



GREENKEEPING— TODAY *and* TOMORROW

By PROFESSOR LAWRENCE S. DICKINSON
Assistant Professor of Horticulture, Massachusetts State College;
Professor in charge of Greenkeepers' School, Massachusetts State
College; Honorary Member of the National Association of Greenkeepers
of America.

CHAPTER VII—THE PROBLEM OF FACTORY ALTERATIONS

IN COMMERCIAL manufacturing, factory alterations are made with the express purpose of reducing operating and manufacturing costs. The manufacturer figures very carefully before ordering the alterations to be made; he knows the cost and net saving to be expected. The alterations are made for two purposes: one, to increase profits, and two, to more successfully meet competition.

The golf course (factory) alters its course or introduces devices, in order that the course may be a more severe test of golf, be sportier, and "more like other courses" to more successfully meet competition. The effect upon the game of golf is the prime motive for the alterations, and seldom is proper consideration given to the quality of the playing grounds. Later, however, it is realized that the quality of the playing grounds is more important than the sportiness of the course. An automobile with a beautifully lined body, appeals to the buyer, but it is the quality of the chassis and power plant that make for comfort and low operating cost.

When planning factory alterations, definite specifications can be made, carried out, and previously determined results obtained. The shoe will be manufactured for 27c less while its quality remains the same. When planning for golf course alterations definite specifications can be made, they can be reasonably well carried out, but the results cannot be guaranteed, for the materials used in the alterations (except chemicals) deal with nature, contain living organisms. Also there is an opportunity for differences in opinion as to the interpretation of specifications. Oak is oak, but sandy loam,

while it has specifications set down by agronomists, may be sandy loam to you and not to me. Furthermore the agronomist's specification leaves considerable chance for variation.

COST OF COURSE ALTERATIONS UNCERTAIN

CONTRACTORS bidding for factory alterations do not estimate, they bid—bid on reasonable definteness and take their chances on profit or loss. They even have an inspector over them at all times. Golf course architects and contractors, have learned better than to bid; they estimate. In many instances if there is a chance that a competitor is going to get the job, the estimate is lowered, lowered to a ridiculously low figure to one who is familiar with golf course construction.

Green committees not having had practical experience in landscape construction, accept the low estimate. Result! Work two-thirds to three-quarters done, at a stage where it would be unwise not to complete the project. The estimated cost is reached and the appropriation has been entirely used.

The Green committee, or executive committee is left with two choices, either "finish it off as cheaply as possible, and get to playing on the new greens," or procure additional funds and complete the job correctly. Are there many executive committees that have the nerve to face a club and admit that they were "sucked in." No!! The job is usually finished off as cheaply as possible and frequently the additional money comes from the greenkeeper's budget. Furthermore it is unethical to have an inspector over golf course alterations.



Concealed or Pop-Up Tee Sprinkler

Special Engineering Service For Turfed Areas

TOPOGRAPHICAL MAPPING

Golf courses require accurate topographical maps to record every detail of the course facilities. The delineation peculiarly required for golf topography is best portrayed by Miller engineers who are used to ground and aerial-ground mapping for drainage, irrigation, and layout. If you lack complete maps, write Miller for prices.

DRAINAGE

Soil technology—the field and laboratory examination of soils—and the interpretation and practical application of these to turfing. If you doubt the wisdom of your expenditures for soil conditioning and fertilization, or if you have a soils problem to solve, send for a Miller engineer.

SOIL EXAMINATIONS FERTILIZATION PROBLEMS

Drainage of difficult soils demands the highest degree of engineering skill, experience, and soils technology. The reputation of Miller engineering was first established in the successful solution of intricate drainage problems. When your drainage system fails, or if you are planning substantial drainage construction, you can give finality to this facility by having Miller engineers design your work.

WATER SUPPLY

The water supply requires careful engineering to secure low cost water. Long experience in developing water supplies under widely diverse conditions has peculiarly fitted the Miller organization to cope with the hydraulics and economics of your water supply.

LOW COST IRRIGATION

The Miller one-man hoseless, tee, green and fairway water systems cost little more to construct (if any) than good hose systems. If you are contemplating fairway irrigation, we suggest that you consult with Miller engineers in order to secure the most and best for your money, and avoid the mistakes common to locally engineered projects.

"TROUBLE SHOOTING"

For over ten years the Miller organization has carried on an advisory maintenance and consultation service, meeting and overcoming troublesome turf situations. When you have on hand trouble which is likely to prove embarrassing, write, phone or wire for

Wendell P. Miller & Associates

CONSULTING ENGINEERS

— Soil Technologists —

105 West Monroe St.

Chicago

277 West End Ave., New York

Having "finished it off as cheaply as possible" the club now has on its hand a factory alteration that because of poor construction will greatly increase the cost of producing good golfing turf. The increased cost is very likely forced upon the greenkeeper with no budget increase, "because the alterations cost so much we cannot afford to increase the budget." The result is bound to be a lower maintenance standard, or a fired greenkeeper, which is worse.

