

PRECIOUS METALS

*A game-changing club innovation
turns 30 years old*

BY VARTAN KUPELIAN

IT TAKES A DREAMER to change the course of history.

In 1979, Gary Adams unveiled his first metal driver. The TaylorMade club, soon to be christened with the unique nickname, Pittsburgh Persimmon after the steel capital of America, had plenty of detractors. That wasn't unusual. Most things new and different are met with skepticism.

Of course, Adams wasn't the first to come up with the concept of metal golf clubs. The very first patent for a metal club with the tendencies of a wooden club was issued in 1891 in Edinburgh to Scot William Currie. Later, clubs with aluminum heads and steel shafts were commonly seen at driving ranges. Because they were impossible to break, they became staples as the free clubs offered by ranges to novice golfers whose swings were more likely than not to produce unpredictable and damaging results. So range operators went with the safe option of unbreakable metal/aluminum drivers.

Adams had no doubt his metal driver was superior and would have mass appeal.

"Golfers are going to buy this," he told acquaintances. He was correct.

Adams' metal driver became the most sought-after driver of its time, drove wooden clubs into obsolescence and sent every equipment manufacturer scurrying to get into the category. He sold his clubs faster than he could make them.

When Adams died in 2000 after a long bout with cancer, his legacy as a pioneer in the equipment industry was secured many times over.

PHOTO BY ROBERT GRIER





THE EMERGENCE OF THE METALWOOD IS HERALDED BY MANY TODAY AS ONE OF THE THREE MOST REVOLUTIONARY AND IMPORTANT EQUIPMENT DEVELOPMENTS IN GOLF HISTORY, ALONGSIDE THE MODERN BALL AND GRAPHITE SHAFTS.

Now, on its 30th anniversary, the metalwood is entrenched as an indispensable component of the game we play. Moreover, it has revolutionized golf and has had an enormous influence on what has transpired in the equipment industry during the intervening years.

Without the late Adams' craft and energy, there's no telling what twists and turns golf may have taken over the past three decades. Because of it, the emergence of the metalwood is heralded by many today as one of the three most revolutionary and important equipment developments in golf history, alongside the modern ball and graphite shafts.

Only the order of importance of those three advancements might be questioned. What cannot be disputed is that they belong on the very short list of developments that changed the game.

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"GARY HAD A VISION that very few people in the golf industry had," said Vale Adams, Gary's father, who as the longtime PGA professional at McHenry (Ill.) Country Club started his son on a career path in golf. "Gary was a much sought-after speaker at PGA meetings, because he could see in the golf industry what most people couldn't see. They wanted to pick his brain."

Adams was a salesman for a golf range supplier in the early 1970s when he delved into the notion of metal drivers, the kind that were used at ranges by novice golfers. He observed that the new two piece balls went farther than balata models when struck by metal clubs, including peri-meter-weighted, investment-cast irons

that had come of age within the past decade.

He began to design a metal driver. In 1979, at the PGA Merchandise Show, Adams unveiled a trunk-load of metal drivers bearing the TaylorMade Golf name.

Adams' friend and partner in the TaylorMade venture was Eddie Langert who, in the late fall of 1980, came up with a guaranteed sales approach to pro shops. It was a variety pack of 28 clubs in a cardboard display—the first-ever point-of-purchase display that is so widely used today. Any clubs that weren't sold would be purchased back by TaylorMade. The displays sold out.

"It really launched us," Langert said.

Ron Streck became the first golfer to win a PGA TOUR event using a metal driver with his victory at the 1981 Houston Open. Streck came from far behind with a third-round 62, a fact that meant he didn't get a lot of airtime on television, so the circumstances of his victory weren't immediately heralded. Even Adams wasn't aware of Streck's achievement until much later. Jim Simons was next, winning Bing Crosby's clambake at Pebble Beach Golf Links the next winter. Frank Thomas, the former longtime U.S.

Golf Association technical director, points to the TaylorMade metalwood as a watershed

moment in equipment annals.

