



into



AFRICA

Golf course managers in Zimbabwe use a combination of the old, the new and the never seen before.

Dale Wesselman

Golf is not new to Zimbabwe. The warm, moderate summers, mild winters with virtually no frost and abundant sunshine almost ensure that the golf courses constantly enjoy good conditions. As a result, golf is played year-round.

There are more than 75 golf courses in Zimbabwe, ranging from crude 9-hole layouts, to classic park-land designs, to mountain resort courses. In January of 1895, the Bulawayo Golf Club was established in the British colony of Southern Rhodesia (now named Zimbabwe). Since then, golf has spread all over the country.

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Zimbabwe is a land of vivid contrast. Clean, sophisticated cities are near the unspoiled African bush, rich in a myriad of wildlife species that provide exciting game-viewing between rounds and often between holes. From Elephant Hills golf course on the Zambezi River in the west, to the Leopard Rock resort in the eastern highlands, Zimbabwe provides a memorable golfing experience.

Apart from the nearly perfect weather conditions, golf courses in Zimbabwe are uncrowded, and the people are genuinely friendly. One of the main attractions for U.S. golfers in Zimbabwe is golf's cost. With the exchange rate hovering around the 10-1 ratio range, the country's golf costs are among the most inexpensive in the

world. Green fees of \$2 (in U.S. currency) for 18 holes are common.

There aren't many golf cars, so caddies are plentiful, inexpensive and entertaining. Caddie fees can be as low as \$1 to \$2. Most caddies don't know the game well enough to instruct you throughout the round, but they can tell you when there's trouble ahead and locate your ball quickly.

Being a golf course manager

Zimbabwe superintendents are referred to as golf course managers, and a number of them also maintain sports clubs complete with cricket fields, lawn bowls, turfed horse-racing tracks and soccer/rugby fields. The golf course manager at many clubs in Zimbabwe is also the green committee chairman or club captain. The manager is a volunteer who has

an interest or some knowledge and experience in turf maintenance, and who instructs the grounds crew and course foreman. A dedicated manager will survey the course daily and have lots of input. Other managers show up at the maintenance area only a couple of times a month.

Training and education

Golf course management education in Zimbabwe is really a personal issue. If you want to improve your skills, there's ample opportunity to do so. Motivation is a key issue. Golf course managers' salaries are low generally and not incentives. For instance, a manager at one of the better clubs earns a salary of around \$1,000 in U.S. currency per month. The image of golf course super-

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Photos by Dale Wesselman

Warren Hills GC, in Zimbabwe's capitol of Harare, is the home club of pro golfer Nick Price.



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intendents in Africa today is similar to that of greenkeepers in the United States many years ago.

There's no formal turfgrass management training in Zimbabwe. Therefore, like many golf course superintendents in the United States in years past, the vast majority of turf managers come to their positions with an agriculture or horticulture background.

On many of the smaller courses, the greenkeeper is more often than not a retired or active local farmer who helps out in his spare time. The larger clubs (with larger budgets) have more qualified golf course managers who have acquired turf maintenance knowledge by correspondence or by attending basic courses. There are a number of one- to two-week courses available in South Africa (Zimbabwe's neighbor to the south), but they aren't comprehensive. Additionally, travel from Zimbabwe is expensive and small clubs can't afford it.

The Golf Course Managers and Greenkeepers Association in South Africa has made great strides over the past five years and is a good source of information. It works in conjunction with universities and interested golf courses, where they conduct their trials.

Despite the lack of qualified turfgrass managers, golf course conditions in Zimbabwe are more than adequate. Courses in this country suffer from the same politics as clubs around the globe. The main problem, though, is low green fees, which puts high-quality equipment out of reach and adversely influences course conditions. Like anywhere else, course conditions usually are better at wealthier clubs or at those where the course manager has more knowledge and experience.



Leopard Rock GC's 8th green is surrounded by 300-year-old tree ferns.

Budgets

Maintenance budgets at the clubs I visited ranged from \$1,500 in U.S. currency per month to more than \$12,000 per month. These figures include labor costs, which are about 30 to 35 percent of the total budget. That percentage is around half of average labor costs at most American clubs.