EPIDEMIC OF LOW ESTIMATES

I HAVE spent considerable time discussing the comparison between factory alterations and golf course alterations, because at the present time there is a *serious epidemic* of low estimating golf course architects. The attack is general throughout the country and the resultant disease appears to be contagious. The cost of such type of construction to golf courses is far greater than the cost to combat brown patch, Jap beetle, sod webworm, and zonate, eye spot combined.

Of course, all golf architects do not under-estimate the cost of course alterations. Let us consider the effect of course (factory) alterations on an actual course, the alterations being made within the estimate and well done. Six greens were involved, new ones were constructed or old ones enlarged. The facts are as follows:

Maintenance budget, \$18,000.

6 greens enlarged from 5500 sq. ft. to 7500 sq. ft. or 36%.

6 greens is 33 1/3% of 18 greens.

Net increase in green size $33 \times 36\%$ or 12% approximately.

Net increase in cost of fertilizer for greens, 12%.

Net increase in cost of chemicals for greens, 12%.

Net increase in cost of top dressing for greens, 12%.

Etc., Etc., Etc., Etc., 12%.

Labor on above operations will not be increased 12%, a fair estimate is 8%. Combining the two, materials and labor, it is conservative to say the total net increase to greens maintenance cost would be 10%. This is arrived at after a careful checking of costs.

RECENT SURVEYS SHOW COST OF MAINTENANCE

FROM surveys recently conducted, we learn that the average 18-hole golf course spends 37% of the total budget on the greens. To maintain the previous standard the course under consideration should spend in 1931, 37% plus (10% of 37%) or 40.7% of its budget on the greens.

37% of \$18,000=\$6660.00 amount expended in 1930.

40.7% of \$18,000=\$7326.00, amount that should be expended in 1931.

Difference, \$566.00.

Therefore, \$566.00 represents the annual additional maintenance cost that the factory alterations effected. This argument is not based upon theory, but hard cold figures and facts. It is doubtful if committeemen think of course alterations in such an unenthusiastic way.

The simplest way to take care of this \$566.00 item is to employ less labor or use labor-saving machinery. The latter involves an additional cost, for if the labor-saving machinery was present before the alterations the increased cost would still be \$566.00. There is a big question whether "labor-

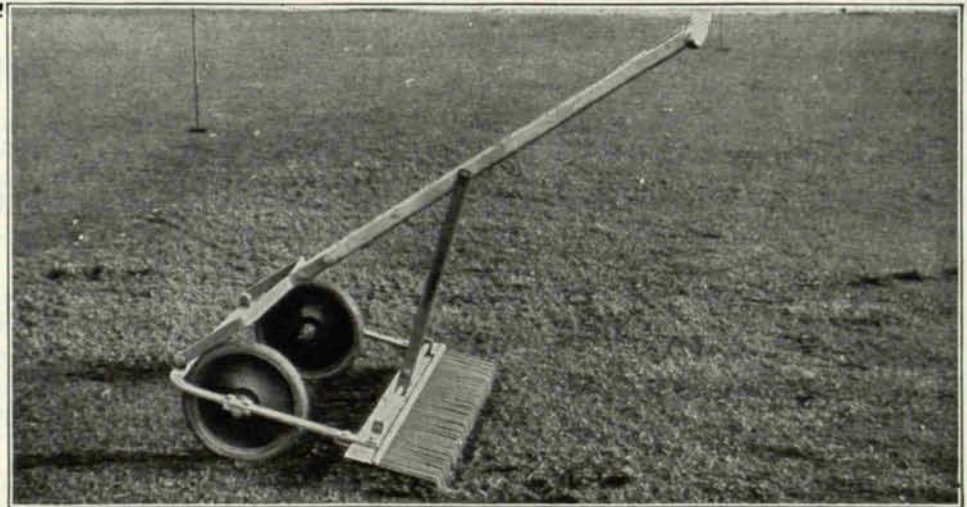
saving" machinery can really save that much. Less labor means lower standards.

Can increased efficiency on the greenkeeper's part be expected to save on the greens alone more than 20% of the \$566.00? No! Can devices such as a new bridge, new path or gasoline go-cart, be expected to save another 20%. No!! The club should increase the maintenance budget by at least \$450.00 and preferably \$500.00 and expect the greenkeeper to keep the standard of maintenance or improve it.

