

inches per 100 ft. is usually the minimum fall for laterals. These limits are intended to guard against excessive silting which will ultimately choke the tile. Larger size tile used as mains carrying considerable water may be laid as flat as 1 inch per 100 ft.

The depth at which tile will provide best drainage and the frequency or spacing between lines is effected by the soil, its drainage characteristics, the use of the land, the degree of drainage necessary, the allowable time for complete drainage, the underlying geological formation, topography, annual rainfall and the elevation of the outlet. Placing the tiles at a greater depth permits wider spacing of the lines and materially reduces the rate of drainage. For agricultural purposes the allowable time for complete drainage (48 hours) permits 2½ to 4 ft. depths and 40 to 100 ft. spacings. For turf on estates, in parks, on golf courses, on lawns and playing fields drainage should be effective in 6 to 8 hours and the depth should be 1 to 2 ft. with spacings of 10 to 25 ft., according to the soil type. Heavy soils require close spacing.

How to Plan Tile Drainage System

The first requisite of a drainage system is an outlet which is not submerged at times of high water and which will permit ample fall in the tile lines coming from the most remote part of the area. This is frequently difficult, yet if such an outlet is not available, adequate drainage may be impossible. The remaining steps may follow in about this order. Study the drainage characteristics of the soil for an appropriate depth; this will determine the approximate spacing. Study the topography for alignment and type of system, a random system on rolling land or a more complete system on level land. These determinations will be made with due consideration to rainfall, time allowed for drainage and the completeness of drainage necessary.

A chart showing the relation between tile size, slope, area drained and discharge may readily be secured. Many small areas may be drained with 4 in. tile. Under usual conditions as much as 3000 ft. of 4 in. tile may be laid without fear of over-taxing its capacity. A 6 in. main will drain 10 to 100 acres, according to conditions. When larger systems are installed, the tile size should be chosen by referring to the chart or by accurate calculation, using the proper formulae.

A memo for the caddie committee: Many members have in their lockers and at their homes items of worn wearing apparel that could be used by caddies. Collection and distribution of such clothing is a proper job for the caddie committee.

The slope of the main and laterals in a drainage system must conform to some extent with the topography of the area, increasing or decreasing the slope as needed. Increasing the slope as we approach the outlet is not objectionable, but decreasing it tends to cause silting and may choke the tile at the point of change. When necessary to decrease the slope it should not be reduced to less than half at any point. For example, a slope of 8 inches per 100 ft. might be changed to 4 in. per 100 ft. As the flow increases the silt carrying capacity is increased, hence successive reductions in grade may be made. The total permissible change depends upon the silting characteristics of the soil. If silting cannot be prevented on very flat land, silt basins must be installed.

Abrupt changes in the slope of laterals and main may be avoided by running laterals diagonally across the slope instead of directly down. This practice is particularly advantageous where the drainage from a hillside must pass over a valley bottom to reach the outlet.

Ledges of shale, rock or heavy clay often cause the water collected in the soil above to seep out on the hillside. The wet spot is formed just below the out-cropping ledge, hence a line of tile or a ditch placed just above will intercept the seep water and correct the difficulty. Normal percolation from a hillside causing a swampy bottom may be corrected in the same way if the seepage is the only source of water. When there are other sources of water additional drainage may be required.

Terraces may be considered as a form of surface drainage. They are rapidly becoming popular as a means of erosion control and are particularly adapted to use on turf in meadows, pastures, parks or lawns and golf courses. The broad base terrace is no more than a shallow trough and a rolling ridge built across the slope of a hillside and sloping slightly toward one end, or from the middle to both ends. It intercepts the flow of water down the hillside, diverting it to one side and reducing its velocity. Terraces must empty into an outlet ditch which is protected against erosion. The ridge when compacted should be 6 in. to 1½ ft. higher than the trough and the slope 3 to 6 in. per 100 ft.