The average maintenance budget, however, is about \$2,400 a month, with a grounds crew of 14. Groundskeepers are members of the Zimbabwe Hotel and Catering Industry Union, which controls their salaries. The minimum wage for a ground or garden worker is 877 Zim (Zimbabwe currency) per month. That's \$87.70 in U.S. currency a month. A mower operator gets a minimum \$101.40 a month and a mechanic earns \$130 a month with free accommodations and meals. The accommo-

dations vary considerably.

Top clubs have barracks-style housing for the crew. The lower-end clubs have an old shed or storage room that houses a few workers. Meals are usually a bag of "mealie meal" — ground corn. (Workers use this to make sadza, the staple diet in Zimbabwe.) An area near the maintenance building often is set aside for a garden where the crew grows a variety of vegetables.

A look at some courses

Claremont Golf Club

Claremont GC, in the Nyanga Mountains of the Eastern Highlands, is owned by Claremont Orchards. This country golf course consists of nine greens and 18 tees. Course manager Ian Ackerman manicures Claremont with

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A barefoot crew member mows a green at the Country Club in Harare. The electric mower is from Zimbabwe's Field Co., located in Harare.



Female crew members hand-weed a fairway at Warren Hills GC. The women bring their children and set them in the rough nearby.

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the barest of essentials for equipment and a budget of less than \$2,000 per month. The green fees here are \$3 to \$5. Ackerman and his crew of 12 have rebuilt greens and bunkers and added many new tees with splendid results. The back tee of the 229-meter, par-3 third hole is nestled into a hillside terrace 25 to 30 meters above the putting surface.

Harry Allen Golf Club

Harry Allen GC in Bulawayo is another example of a golf course adequately maintained by the efficient use of the most elementary equipment and limited resources. In this age of computerized irrigation systems, triplex-mowed fairways and up-to-the-minute weather reports, the conditions that golf course manager Tony Linder has been able to obtain on a budget of \$1,500 per month is outstanding.

Harry Allen has one of the lowest budgets of all the clubs I visited in Zimbabwe, but the putting surfaces are some of the best. A limited water supply means greens are manually irrigated every seven to 10 days, fertilized with ammonium nitrate every four to six weeks, and topdressed with a compost produced by mixing grass clippings with a sandy soil.

The greens are groomed with a homemade manual verticutter. The verticutter is made of sharpened metal discs attached to a steel shaft. The shaft, which resembles a Wiehle roller, is mounted to a tubular frame with handlebars. It's pushed across the green with a person standing on it for weight. The sharp blades sever the runners of the native

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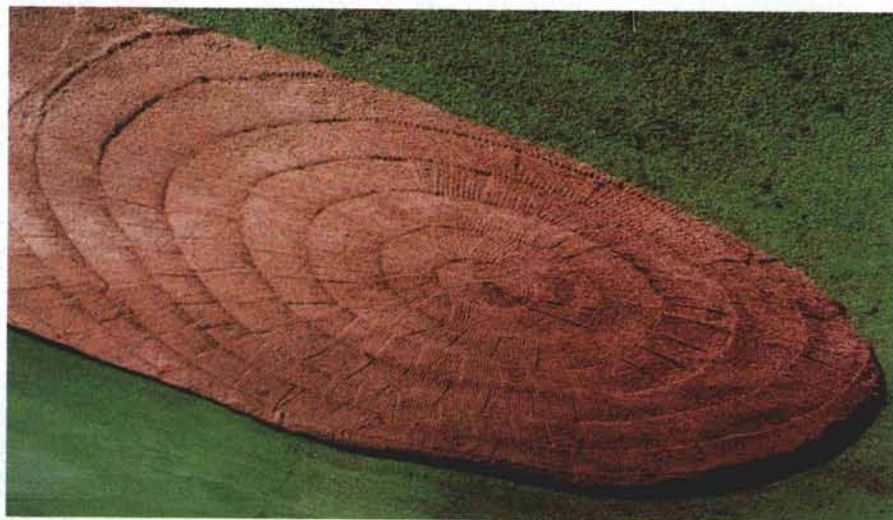
bermudagrass, which is then mowed.

The water supply at Harry Allen is so limited that Linder doesn't have fairway irrigation except for the seasonal rains. So only the indigenous, drought-tolerant grasses usually survive. Tees are watered manually once every three weeks, and once a year they're fertilized with sheep and chicken manure — when it's available. Excellent results are realized at Harry Allen by doing things the old-fashioned way — by hand and through hard work.

Leopard Rock Golf Club

An opposite extreme is Leopard Rock Hotel & Golf Course — a tranquil haven set among forests and coffee plantations overlooking the Burma Valley of Mozambique.

