

## WHAT'S CHANGED IN GOLF EQUIPMENT

**The clubs you got for Christmas 2001 may look the same as the ones you see in golf stores today, but they're vastly different. Tom Mase, Bently Endowed professor of mechanical engineering at California Polytechnic State University and executive vice president of research, development and innovation at Hot Stix Golf clubfitting center in Scottsdale, explains why.**

By Caroline Stetler November/December 2007 Golf for Women Magazine

### DRIVER

"Yesterday's driver heads were smaller, heavier and had thicker walls, which kept the club's center of gravity (CG) high and forward in the head. As a result, players hit lower, shorter shots than they do with today's drivers. The clubheads also had a much lower moment of inertia (MOI, or resistance to twisting at impact), which made them less consistent on off-center hits. Today's driver heads are bigger in size and designed with thinner walls, allowing weight to be placed in positions that produce higher, straighter and longer shots."

### FAIRWAY WOOD

"The new fairway woods are easier to hit, partly because they're the size of old drivers. But they're not just bigger: Through improved technology, the CG is lower and deeper so it's easier to launch your ball off the fairway, and they have rounded soles that are designed to produce less drag and move more easily through the grass. The older fairway woods, like the older drivers, were smaller, had higher CGs and launched the ball lower, and their soles were not very forgiving."

### HYBRIDS

"This category of clubs is new, but it's become a great long-, mid- and, sometimes, short-iron replacement. Unlike an iron, the hybrid launches the ball high and far because it's a shell-like club, very similar to a 3-wood or a driver. That helps put the CG in a position that improves your launch and makes it hard to hit a topped shot. In some hybrids you'll see weight plugs toward the back that help get the ball up in the air faster. The sole is wide, so it glides through the turf more easily than the equivalent iron from a few years ago."

### IRONS

"Today's game-improvement irons are very easy to hit compared with their predecessors. They have wider, rounder soles and a lower CG to launch the ball higher in the air and combat the lack of spin generated by slower swing speeds. And the thinner clubfaces allow manufacturers to place more weight in the perimeter of the club, which increases forgiveness and produces straighter shots. The feel is by no means sacrificed, thanks to vibration-dampening plastics placed in the back of the head."

### BALLS

"When wound balls were replaced by two-piece balls a decade ago, the covers were still designed to keep spin low, which made it difficult for women to get much distance out of their shots, as the ball never got high enough in the air to carry very far. Players with slower swing speeds need velocity and lift from a golf ball. The manufacturers are finally combining high-speed (supersoft) cores with dimple patterns that create more lift—which equals distance."

## WHAT CLUBS TO TRY

### **A 460CC Driver**

You may think the driver you bought three years ago is big, but odds are the head size is no more than 380cc, and the leap from that to 460cc dramatically affects performance. The larger heads provide a much higher moment of inertia, or resistance to twisting at impact, which means your mis-hits will travel almost as far as your dead-center shots. The larger faces are also more forgiving, and the combination of lower, deeper centers of gravity and higher lofts, two other trademarks of the newer designs, adds up to straighter, longer shots.

### **A Hybrid**

No recreational golfer should carry a 3-, 4- or even a 5-iron today. The hybrid is a combination fairway wood and iron that features the best of both clubs: the distance and playability of an iron with the height and forgiveness of a fairway wood. It will make the long approach shots you once dreaded your new favorite shots. It's also a multipurpose club that can be used from the rough and bunkers with remarkable ease, and it even doubles as a great chipper. Some sets offer hybrids all the way down to the short irons.

### **A Super-Mallet Putter**

Getting close to the hole on long putts is all about distance control. If you miss the center of the putterface on a traditional putter by even a fraction of an inch, the ball won't roll as far as you'd planned. Super-mallet putters make you more consistent because they are bigger and squarer in shape, which makes them more resistant to twisting at impact. So those off-center putts travel almost as far as the dead-center ones.

### **Super-Game-Improvement Irons**

Perhaps the most important change you can make to your current bag is to ditch your old irons and invest in a new set. There's a whole new category of clubs: Super-game-improvement irons are designed with lower centers of gravity to help you launch the ball higher, which results in added distance and control. The larger face areas make them more forgiving on off-center hits, and the wider soles allow the club to glide through the turf and make clean contact from a variety of surfaces. Combined with the high-quality, lightweight shafts that come standard in most brands, these clubs beat anything you purchased five years ago. Many women's models also have bigger loft gaps, which enable you to see a real difference in the distance you hit each club.