OH! I neglected to state that because of the course (factory) alterations, greensmen are obliged to walk approximately 1000 feet further between greens each day. Let's see how much that figures. Average for the various operations (very conservative) 10 times a week for 32 weeks, April-October inclusive, $1000 \times 10 \times 32 \div 5280 = 66 \frac{2}{3}$ miles. Three miles per hour equals 22 hours plus. This item is one of the few that make up the cost of golf course maintenance. It is included in the 10% additional cost required by course alterations.

The example cited is one of many that could be demonstrated. The matter of fairway water system

Every
Golf Club needs a
Toro
Del Monte
Greens Rake
as part of regular
equipment



For removing the grain from creeping bent or Bermuda grass putting greens . . . also for raking up the matted grass so the mower can cut it properly . . . the Del Monte Greens Rake is an exceedingly handy tool. Thirty inches wide . . . a large green can be covered quickly. Spring steel teeth, $\frac{1}{2}$ inch apart. Pressure can be regulated by operator. Use it regularly to prevent graining and maintain a true putting surface.

Write for complete catalog of Toro Equipment

Toro Manufacturing Co., 3042-3160 Snelling Ave., Minneapolis, Minn.

Service Stations at—New York, N.Y., Philadelphia, Pa., Newton, Mass., Yonkers, N.Y., Syracuse, N.Y., Troy, N.Y.,
San Francisco, Calif., Los Angeles, Calif., Jacksonville, Fla., Cleveland, Ohio, Chicago, Ill., Detroit, Mich.,
Indianapolis, Ind., Des Moines, Iowa, Kansas City, Mo., Dallas, Texas, Toronto, Ont., Can., Winnipeg, Man.,
Calgary, Alta., Can., Buenos Aires, S.A., Hamburg, Germany, H. R. Jahn, Export Distributor, N. Y.

TORO

increases the mowing costs, and increasing the number of traps is a decided added financial burden to the maintenance budget.

Well, what of it! We get our added (?) fun. Sure we do, but we don't pay the fiddler or the janitor and by and by the old dance floor gets weak, splintery, and dusty and the music off key and the ice cream is sour. Then we move to another dance hall.

Seriously, if the alterations are justifiable they are worthy of being maintained. Make them, and enjoy them, but realize that golf course alterations are seldom made to decrease the cost of golfing; so give the greenkeeper sufficient additional funds for proper maintenance.

Next month—Chapter VIII—Understanding and interpretation of costs.

Compost

By COLONEL JOHN MORLEY

COMPOST as it is generally known contains a liberal amount of organic matter, especially when it is made of sods and other vegetable matter as well as a fair supply of stable manures (free from wood shavings), and a couple of layers of sharp sand.

Compost is made for two principal reasons. First, to breed into the soils nitroifying bacteria. These bacteria take the organic materials which the compost contains, helps to decompose them and releases the various fertilizing elements, so that when they are applied to the soil intended to be topdressed they become immediately available as plant food for the grass.

Second, to create a good porous soil. In order to hasten nitrification a small quantity of lime or sulphate of ammonia should be used. This produces heat that helps to hasten fermentation. In order to check nitrogen from escaping or leaching out of a compost pile both sides and both ends should be well protected with sods. The top of the pile should consist of a layer of sharp sand so that water can enter and penetrate more freely into the soil.

In making compost we should remember that the productiveness of any soils for grasses is determined in a very large degree by the amount of water it can hold, and by the manner in which it is held. And also by the facility and completeness with which the grass plants growing in it are able to withdraw that water for their use as it is needed.

Grass Seed
Fertilizers
Rollers
Distributors
Buckner Sprinklers
Toro Equipment
Milorganite
Arsenate of Lead

J. Oliver Johnson, Inc.

World's Largest Golf Course Equipment House

Morgan-Huron-Superior Sts.

CHICAGO, ILL.

© Reg. J O J Inc. 1928

DO IT NOW!

Prepare to Give Your Fairways
REAL IRRIGATION

That's what counts. Irregular watering, unevenly distributed, cannot keep grass in its best condition through the hot, dry months. But there is a way to do it. Water your fairways with Buckner Sprinklers. They cost no more than the other hose sprinklers, and quickly save the cost through cutting down labor and water bills.

Players will thank the men responsible for the velvety, verdant fairways and greens which will be theirs continually thereafter.

WRITE FOR CATALOG. NO OBLIGATION

BUCKNER
MANUFACTURING CO.

Fresno, California

FACTORY REPRESENTATIVES
P. L. Baldock, 2240 Casitas Street, Pasadena
Gordon Buckner, Athens Athletic Club, Oakland
Buckner Irrigation Company, Nixon Building, Chicago

EASTERN ENGINEERING REPRESENTATIVES
Wendell P. Miller & Associates, 105 West Monroe Street, Chicago