SHOP SALES LAG

By HERB
GRAFFIS

*Play was well ahead in May, but
not sales; pros hold remedy*

GOLF play up to the last week in May has been ahead of that of the corresponding period of any other year within the scope of GOLFDOM's records and the memory of veteran observers in the golf playing equipment field. Part of the big play is due to the favorable weather early in the year and a steadily increasing departure from the old tradition, in some sections, that the season should not start until almost Memorial Day. Another reason for the big play is the national trend toward participating recreation rather than dependence on the spectator phase of sports for recreation. Increased promotion by energetic and wise club officials and pros also is beginning to show definite results.

But—and here's the cockroach in the ointment—golf ball sales are shy of an increase corresponding with the increase in play, and golf club sales of some brands are sharply off from last year's figures, not only in pro-shops but in store dollar-and-cents volume. Part of the failures to keep sales apace with the greater play is attributed by pros to the failure of some manufacturers to co-ordinate advertising efforts with the sharply defined market. It's no good to blow a wad of advertising money to reach people who don't play golf when there are only approximately 1,500,000 constituting the active golf market, and of these probably not 600,000 can be expected to buy woods, irons or putters during phenomenally good years. With the golf market thus sharply defined, the pros who are studious and successful merchandizers wonder at the thin and brief advertising treatment their club members are receiving.

However, the pro has to make most of

his living by the profit on ball, club, bag and accessory sales and does most of his selling during a period of not more than 6 months. In a large section of the country three of the liveliest months of the selling season already have passed. The pros have seen, in numerous cases, how the house business at their clubs has increased substantially over last year so they can't altogether explain the lack of corresponding increases in the shop to lack of money among the members.

Pro Must Follow Through

The stage of the season has been reached now where the pro can't wait for explanations. He must sell. When he's a merchant he knows that, naturally, the best advertised brands are going to have the quickest consumer acceptance, so they'll push these lines strong so they can cash in on the persistent advertising that is sharply focused on their members.

But there's no advertising that will do a 100 per cent selling job of golf balls and clubs for a pro. The pro has to do the following-through himself. If his shop business is off, he can't hope to make it any better by taking the afternoon off by going out to play with a pro comrade at a neighboring club. He can look through the bags in his rack and pick out a few members who ought to have new clubs, or whose ball purchases haven't been up to par. He can begin telephoning these members for a game, to be sandwiched in among lesson times. If the time is to be a dead loss anyway, the smart pro will take a chance on getting close to some member who should be a better customer. The personal interest thus shown is the greatest sales come-on that a pro can use. I've had that tip straight from some of the best of pro merchants—fellows who do business right through any slump.

Another tip is to watch the bags of members for outside ball purchases. I

Shawnee-on Delaware where the 21st PGA championship will be played July 10-16, is regarded as the birthplace of the pro national organization. During an evening at the first Shawnee Open, 26 years ago, pros formed the nucleus of the present PGA. Among those at that meeting were Freddie McLeod, Alex Smith, Gil Nicholls, Jimmy Donaldson, Tom MacNamara, Jack Jolly, Jim Barnes, Jack Hutchison, Tom Boyd and Jack Hobens.

Swing along
TO CONFIDENCE
with



TRUE TEMPER
The Golf Shaft of Champions

● "Confidence" is the greatest word in golf. TRUE TEMPER is the happy road to confidence. It is the road that champions take. More than 90% of all major tournament players insist upon TRUE TEMPER Steel Shafts for their golf clubs. They know that TRUE TEMPER is the strongest golf shaft made—the sweetest in action—perfectly matched for Weight and Balance Point.

Every golfer can win confidence just as the champions do, because every golf club maker uses TRUE TEMPER Shafts on his finer clubs.

You can thus recommend to your players the make of club which they prefer, fitted with a TRUE TEMPER Shaft that exactly fits their swing. Players will win confidence with TRUE TEMPER in 1938 as they have in previous years—your sales will then take care of themselves.

TRUE TEMPER Shafts are made in more than 35 designs and degrees of flexibility. Thus, there is a model to meet the requirements of every golfer.