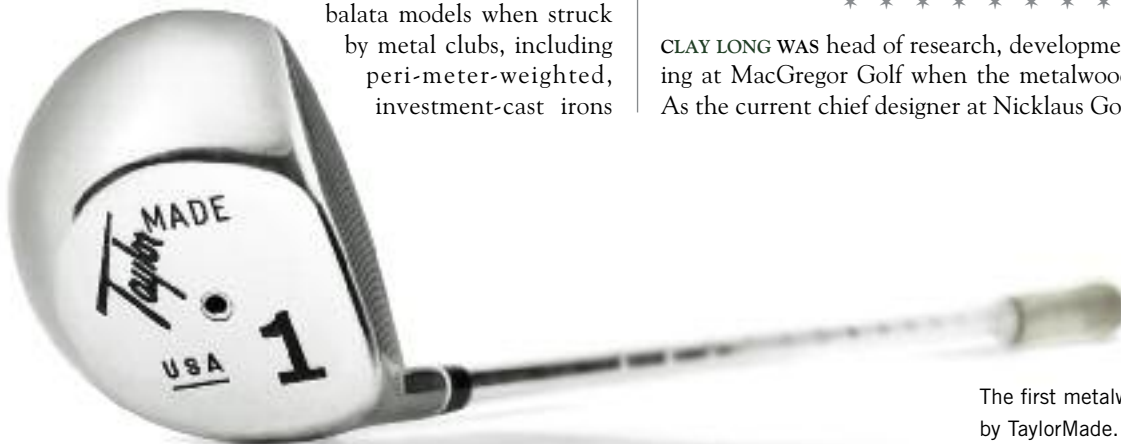
"It was a breakthrough," Thomas said. "There is no question the TaylorMade Pittsburgh Persimmon club really and truly broke the barrier."

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CLAY LONG WAS head of research, development and engineering at MacGregor Golf when the metalwood revolution hit. As the current chief designer at Nicklaus Golf Equipment, he



Gary Adams unveiled his metal driver at the 1979 PGA Show.



The first metalwood manufactured by TaylorMade.

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—CLAY LONG, CHIEF DESIGNER FOR NICKLAUS GOLF EQUIPMENT

is the man responsible for the design and manufacture of the clubs Jack Nicklaus has used to such impressive success over the years.

The shift from wooden clubs to metal was stunning and immediate, according to Long. “We went from [manufacturing] 1,200 woods a day to 50 a month during 1989,” Long said of MacGregor’s plant in Albany, Ga. “We made virtually no woods, except a few custom.

“In early ’84, there was sort of a little bump on TOUR, then it kind of slowed down. It looked like [the shift to metal] wouldn’t have any legs, but it picked up the next year and grabbed a hold. It was obvious these clubs were much easier to produce, more consistent and had nice playing characteristics once you got over the difference in sound. There were a whole lot of reasons why metalwoods took hold.”

The ability to customize metalwoods was a key factor. “I think people forget how woods were made and sold,” Long said. “The driver wasn’t sold in different lengths. They came standard. You found a driver that worked good for you and stuck with it. You couldn’t buy a driver to fit a swing by loft. Professionals were the exception.

“When we built clubs for Jack, we could customize, but that was pretty much just for the TOUR player.”



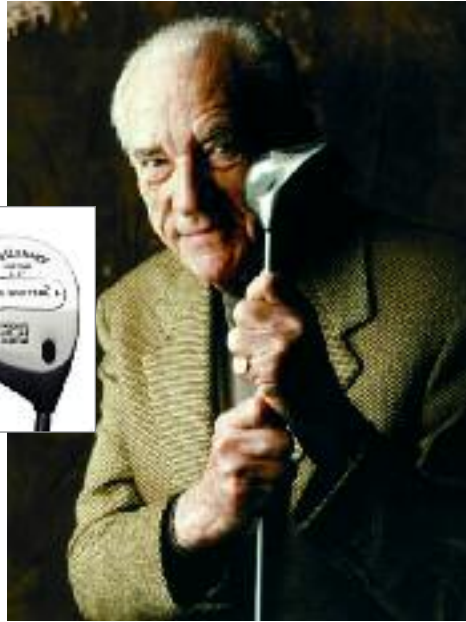
Clay Long attributes customization as one reason metal took hold.

The metalwood clubs didn’t allow for much adjusting, so they were produced in a wide variety of lofts, changing the entire complexion of what drivers and fairway woods have become today.



The clubs in Trevor Immelman’s golf bag.

Right: Callaway Golf Company Founder Eli Callaway helped advance the metal cause in 1991 with the introduction of the company's Big Bertha driver, inset.



"It opened a huge door of custom fitting that the average consumer never had available to him before," Long said.

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IT ALL BEGAN WITH the TaylorMade metalwood, but it certainly didn't end there. The development of metalwoods took a quantum leap in 1991 when Callaway Golf unveiled its Big Bertha driver. The Big Bertha, with a head volume of 190 cubic centimeters (ccs), was a radical departure in size. It dwarfed the TaylorMade metal driver—and every other driver on the market. Callaway didn't stop with just Big Bertha. (The Big Bertha line was named after the famous German weapon, the Big Bertha Howitzer.) Great Big Bertha came next, followed by Biggest Big Bertha and its titanium relatives. Instantly, metalwoods ballooned as every equipment manufacturer rushed to get a piece of the pie.

There was another world-wide development, which further spurred the evolution, and it had nothing to do with golf. It was about global politics and the end of the Cold War in the

early 1990s. There was a major downsizing of the aerospace defense industry, which manufactured lightweight but very strong materials, like titanium and composites (graphite). Materials that were once limited by high cost to only government applications were now available at greatly reduced prices. Suddenly, there was a glut of titanium on the market.

