

PHASE II – DISCUSSION POINTS

Phase II of the proposed update seeks to change the test club, the calibration ball and the standard launch conditions. Whilst no decision has been taken on any of these issues as yet, we would like to update you on the various options that are under consideration. We would also like to take this opportunity to invite your further comments on these issues.

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Items under consideration:

1. Launch Conditions

There is a view that the standard test launch conditions should be more reflective of how Tour professionals are hitting the ball today. As mentioned in my last memo, we have been collecting launch data from professional golfers and we are proposing to use this information to help us determine the most appropriate test conditions for the future. There are many possibilities open to us, including setting the test conditions to reflect:

(i) The average launch conditions of all Tour players;
(ii) The average launch conditions of the longest drivers on Tour (whether it be the top 10, 25 or 30);
(iii) The launch conditions which match a certain percentile (e.g. 60th, 75th, 80th, 95th, or 99th).

2. Test Club

We have received some recommendations for club head choices. In some cases these are specific brands and models, but others have recommended that a non-branded clubhead be used.

As with launch conditions, our goal for updating the test club is to use a clubhead that closely matches the parameters of a typical driver used on the PGA Tours. To identify what these parameters should be, we have created a profile of a typical Tour driver. Information provided over the past two years by Darryl Survey in the U.S. and Sports Marketing Surveys in Europe has been used to choose a list of "typical" drivers in use on Tour and the following range of measurements was made:

Parameter	Nominal	Tolerance
Face depth	1.85 (47)	0.15 (4)
Face width	3.85 (98)	0.25 (6)
Mass	198	5
Volume	310	40
Lie	60	2
Loft	8.5	1.0
Bulge	13 (330)	2 (50)
Roll	13 (330)	2 (50)
CG (face centre) up	0.20 (5)	0.10 (2.5)
CG (face centre) to heel	0.20 (5)	0.10 (2.5)
CG (face centre) back	1.30 (33)	0.05 (1.5)
CG (above ground)	1.10 (28)	0.15 (4)
CG (from shaft axis-toe)	1.20 (30)	0.20 (5)
CG (shaft axis-back)	0.80 (20)	0.20 (5)
Moment of Inertia (pitch)	2700	300
Moment of Inertia (yaw)	4800	400
Moment of Inertia (roll)	5000	500
COR	0.810	0.020
All linear dimensions are in inches and (mm)		
Mass is in grams		
Volume is in cc		
Angles are in degrees		
Moment of Inertia is in gm-cm^2		

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Some samples of non-branded ("generic") clubs have been obtained from a clubhead manufacturer. However, further consideration will be given to branded clubs.

3. Calibration Ball

Several specific balls have been proposed for use as a calibration ball. Another proposal calls for the creation of a specific "test ball".

Whichever option is eventually pursued, it is proposed that a ball will be chosen according to the following requirements:

Ball velocity	75 +/- 2 ft/sec return speed when launched at a COR-Test calibration plate at 160 ft/s under the standard procedure.
Backspin	Same spin properties as current calibration ball, +/- 120 rpm when tested under the same impact conditions (test setup: 2520 rpm).
Variability	Choose ball type with the lowest standard deviations of all launch conditions. Minimums using test setup: 0.5 ft/s, 1.0 rev/s, 0.2 deg.
Durability	Minimum decay in impact results (speed, spin, and angle) in 200 hits.

4. Mechanical Golfer

A new mechanical golfer, similar to that used by many golf equipment manufacturers, is being built to replace the 26-year old "Iron Byron".

5. ODS Limit

Once a decision has been taken with regard to the new test launch conditions, a revised ODS limit will be established.

Comments

As intimated above, all manufacturers are now invited to participate further in the process of identifying an appropriate ball, club and launch conditions to complete Phase II of the test update. Any comments on the above discussion points, or views on any other issues that need to be considered – including whether there is any need to change the current test set-up at all – should be sent to the R&A's offices in St Andrews, marked for my attention, no later than 19th November 2002.

Yours sincerely

David Rickman

DAVID RICKMAN
Rules Secretary