



TOP PHOTO: A few of Fig Garden's 4,000 planted trees require "threading the needle" on number 9. **MIDDLE:** Knott, right, and superintendent Cal Shipman interrupt mowing to check 9-year-old Ransomes. **BOTTOM:** After Pythium destroyed number 15 green, redesign included crowning for drainage as well as extra challenge for players.

Course design and equipment simplify maintenance

by Don Curlee

Golf course owner Gordon Knott of Fresno, Calif., believes a full supply of equipment and maintenance-minded design are the surest ways to save money and insure the best in golf course upkeep and player appeal. But don't expect his Fig Garden Golf Course to be a showroom of the latest mechanical marvels. He irrigates with a quick-coupler system, mows fairways with two units that are nine and 15 years old, and cuts greens with mowers that are 1977 and 1969 models.

Knott and Superintendent Cal Shipman agreed that equipment must be maintained and repaired diligently. With an "ounce of prevention" applied regularly, they make it last, one reason they can afford more of it.

The 18-hole Fig Garden layout is a privately-owned, public play operation built by Knott and partner Nick Lombardo as a 9-holer in 1958. In 1960 they added nine more holes on the 120-acre, river-bottom site. By adding strategically-located trees year by year they have created a beautifully wooded and moderately challenging 6,340-yard course that has found unusual loyalty among its regular players.

Except for parking lot, clubhouse and maintenance building the entire acreage is irrigated, fertilized, sprayed and mowed. None of it is maintained as rough, nor are any areas left bare between fairways. It's a 120-acre, fence-to-fence grass farm.

Terrain is primarily flat, with only slight, natural undulations which were smoothed and rounded in course construction to ease maintenance requirements. Most of the greens are slightly elevated, but with moderate slopes that mowers and other equipment can negotiate easily. The elevation enhances drainage also.

The steep river bluffs adjacent to the course have been used as backdrops for two par-3 holes, and as

an elevated tee for the 18th. A short, but sharp dogleg hole, number 13, was guarded originally by a large fairway trap. To simplify maintenance the trap was filled in, and several trees were planted, making it just as risky for players to cut the corner, but much easier to maintain.

The equipment investment at Fig Garden is about \$150,000, but making extensive use of it allows Superintendent Shipman to limit his crew to four in addition to himself, plus a night irrigator during the summer months.

"I don't feel we have an excess of equipment," Knott said, "so I am always amazed to hear a superintendent or manager of some private club tell me we have equipment he doesn't have. I know these clubs take in much more money than we do."

Because Shipman believes in setting an example for his workers he spends most of his time working shoulder to shoulder with them. When he isn't on the course he can be found in the maintenance shop doing his own mechanical work.

The work assignments break down this way: one man mows fairways, two mow and maintain greens, and the other takes care of traps and performs general maintenance and odd jobs. Cooler weather, when the greens don't require both men, is catch-up time for a range of maintenance projects.

Eight-hour days are standard, starting at 6 a.m. or earlier during summer's long days. The days end no later than 2:30 p.m. Saturdays, Sundays and holidays are limited to greens cutting and cup setting. Shipman is not hesitant to grant overtime to his crew, and finds it preferable to hiring additional personnel, for both him and his workers.

He hired a school teacher to irrigate at night while school was out last summer. He sleeps better knowing he will be called if troubles occur during the night. Summer salary and fringes for the vacationing teacher, who is expected to continue his part-time arrangement, total about \$6,000. Shipman and Knott figure it takes many years at that rate to add up to the price of an automatic system. Estimates have ranged between \$200,000 and \$250,000.

While daily irrigation from April to October is a must, too much water combined with the extreme heat of the arid San Joaquin Valley can create unhealthy, fungus-prone greens. "Heat is an element that superintendents in the San Joaquin Valley have to live with in the summer," Shipman said.

He has recorded a temperature of 120°, ½-inch deep in the practice putting green at Fig Garden.

Shipman lives with the heat by watering the Penncross greens amply, but carefully, and avoiding standing water during the day at all cost. A mid-afternoon syringe treatment cools surfaces when temperatures are highest.

Air movement across the course is a natural barrier to fungus and disease conditions, but with steep bluffs adjacent to the course and across the river Fig Garden finds circulation inhibited at times. That's when Shipman exercises care and a close watch for disease symptoms. "When I can feel that heat and humidity rising up from the ground, and just lying there about waist high I know I've got a potentially dangerous situation," Shipman said.

"Last year we lost two greens to pythium. I check the greens for disease every morning, and that morning was no different, but I missed the symptoms. When my greens cutter found it he called. We knew we had a

crisis, because by the time you see pythium it's too late. We might have overwatered slightly, or maybe the disease was spread by mowing. Humidity was about 80 percent at the time," Shipman recalls.