In addition, engineers, scientists and researchers were now looking for someplace to land in the job market. From building rocket boosters and war planes, those same wizards switched to designing golf clubs. Just like that, golf equipment became rocket science, and all bets were off. The parameters of what golf clubs could become were expanded and, frankly, limitless.

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AS METAL DRIVERS grew and grew, the United States Golf Association stepped in to limit their size to 460ccs. When the faces got too hot, the governing body imposed limits to the spring-like effect. Again, not surprisingly, the scientists and designers had to find other ways to optimize the performance of metalwoods, most notable among them new materials, weight ports to reconfigure the characteristics of a club in a matter of seconds and, finally and most recently, new shapes.

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The clubs in Chad Campbell's golf bag.

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For two decades beginning in 1990, the changes in metal-wood technology, materials and designs were greater than equipment technology in all other ball and stick sports put together. The percentage of metalwoods now designed and produced without graphite shafts is negligible. Graphite is not only the material of choice for shafts, but also now is used in the clubhead to make it lighter. Less weight meant engineers could design bigger clubheads with more perimeter weighting and larger sweet spots. The science and the innovation flew off the charts.

Today, at 460cc, drivers are more than three times the size of the original Pittsburgh Persimmon and more than twice the volume of Callaway's Big Bertha. Titanium remains an integral part of the driver but is married to other materials, treatments and design concepts.

Some of those remain effective today; other technologies have come and gone. Nicklaus Golf introduced cryogenically treated metal faces but moved away from it when larger clubheads provided a suitable, less expensive, option.

Other manufacturers like Tour Edge and MacGregor developed and embraced cup-face technology to enhance

forgiveness and variable-face thickness for improved distance and accuracy. TaylorMade was the first to introduce systems featuring movable weights.

As Long said, metalwoods offered enormous options for custom-fitting, and soon 460cc metal heads were featuring custom face angles to counter hooks and slices and adjustable lie angles.

Most prominent among the innovations within the past five years is the geometric shape of clubheads. From traditional and pear-shaped, Callaway and Nickent brought square drivers and eventually square fairway woods to market. Other manufacturers, like Adams, TaylorMade and Tour Edge, preferred geometric shapes as a better alternative to shift the center of gravity and perimeter weighting to optimize benefits to recreational golfers.

Other advances include the improved grade of titanium—beta-titanium and super-beta—now used by manufacturers. Tour Edge uses magnesium for the crown to reduce weight where it is of least consequence in the design and to lower and deepen the center of gravity. Those two factors help get the ball in the air more easily and keep it there longer. Tour Edge is a leader in non-weld construction, also known as combo-brazing, which securely joins clubhead materials without creases.

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The clubs in Tiger Woods' golf bag.

Long, a master at his craft, has created premium products in the Nicklaus line for a decade. The latest Nicklaus Golf Dual Point Technology 460cc driver offers a four-piece forged titanium head. The design concept moves the center of gravity to align with the optimal point on the face for maximum energy transfer from clubhead to ball. A multi-layered face is thinner on the edges and thicker in the center.

That kind of versatility and flexibility of design is “one of the things that really made metalwoods so much more playable and usable, way beyond the fact of the higher MOI [moment of inertia],” Long said, and it is also why TaylorMade’s original metalwood has had such a lasting impact on the industry.

“One of the important benefits of the club was that it was more forgiving,” said Thomas. “By taking the mass to the periphery of the structure and making it hollow meant the weight could be on the outside for a higher moment of inertia.

“The Big Bertha used the innovation of the TaylorMade clubs and was able to keep the mass down a little bit by not having a hosel. Gary Adams did to wood clubs what PING did to the iron clubs. It gave you more forgiveness.”

FREQUENTLY OVERLOOKED in examinations of the metalwood’s history, beyond the technology and evolution from steel to titanium to multi-metals and geometric shapes, is the simple fact that the product made the game more fun for recreational golfers. In an era when golf is challenged by high costs, a sagging economy, the diminishing nature of leisure time activities and player-retention issues, it has become critical for the game to continue to offer value as entertainment and fun.

“That’s exactly right,” said Vale Adams, who at 89 still manages to play twice a week. “It allows me to be more interested in the game, hit it farther and straighter. That’s what happens when you make the sweet spot bigger. It makes the game more fun. There’s just no question. You’ve hit the nail on the head. It’s interesting that the ‘fun’ factor has never been brought up more often in the discussion of the metalwood.”

What would Gary Adams think today, nine years after his death and 30 years after the original TaylorMade driver made its debut? “He would be very proud of the fact that he was responsible for such an important change,” Vale Adams said.

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Vartan Kupelian is president of the Golf Writers Association of America and a contributing writer to PGATOUR.com.



The Dual Point Technology 460cc driver from Nicklaus Golf Equipment.



The clubs in Sergio Garcia’s golf bag.