THE AMERICAN FORK & HOE COMPANY
 SPORTING GOODS DIVISION DEPT. G8 GENEVA, OHIO

Atlanta pros have been getting deserved good breaks in publicity lately. Charley Yates, winner of the British Amateur, is quoted in cables lauding the teaching of his mentor, George Sargent. Jack Troy, acting sports editor of the Constitution, in a "Break O'Day" column tells about "Grandpa" Howard Beckett's 20th anniversary at the Capital City CC. Jack pays high tribute to the service Howard and his comrade professionals have given Atlanta. He mentions Dot Kirby and a number of young man golfers as examples of the Beckett expert tuition.

know one smart pro who saw that a member of his was getting an advertising premium ball by the dozen, not only for the member's own play but for friends who also were club members. The club had given the pro assurance that members would patronize the pro-shop so the pro could make a living, but club officials had failed to notify the members and they didn't realize they were giving their pro a bum deal. It was too late for the pro to come right out and raise hell, and it certainly would have been a tactless and futile thing to do.

Shows Outside Buys Are No Bargain

What this pro did was to quietly hand the member a new ball, asking the fellow to play it and give the pro his opinion. The member, flattered, came back with a highly favorable report on the ball. The member shot over 100, so you can imagine what his opinion, as an expert, was worth. The pro, in a private talk with the member, told the member that the ball was a three-for-a-dollar ball. The member was surprised. He thought he had been playing a 75 cent ball. "How much have you been paying for those advertising balls you've been playing with?" the pro asked. The member remarked that the price was \$6.00 a dozen. "Well, you see I can beat that price \$2.00 a dozen and can give you a ball that is better for you than the one you've been playing. We ought to get together on your ball buying." The pro made that comment and laughed. He made no further selling talk at the time. But that member and his friends have been buying balls, three-for-a-dollar, 50 cent, and 75 cent, at that shop since that time.

If that pro hadn't kept a close watch on what his members were using when they played he'd never have been tipped off to sales possibilities right under his nose.

The moral is that plenty of slack in shop sales can be taken up by a pro who

will keep a close watch over his players' equipment and see what they need. The biggest point in selling is to know what the customer needs, and very few retailers are in the pro's fine position to determine the requirements.

When you know what they need your selling becomes 50 per cent easier. Look through the bags in your shop today and make a list of the men and women who could use new equipment. Then ease up on them. You're smart enough to be able to make the correct approach or you wouldn't have been able to make money in pro golf this long.

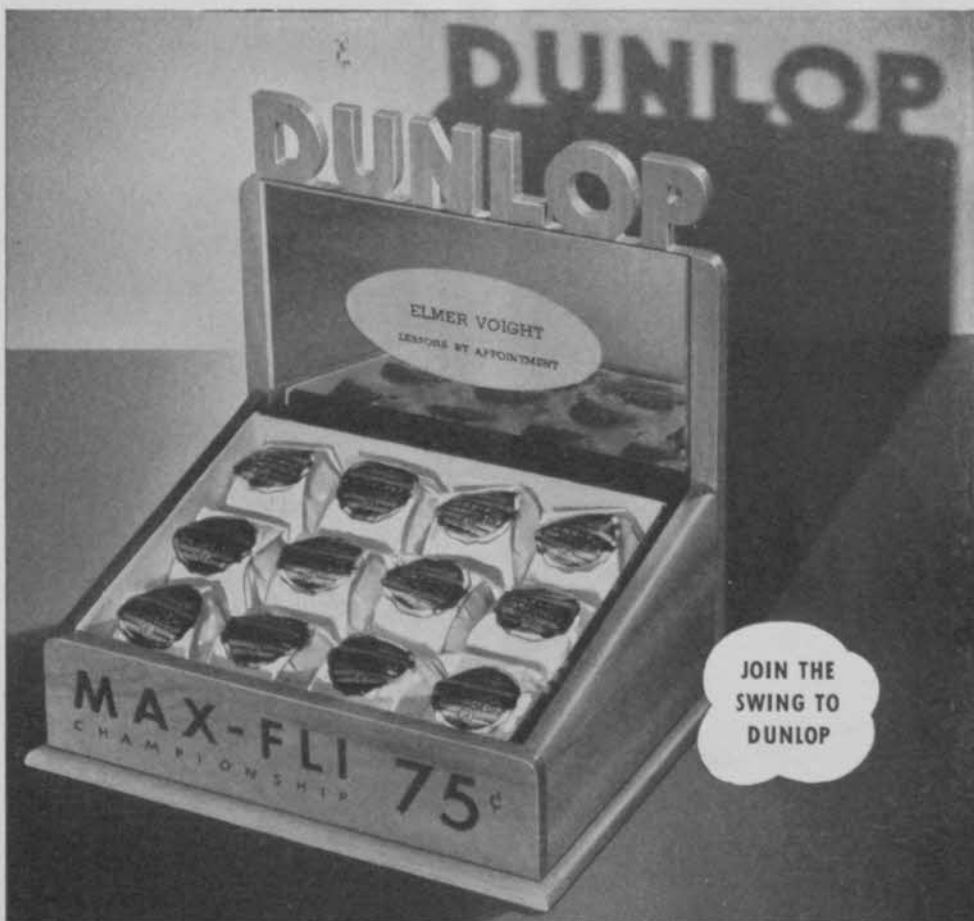
Indiana Town, With WPA Help, Gets Modern Golf Plant