Upon her visit here in 1953, the United Kingdom's Queen Mother



Crew members rake elaborate patterns in bunker sand.

Elizabeth declared, "There is nowhere more beautiful in Africa . . ."

Leopard Rock is a spectacular

spread of fairways and greens carved out of the Vumba Mountains. With elevation differences of more than 120 meters, this course has some of the most magnificent scenery on the continent. Designed by Zimbabwe's own Peter Matkovich, Leopard Rock was created by blasting 35,000 cubic meters of rock. This rock was used to build up tees and greens.

Modern golf courses require a sandy profile for growing turfgrass and for adequate drainage, so sand had to be brought in. Sand was found at a dam construction site some 100 kilometers away and trucked up the winding mountain road to Leopard Rock's remote location.

Leopard Rock superintendent Derek Paxton, who also supervised the construction, said he had to show the crew of African laborers pictures from his coffee table edition of "Golf Courses Around the World" so they could see



Irrigation on greens is accomplished with 10-foot sections of 1-inch diameter aluminum piping. The piping has many small holes drilled into it.

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what they were building. The crew knew nothing about the game of golf before the construction took place.

Leopard Rock's greens were the first bentgrass greens in the country. Penncross bentgrass was chosen to cover the 100-percent sand-based greens. It's well suited to the moderate mountain climate. Bentgrass was also used for the aprons and short approaches. Kikuyugrass covers the tees, fairways and roughs.

Paxton, a native of South Africa, has been in the golf course management business for 13 years. He has a two-year agricultural diploma and a business administration degree. He farmed for 20 years, and he also worked as a technical advisor for an agriculture chemical company. Before coming to build Leopard Rock, he managed a private

golf course in South Africa.

Leopard Rock's maintenance budget is approximately \$150,000 in U.S. currency a year, making it the country's largest. This may seem small in U.S. terms, but 1.5 million Zim is a lot of money. This budget allows Paxton to acquire the modern equipment required to maintain a world-class operation. Toro walk-behind greensmowers, Jacobsen triplexes, National rough mowers and a Hydroject are just a few of the pieces of equipment stored in the maintenance compound.

Many unique features are scattered around Leopard Rock. The stonework on all the bridges, walkways and retaining walls are the handiwork of the local people using native stone. The bridge rails and the 150-meter markers are indigenous mahogany posts carved by one of the crew members, who used

only a machete. The benches at the tees are made from the trunks of felled mahogany trees 2 to 4 feet in diameter and 6 to 8 feet long. A quarter section of the log is cut out, forming a seat. Star patterns are raked in the sand of the bunkers, with each staff member creating his own version of the design. The many 300-year-old tree ferns preserved during construction were placed around several greens, creating an atmosphere of mystical serenity.

Hillside Golf Club

About an hour's drive down the twisting mountain road from Leopard Rock lies the city of Mutare and Hillside GC. The green committee chairman/club president/golf course manager has a famous golf name: Donald Ross. As I toured the maintenance facility, I saw the mechanic using leaves from the trees to set the tightness of the reels on the greensmowers, just as we use strips of newspaper to make this adjustment. I also saw the club's version of a manual verticutter. It's a 2-foot piece of flat metal with nails attached to the front of it. The bar was mounted on two wheels and pushed across the greens to reduce the grain of the bermudagrass.

Royal Harare Golf Club

Harare, the capitol of Zimbabwe, has many excellent golf courses. One of the best is Royal Harare GC. Built in 1898, it originally was named Salisbury Golf Club. In 1905 a Scot named Laurie Waters, a native of St. Andrews who had apprenticed under Old Tom Morris, drew plans for a full 18-hole layout.

Eric Padbury, golf course manager at Royal, retires this year after nearly 30 years of service at this club. The highly



This stonework at Leopard Rock GC was done by local workers. The Leopard Rock from which the club gets its name is in the background.

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conditioned course will be 100 years old in 1998. To celebrate the occasion, the club is renovating the greens, using bentgrass on the putting surfaces. In addition, several tees and bunkers are being updated by Nick Price and architect Steve Smyers from Lakeland, Fla. The successful completion of this upgrade, along with the centenary celebration, will certainly mark a major milestone in the history of one of the finest golf clubs in Africa.