His disease prevention schedule includes spraying with Acti-dione thiram by Tuco every seven days during June, July and August at a rate of 2 ounces per 1,000 square feet. To maintain vigor and color in his greens through the hot season Shipman adds 3 ounces of Ciba-Geigy iron chelate to the fungicide spray. If conditions allow, he leaves the application unirrigated for 24 hours for maximum effectiveness.

Shipman also applies Koban as a pythium preventative, a step he considers expensive, but necessary. He applies it as a spray as often as every 14 days, or as conditions demand, from June through August at 2 ounces per 1,000 square feet.

Shipman has developed some interesting strategy in the universal superintendent's crusade — against



Knott shows where brush was cleared near number 12 tee to make river visible for players.

poa annua in greens. He makes two perpendicular passes with the thatching reels, goes once over with the greens mower, then vacuums the thatch, stolons and poa seeds with a Yard-Vac, manufactured in Fresno by D & M Manufacturing. On the average a 6,000-square-foot green will yield about ¼ yard of debris with this treatment.

"If you can eliminate the seed, you can eliminate the plant," Shipman said. Of course, he hasn't eliminated the seeds, but he believes he has cut down the percentage of poa substantially. He hopes it will continue to decline from year to year.

His normal greens application is a 4-pound-per-1,000 feet feeding of Plant Gro oxidizer, a 21-7-14 mixture by Sierra Chemical Company of Milpitas, Calif. He considers this a "touchy" application, which might cause burning if applied in direct sun. So he puts it on late in the afternoon or evening, and irrigates it in during the night. Once a year, usually late in May, the Bermuda fairways receive

an application of granular 24-24-0, also by Plant Gro.

Fairways were seeded in Bermuda which still dominates, but co-exists with a mixture of native grasses. Shipman and Knott watch the weather forecasts closely when frost threatens in the late fall. "Normally I cut my fairways at 1 inch," Shipman said, "but we try to let them reach about 1½ inches before the frost. When the grass goes dormant at that length we have a nice mat all winter, and it gets a little slick so irons slip under the ball well." Even though the dormant mat takes on a light tan color after the frost, Knott says he prefers it to seeding with rye, and so do the players.

Shipman manages his spray program by using two 200-gallon spray rigs, a 10 or 12-year old John Bean and a Hardie, wood-slat orchard sprayer that could be as much as 50 years old. This antique was recently outfitted with a Hy-pro pump. Like some of his other equipment, excellent maintenance makes it seem ageless. He uses

the Hardie exclusively for herbicides, and the bean for fungicides, reducing chances for cross contamination.

Because he is his own mechanic Shipman's appreciation of good equipment and maintenance is as keen as Knott's. He applauds the strong move to hydrostatics and hydraulics in today's turf care equipment. "It makes it a little tougher on the mechanic, who must understand hydraulics," he said, "but performance has been improved a great deal."

Shipman particularly likes the constant reel speed of his Ransomes 7-gang fairway mower. With one man assigned to cut fairways eight hours a day, five days a week, he also appreciates its reliability. His 15-year-old, 7-gang Jacobsen is used as a back-up fairway mower.

His Jacobsen greens mower narrowly missed being cited as one of the oldest in operation when the company conducted a search last fall. A 1966 or '67 model, it has since been retired.

Greens mowers include two three-gang Toro Greensmasters and three walking greensmasters. He uses a National Triplex for mowing aprons and tees.

Another labor saver Shipman has come to rely on heavily is the nylon-line weeder. He has two Green Machines, supplied by HMC in Torrance, Calif. With 4,000 trees at Fig Garden, and grass growing right up to the trunks of most, the weeders are in constant use. Each weighs only six pounds, and workers can keep going longer with the lighter weights than with heavier units used previously.

Two blowers for leaves and debris, and three Trucksters and one dump truck by Cushman are part of the power equipment inventory. So are a Dedoes aerefier, a fairway aerefier, an Infield Pro raker, a Lely spreader, a slicer and sod cutter.

Shipman likes the arrangement he has that takes budgeting and most record keeping off his back. "If I need a piece of equipment, Gordon and I talk about it, and if he agrees, we buy it." That's an attitude that leads to having plenty of equipment on hand.

The minimum maintenance characteristics of the course are so inconspicuous that golfers seldom notice. They just enjoy the sporty good condition of Fig Garden

But Knott, Shipman and the book-keeper see the result of maintenance-saving design every month — on the bottom line of the balance sheet. And that's where it counts. □



Knott and Shipman assess tree growth where trap was located (lighter area), now grass.