LINTON (Ind.) golfers hardly recognized their own course this spring when they played their first rounds over the course which has been transformed into one of the finest golf plants in southern Indiana. Some energetic planning by city officials, plenty of hard work by the "faithful," and some WPA cash have provided a greatly improved nine-hole course, and a beautiful \$30,000 clubhouse.

The course was formerly the old Linton CC, a private layout which found the Depression too much of an obstacle and which for a few years operated on a fee-course basis. The city of Linton was finally impelled upon by the "never say dies" to make it a public course, a part of the city park system. It was purchased on option by the city in 1934 and WPA labor obtained to transform the sand greens into nine bent grass greens. In November, 1936, the option on the property expired and the city, by ordinance, purchased the course for \$4,000 with a down payment of \$800 and yearly payments of \$500. Additional WPA cash came along in 1937, and work on the clubhouse was begun last September.

The clubhouse is of stone construction, measuring 42x70, with terrace work and landscaping in proportion. There is a basement under the entire flooring, with showers and lockers for men and women. On the first floor are a dining room, lounge, three fire places, a fine kitchen, pro-shop, and caretaker's room. The building will be ready early in June.

Course officials announce a record membership has already "joined up" and plenty of play is expected from golfers in adjoining counties. Membership fees are reasonable so that most townsmen can enjoy the course.



JOIN THE
SWING TO
DUNLOP

HANDSOME NEW DISPLAY smashes all popularity records!

● "The classiest job ever to appear in my shop!" That's what dozens of pros tell us about the new Dunlop Maxfli display stand. Built to hold a dozen balls, it's made of genuine cabinet wood in natural finish. Your own name is centered in the mirrored back to give it dominating attention value. Expen-

sive silhouetted letters top off a display that's a real selling sensation! Find out today how to get one for yourself... *absolutely without charge*. Drop a note to the Dunlop Tire & Rubber Corp., 500 Fifth Avenue, New York City. Don't put it off... they're going like hot-cakes!

Learn how to get yours FREE... write

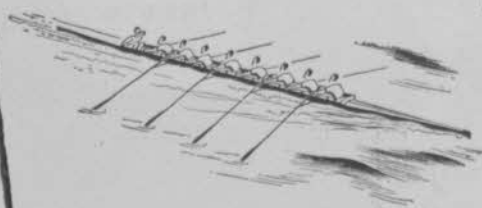
DUNLOP TIRE & RUBBER CORP... 500 FIFTH AVE., NEW YORK CITY

• Use QUICKMAIL Coupon No. 2 to answer this ad •

Pass these tips along.... and

SPALDING GOLF BALLS have the knack of bringing you repeat sales because they deliver so much value and satisfaction. Here are a few outstanding features that make splendid talking points. Use them—and watch your repeat sales grow!

UNIFORMITY OF PERFORMANCE



- The same distance, within reason, every time the same club is played...that means accuracy, an outstanding characteristic of top-grade balls. Non-uniformity may well ruin a good score. You'll find uniformity of performance built right into these three Spalding balls—Tournament, Top-Flite, and Needled Kro-Flite!