Warren Hills Golf Course

Warren Hills GC is also in Harare. It's the home course of Nick Price and past teaching professionals such as David Leadbetter, Simon Hobday, Roger Baylis and Terry Cairns. At one time, this club was considered the home of junior golf in Zimbabwe.

Golf course manager Sandy Gibb has resurrected the course from the days of severe drought and neglect. Gibb has a tobacco farming background. His experience and dedication is the reason this golf course is one of the best manicured courses in the nation.

The bermudagrass greens are fairly large, relatively flat and very true. Gibb topdresses frequently with a sand and tobacco compost material, using fertilizers judiciously, grooming with a gas-powered verticut machine and mowing with the early Toro floating-head greensmowers. The fairways are kikuyugrass and kept nearly perfect by close mowing with a Toro gang mower, manual irrigation and frequent applications of tobacco waste.

Zimbabwe is one of the leading tobacco producers in the world, and tobacco waste is readily available. The tobacco is loaded onto a flat wagon and pulled down the center of the fair-



Another version of a homemade verticutter.

ways. Workers use shovels to spread it lightly, then it's watered in. After several days, a noticeable greening occurs that lasts for a week or two depending on the time of year.

Kikuyugrass, a medium-textured, light green and extremely aggressive grass, is an excellent surface for fairways and tees. I saw kikuyugrass, spreading by rhizomes and stolons, growing out of the top of 10-foot light posts. Under close mowing, however, it forms a tough, very dense springy turf. The golf ball sits up well on the stiff leaf blades, but playing on it takes some getting used to because of its spongy cushion.

When hitting an approach shot into a green, the ball must carry to the putting surface. Any balls hit short will land too softly and not run onto the green. Many courses that have switched to kikuyugrass fairways from native bermudagrass have found the course to

play much longer than the scorecard indicates. This is because golfers don't get the roll on their shots found on firmer bermudagrass fairways.

The Country Club

The Country Club is also in the Harare area. Like a stroll through a park, the Country Club course easily meanders through the mostly flat terrain. Small hills and nicely placed mounds add interest to the course, as do the resident crocodiles found in the many water hazards.

Grounds manager Jim Williamson and his crew maintain the golf course, the tennis courts and the cricket venue. A native of Scotland with a forestry background, Williamson came to Africa years ago. He worked in Uganda and Kenya and eventually made his way to Zimbabwe. Besides keeping up the grounds at the club, Williamson and his wife own and operate a plant nursery in a Harare suburb.

Williamson is one of the few Zimbabwe proponents of using sand in topdressing. He's built up a nice sandy layer on his greens. This layer tops the soil profile, which is a very heavy soil exhibiting poor physical properties. Besides helping to firm the surface, the sand layer allows water to drain below the putting surface and alleviate foot-printing. The trueness of the greens, as well as the delicate contouring, make the Country Club's greens very enjoyable.

Using sand

I saw few turf managers using sand in their topdressing mix. Most use a compost of some sort mixed with soil. Course managers in Zimbabwe have been topdressing a few times annually

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with this soil/compost mixture for years.

Over time, this practice has built up a thick heavy organic layer. Add this 6- to 8-inch layer to a base of fine-textured soil and you have a profile that has an extremely slow percolation rate. To top it off, these greens have a thatch layer of 1 to 1½ inches. The problems associated with this combination include graininess, footprinting, puffiness and mower scalping.

Before busy golf days, greens are soaked to hold better. Sound familiar? Greens are watered at least two or three times a week, whether they need it or not. This practice has been going on for years, so there are many waterlogged greens in poor condition.

I mentioned while there that greens are for putting and are not landing areas. Water shouldn't be applied for the

sole purpose of holding golf shots. I was told that when the greens dry out they turn to concrete. I was nearly thrown out of a board of directors meeting at one club when I advised them to use 80- to 100-percent sand in their greens topdressing mix. They told me that when you mix sand with their native soil you get bricks for building houses. They didn't want concrete greens. It's hard to change attitudes after 20 or 30 years of doing things a particular way.

Equipment

The equipment used to maintain Zimbabwe greens is very elementary. The courses that can afford them make use of imported machines, mainly Toro and Jacobsen. These machines are imported from South Africa, with duties varying from 30 to 100 percent depending on the type of machine. An exchange rate of 11 to 1 (Zim to the

South African rand) makes the machines expensive, especially considering the low green fees.

The Fields Co. in Harare manufactures reel-type walk-behind green and tee mowers. The mowers (either electric or gas-powered) are heavy, but they seem to get the job done. The electric models have long, thick power cords that are plugged into outlets mounted on short posts near every green and tee. The operator walks back and forth across the green swinging the cord clear as he makes the turn for another pass.

There's little maintenance on these greensmowers. Backlapping is almost nonexistent. The reels are adjusted using tree leaves. Coins are used as gauges for adjusting the height of cut.

John Painting, course manager at Bulawayo Country Club, measures the height of cut on greens in a different manner. "Two cents high during the growing season and 3 cents high in the winter-time," he says. The thickness of Zimbabwe's 1-cent coin is about 1½ mm, or ⅙ of an inch. During the summer, greens are cut at about ⅙ inch and during the winter they're at ⅓ inch.

Bulawayo CC uses a homemade, 2-foot-long verticutter. It's a 2-inch-by-12-inch board with 3-inch nails pounded through it on 2-inch centers. A rope is tied to it, and as one person stands on the board, another drags it back and forth across the green. This scarifying action lifts the bermudagrass runners, which are then mowed.

Greens aerification

Greens aerification in Zimbabwe is a story in itself. Most of the smaller clubs aerify their greens manually with a one-



This homemade verticutter is a board with 3-inch nails pounded through it. A rope is tied to it, someone stands on it and then it's dragged across a green.

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hole plugger. The plugger is a tine made from a $\frac{3}{4}$ -inch to 1-inch diameter pipe about 4 to 6 inches long. The tine is attached to a larger pipe that's used as a handle. Ten to 15 workers can aerify a green in no time. For more efficiency, some clubs make a handle with three tines attached to it.

Chemicals

Fertilizers and chemicals are available in Zimbabwe, but they are sold for the agricultural sector and aren't registered for turf. The environmental protection regulations are very basic and implementation and policing is poor. So, quite frankly, anything goes.

Most course managers still use copper oxychloride and Dithane. One man used a bag of powder on his greens that had previously been used on fruit trees. The ingredients included sulfur and cyproconazole. Other fungicides available include Bravo (clorothalonil), Rovral (iprodione) and Bounce (triadimefon).

Despite the fact that only a few courses conduct soil testing, a rather good selection of fertilizers and fertilizer compounds is readily available. However, individuals who know how much to apply on turf and when to apply it aren't so readily available. In addition to the poultry, sheep and cow manures and composts used in many areas, tobacco wastes are also available. Ammonium nitrate is the most common source of nitrogen. Urea and ammonium sulphate are also used. For phosphorous, single and double superphosphates are used, and potassium chloride and potassium sulphate are potassium sources.

It's amazing how some of these chemicals and fertilizers are applied at most

courses. There seemed to be no particular basis for chemical rates. For some, the starting point may be the rate a farmer has used on his corn, tobacco or coffee. Chemical measuring is done by using coffee tins, soup cans, bags and handfuls.

In some instances, rates of ammonium nitrate were applied to an average 3,000- to 4,000-square-foot green in excess of 25 kilograms per green. That's 55 pounds! One course did this monthly for nine months, which resulted in a flush of growth.

The majority of course managers in the country, however, apply more normal rates of fertilizer to their greens, but they still seem heavy. And many times an application's timing is determined by the generosity of a member farmer who might donate extra fertilizer. Finances allow some clubs to fertilize their tees and fairways only once every couple of years.

Disease

The dry, moderate weather conditions in Zimbabwe are not conducive to disease. During the rainy season, leaf spot diseases are the most prevalent. Next on the most-common list is dollar spot.

It may be a blessing in disguise that most of the country's course managers are not knowledgeable or experienced enough in the art of disease prevention, detection and suppression. Many clubs wait until the disease is well established before control is attempted, if it's attempted at all. Economics is the main reason for not doing anything.

Pests

Ants are the biggest insect problem, but they are easily controlled. Mole crickets have been problematic at some courses during certain years. For the most part, however, insects aren't much of a concern.

Native wildlife, however, can be a problem. Warthogs love to root in bunkers. Kudu (African antelopes) and waterbuck, among others, leave deep footprints in moist greens. Imagine the pounds per square inch of an elephant footprint on a waterlogged green. Now that's compaction!

But for the most part, wildlife only enhances the golfing experience. At Leopard Rock, for example, the sixth hole is named "Samango" for the Samango monkeys that inhabit the area. After each player's tee shot, the monkeys in the trees behind respond with noises that resemble clapping after a good shot and giggling sounds after a bad shot.