LONG CARRY

• Long carry, as compared to roll, gives a player distance with control. When there's trouble ahead, long carry gets him *over* it. A poor ball's short carry too often gets him *into* it. You sell high-ratio flight when you sell Spalding's three aces—Tournament, Top-Flite, and Needled Kro-Flite!



increase your Golf Ball Profits

DURABILITY



• Long life is a feature that every player wants in a golf ball. So that you may sell *durability* along with uniformity of performance and long carry, Spalding has equipped these three favorites with tough Geer Patent Covers—Tournament, Top-Flite, and Needled Kro-Flite.



TOURNAMENT—for the powerful swinging, low-handicap player—retails at 75¢

NEEDED KRO-FLITE—for the average golfer. Long distance, tough cover—retails at 75¢

TOP-FLITE—for the low-handicap player with normal hard swing—retails at 75¢

PAR-FLITE—also has a Geer Patent Cover. Outstanding value—retails at 50¢

A. G. Spalding & Bros.

GOLF EQUIPMENT

IOWA STATE OPENS NEW \$133,000 COURSE



This view of Iowa State's new course shows the ninth hole—elevated green in foreground, tee at left end of bridge over creek.

THE results of three years of careful planning and work at Iowa State College, Ames, was seen for the first time by the general public on Thursday, May 12, when the college's new recreational area, including its 18-hole golf course, was formally dedicated.

Dean Helser, chairman of the ISC athletic council, officiated at the formal presentation of the area, constructed with the help of the WPA. Charles E. Friley, president of the college, delivered the acceptance speech, and brief remarks were given by Governor N. G. Kraschel and State WPA Administrator George J. Keller. Several prominent foursomes then teed off to officially inaugurate the course.

The area, long a dream of George Veenker, director of athletics at the college, is located less than a city block from the college armory and is on property which has been owned by the college for a number of years. From the appearance of the 150-acre tract, it is apparent why it is called a recreational area rather than merely a golf course. It includes three and a half miles of cinder bridge trails; foot trails for hikers; a cross-country running course; and eight picnic areas of all sizes to accommodate from one family to 200 persons.

Part of the original 150-acre tract was an orchard three years ago. Some of it was pasture. Much of it was heavily

wooded. Through the center of the area runs Squaw creek which normally has a good flow of water. Clear creek also runs through the course; its entire channel was changed to build two fairways along its natural beauty. A third stream, Spring creek, runs along one fairway and for 300 ft. it is routed underground to gain fairway width.

Before any work was done on the course, Perry Maxwell, golf architect of Ardmore, Oklahoma, was called in by Veenker and after an intensive study of the layout with P. H. Elwood, head of the department of landscape architecture as the consultant, Maxwell and Veenker laid out the 18-hole course.

CCC and WPA Are Sources of Labor

In the early stages of the work, CCC boys were used to remove trees to create a number of fairways. A comprehensive WPA project was approved shortly after the government created the WPA and work was begun on December 2, 1935. The original project called for federal expenditures of \$160,287, but thus far only \$76,808 has been used and the work is virtually completed.

As its share of the project, the college has used \$56,353, most of which was profit from the athletic department's receipts during the 1935-36 and 1936-37 seasons. As many as 90 laborers have been given employment during the course of construction. Six of them will become full time employees of the college when the course is thrown open to the public.

Because "this is a recreational area, not a social club," Veenker planned no elaborate clubhouse. Instead, the clubhouse contains only a small pro-shop, space for

Madison (Wis.) pros, Alex Wilmott, Karl Schlicht, Jim Milward and Herb Spaanum, in cooperation with the Madison Park commission, the Board of Education recreational department and two local newspapers, conducted a four-day free golf school for high school students. The pros donated their services to the highly successful group instruction which was held the week prior to the spring vacation.

The pro quartette was praised by educators, civic leaders and newspapers for contributing their expert services in introducing the youngsters to golf.

The SHOULDER *that*
Puts a DRIVE *in Your*
Sale of Golf Clubs

The Shaft of Steel
with the "Birdie" feel



The "Double-Whip"
 POWER SHOULDER
 is the heart of the shaft

Featured for 1938 exclusively in the finest clubs of three of America's prominent club makers:

**HILLERICH & BRADSBY • A. G. SPALDING & BROS.
 WILSON SPORTING GOODS CO.**

The Heddon "Double-Whip" Power Shoulder aids both the player and the "pro-shop" manager. It puts more power behind the shot and more power behind club sales. A Heddon Shaft is a guaranty of a quality club—a club that commands a price that pays you a proper profit. Feature Heddon Shaft-equipped clubs this season. It *pays*.

H E D D O N

"Custom Drawn" STEEL GOLF SHAFTS

a limited number of clubs and two small shower rooms. The clubhouse, as well as the other buildings on the course, was built by WPA labor. The other buildings include: two 20x40 garages and one 10x20 garage for the storage of equipment; one 13x26 compost shed; one 20x30 picnic shelter; and one 12x21 caddie house.

Through the construction of huge teeing "areas" instead of tees, the length of the course can be varied from 5,596 to 6,573 yards. Par is 70, 35 for each nine. Veenker plans to use the teeing areas which will give a total yardage of 5,945. The longer yardage will be used only for championship tournaments.

All fairways are piped with water from the college pumping station. Five miles of pipe, ranging from 1 in. to 8 in. in size, were necessary. Two hundred fifty valves and outlets were needed. Seventy pounds of pressure can be had at the highest point on the course.

Plenty of Water Available

Using the sprinkling system six hours nightly, the entire course can be watered in three days, Veenker says. Sixty-seven gallons of water pour through the system in one minute and each sprinkler covers an area 180 feet in diameter. There are five bridges on the course—three over Squaw creek and two over Clear creek. The first three include one steel and concrete structure to accommodate maintenance equipment, a 120-foot span suspension bridge and a rustic foot bridge. Golfers cross the railroad tracks on a catwalk built on the bed of Clear creek through the tunnel carrying the creek.

Thirty sand traps, most of them merely for decorative purposes, are spotted throughout the course, but there are no bunkers to hinder golfers. All greens have Washington bent grass and are designed to provide drainage in at least two and sometimes three directions. Some of the greens have shallow sand traps which fit well into the contour of the course. There are no traps on the fairways, but the woods and rough provide stiff penalties for one who slices. Rustic benches,

direction signs and standards for ball washers have been constructed from the native oak and walnut removed from the course. All gates leading into the area are of large natural logs.

With good turf now growing on all fairways, there is little indication of the vast amount of work that was necessary to create the new layout. Entire hills have been removed to eliminate climbing, hill-sides were torn away, tons of soil were moved, four thousand trees were cut down and 5,000 others planted in more advantageous locations. Last summer, 800 truckloads of sod were placed on the hills which were eroding.

No major tournaments are planned for the current season, but Veenker has indicated that an invitation will be extended the Big Six conference to hold its 1939 tournament on the course. "One of the most remarkable things about this course was the comparatively small amount of money needed to construct it, as compared with similar courses throughout the country," Veenker says. "Without the assistance and cooperation of the WPA, Iowa State College would today not have this fine recreational area."

Arrow Brook Club Becomes NYC's Summer City Hall

THE old Arrow Brook Country Club will house New York City's city hall this summer, according to a recent announcement by city officials. Negotiations for purchase of the property have been going on for several months, and was decided on because of its proximity to the grounds for the New York World's Fair next year.

The building, a three-story wood and stucco structure built nine years ago, stands on a rim of a bluff with a view of the entire fair grounds and Cedar Grove cemetery. An 18-hole golf course adjoining the building will later be graded and added to the World's Fair parking space.

The grounds and golf course occupy 100 acres in area, with a 3,600-foot frontage on the fair grounds. The Mayor's office and a room for the Board of Estimate meetings will be located on the second floor, and the ground floor, which is now chiefly a large locker-room, will be set up as a reserve police precinct.

The Arrow Brook Country Club was a private club started twelve years ago. Six months ago it was acquired by real estate operators and the course thrown open to the public. The course will remain open until the Mayor moves in July 1.

The Junior Four-ball league has been revived in Boston. Teams of players 18 years and under have entered from Oakley, Winchester, Wellesley, Bear Hill, Sandy Burr and Charles River. The schedule ends June 11, as at that time the youngsters begin to depart for vacations. Competition is for the Dr. Horace Paine Stevens trophy.