Weeds can be a nuisance, but at many courses they mean the difference between a green fairway or tee and a brown one. All basic herbicides are inexpensive, so whether a weed is sprayed or not depends on the weed and its location.

Poa annua has found southern Africa to its liking, but it doesn't pose a problem for most courses. Those who feel the need to eradicate it use Kerb. In certain instances, such as around greens, kikuyugrass is considered a weed. Kikuyu encroachment control around greens is done weekly by hand-picking. A great example of this is at Warren Hills, where Gibb has a crew of six or eight handpick kikuyu every Monday morning. At other courses, I saw many greens with kikuyu that had spread 8 to 10 feet or more onto the putting surface. Although it can be mowed at putting green heights, it's extremely grainy and bumpy.

Fertilizer application

The methods of applying fertilizers

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to greens in Zimbabwe may be unimaginable to superintendents elsewhere. One of the cruder methods involves a can that's usually used for watering flowers. This can, with a long spout and a 2- to 3-gallon capacity, was modified with a 3-foot piece of pipe attached to the spout. The pipe has holes drilled in it and resembles a small boom. The fertilizer solution is applied to the green by tipping the can up until water drips out of holes in the boom. After several steps, another handful or tin full of ammonium nitrate (or whatever) is added to the can with water, stirred and the process repeated. Fungicides were applied similarly.

The most popular method of application is a backpack sprayer. Superintendents everywhere use these types of sprayers to spot spray. But spraying 18 greens this way is a different story. Especially when spraying a *hot* solution of urea and the like mixed with water.

Royal Harare GC has a compact 12-foot boom sprayer. A pressurized canister is positioned between two bicycle wheels, and hoses run to the two folding booms. The unit is pushed across the green like a wheelbarrow. It's lightweight, efficient and gets very uniform coverage.

Irrigation

Several golf courses in Zimbabwe have automatic irrigation systems complete with pump stations, mechanical timers and pop-up sprinklers on greens, tees and fairways. Toro, Rain Bird, Legacy and Hunter products are all represented. For the less fortunate clubs, however, watering is done by hand or through aboveground piping.

On greens and tees, most greenkeepers use 10-foot sections of 1-inch diam-



Leopard Rock GC boasts this mahogany 150-meter marker carved by a crew member using only a machete.

eter aluminum piping. These pipe sections have many small, drilled holes, much like the rubber soaker hoses American homeowners use to water their lawns. A rubber hose sleeve connects the sections so they can be folded up and transported easily and so they'll follow the green contours better. Three or four sections are attached together and laid on the green. A hose is connected from a nearby hydrant or faucet and turned on. Several greens are done at once by one person who moves the hoses at the appropriate times. This method is adequate but not very uniform or efficient. Water tends to accumulate in low areas.

Fairways are irrigated by 4-inch aluminum piping in 20-foot sections. A quick-coupler system is used on this piping. Impact-type sprinkler heads are attached at regular intervals. The water source is usually a well called a "borehole." These wells are scattered around at strategic locations on the course. A

pump at each borehole supplies the needed pressure. The process is time-consuming, but there's no other choice.

Transportation

There are no golf cars or utility vehicles, so transportation on the course is usually by foot or bicycle. Bicycles are quick and quiet. Golf course managers get around on motorbikes.

A home for golf

Golf is alive and well in Zimbabwe. There are several world-class venues worthy of hosting major championships. Because of increased interest in the game, new courses are being built to modern specifications, and older clubs have gone through renovations.

Educating golf course managers should be a priority at this time. A knowledgeable person with a couple years' practical experience in Zimbabwe could efficiently use the resources available to maintain a golf course at levels consistent with those in the United States today. Many of the maintenance practices currently used in parts of Africa were used in the United States 30, 40 and even 50 years ago.

I expect Zimbabwe to become a major golf destination for golfers around the world. Besides its lovely weather and gracious people, the currency exchange rate is more than favorable. Nonstop airline flights from the states make it very convenient. With a bit more exposure, it's only a matter of time before Zimbabwe golf realizes its awesome potential.



Dale Wesselman has been a superintendent for seven years and a GCSAA member for nine years. He spent two years in South-central Africa advising golf course and turfgrass managers on modern construction, renovation and maintenance techniques.