

# How to Make Tees Better for Play

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Papers presented before NGSA Annual Turf Conference and Show

Making tees better for play is a full time job, requiring the best efforts of the green-keeping superintendent. The new improved grasses promise help in the future, but for the present time proper construction and intelligent maintenance practices are essential in making the tees we now have better for play.

In a discussion of tee improvement it seems advisable to break down the topic into three parts, namely, original construction, renovation programs, and regular maintenance. The basic principle of sound original construction has proven itself time and again. It is here that the golf course architect can prove himself a friend to the greenkeepers who must maintain the course after it is open for play. The most important single factor in tee construction is that of drainage—both water and air. Faulty water and air drainage invariably lead to expensive maintenance and rebuilding programs, a poorly designed and constructed tee is a perpetual sore spot to the greenkeeping superintendent. The location and design of the tee should be such that the problem of maintenance is minimized. The design, wherever possible, should allow the use of fairway power units for cutting, eliminating costly individual hand labor. Tees should be stair-stepped across the fairway, whether wide or narrow ones are used. They should be designed to protect the tee section not in use from being walked on or caddie carts pulled across. This is to allow time for grass to recuperate and for damaged parts to be repaired.

Trees have aesthetic value to the golf course but the proximity of them to the tee should be given serious consideration as they reduce air circulation and their root system gives competition to the various grasses which make up the tee. The average tree has a greater area in root system than top structure. Tree roots are active at temperatures of 40° F. and continue to feed after leaves have fallen. Tees with trees closer than twenty feet will need constant pruning of both roots and top to prevent interference with the normal action of the grass plants.

Assuming that the architect considers all these factors in locating the tee he must thoroughly understand what is going to happen to all water that falls on the tee. He must plan for excess water and provide for its free and rapid removal. Tees cut in

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In speaking of the subject "How to Make Tees Better for Play" let me first qualify the conditions upon which my experience and statements are based. My references pertain to private clubs in the northern states with an annual playing traffic of 18,000 to 25,000 rounds of golf. Normal Saturday and Sunday play will average approximately 200 rounds per day. With these facts in mind you can compare the principles involved in our tee program against those of your own.

We have set up a program at our club for the maintenance of tees that includes, first, our objectives, second, our recommendations and methods of maintenance, and third, the recording of our yearly progress.

Our objectives are: to produce a teeing area of adequate size so that repair may be kept to a minimum, to lend interest to the hole through flexibility of both length and angle of play, to have a level and firm surface, incorporating a fine turf suitable for  $\frac{3}{8}$  to  $\frac{1}{2}$ " mowing, to have the property of quick recovery and healing from physical damage of traffic and divots and, to have tees that will create an impression for their attractive appearance to the eye.

## Aerification Most Important

Before I mention the details of our maintenance methods, I want to establish the fact that our grass species is mainly mixed bent of a creeping variety along with *Poa Annua* and some *Poa Trivialis*. First on the list of maintenance procedure is aerification. We use the self propelled aerifier with half inch spoons once in the spring and once in the fall. Compaction on tees is usually greater than on greens, what with an equal amount of traffic and generally poorer soil and drainage conditions. We try to **top-dress** our tees each spring as a means of leveling the surfaces. As for irrigation, we attempt to keep the tees slightly on the dry side to reduce the damage from divots and to reduce the chances for attacks by fungi.

The next item of maintenance which can hardly be overemphasized is fertilizing. We use a complete fertilizer application twice in the spring and twice in the fall at the rate of approximately 10 to 20 lbs. per 1,000 sq. ft. at 15 to 30 day intervals. During the summer months we apply nitrogen and potash in combination, as a liquid at two week intervals. The rate of application for the nitrogen and potash is

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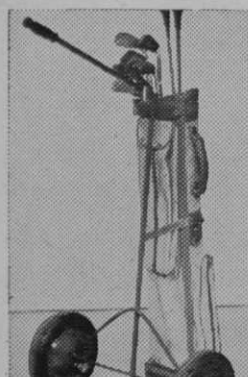
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the player, can he mulct the club for damages because of his injury?

**Answer.** No. The player alone is responsible if the club itself was guilty of no act of negligence. However, if the arrangements by which the caddy is hired, serves, and is paid make him definitely an employee of the club rather than of the player, the caddy may be entitled to file a claim against the club under the Workman's Compensation Law, for personal injuries sustained in the course of his employment and arising out of it.

19. Many country clubs furnish caddies to members through a caddy master. Is a caddy so furnished an employee of the club, or of the member playing?

**Answer.** Ordinarily, an employee of the member.

20. The owner and operator of a golf course took out a policy of liability insurance indemnifying against liability for personal injuries sustained by persons on the links, except that the insurer should not be liable to reimburse the owner for anything paid out "for injuries or death to any person or persons resulting from the participation in games or contests." A student-golfer was driving golf balls from one place under the direction of a teacher, and was not walking from hole to hole, when she was hit by a ball negligently driven by another player on the links. Did that constitute "participating" in the game, within the contemplation of the exception in the insurance policy?

**Answer.** Yes. A court ruled that "participating" includes playing golf alone, and that golf was a "game," so that the student was playing the game while taking lessons.

### HOW TO MAKE TEES

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the side of a slope should be French-drained or dry ditched or tiled. Tees should be graded to allow good surface drainage and to allow golfers to stand behind and below the ball.

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Once the tee is located and constructed, the choice of grass is the next factor, particularly for short one-shot tees. The primary consideration in any choice of grasses is that of vigor of growth and ability to heal rapidly. In the northwest, bent grass has proven satisfactory, in the midwest, use of fescue and Merion bluegrass might provide a strong enough turf, but in the west and southwest and wherever it can be grown, Bermuda is by far the best grass. U-3 and the Tifton Georgia strains are producing excellent sturdy turf. Just as bents and bluegrass require specific fertilizer programs, so do Bermudas, and U-3 is no exception. We find that heavy applications of readily soluble nitrogen during its active growing season do much in providing the tough vigorous turf we need.

To show the importance of proper drainage and selection of grasses I refer you to a talk given at the 1949 National Greenkeeping Superintendents Turf Conference held at Los Angeles. It was stated that the Colorado River water used on our golf courses contains 752 parts per million of alkaline salt, which based in terms of tonnage, means that for every acre foot of water you apply per acre per year, you add a ton and one tenth of alkaline salt. You can readily see that unless you have proper drainage you can easily build up a toxicity that will produce an unhealthy turf which will eventually die out. Where drainage is poor and conditions are such that they are harmful, the selection of an alkaline salt-tolerant grass will, though not providing a complete answer, help maintain turf. Fortunately for us, Bermuda is quite tolerant. I am sure that your local experiment stations can provide answers to the choice of grass if excess alkaline salts in irrigation water is a problem.

The second phase of making tees better for play, that of renovation, is one of the two about which you as greenkeeping superintendents can do something. In many instances it is impossible to relocate the tee but it may be possible to reshape, make longer or wider. You can prune, or in some instances remove the offending tree. Improved grasses such as U-3 Bermuda, Alta fescue, and Merion bluegrass can be

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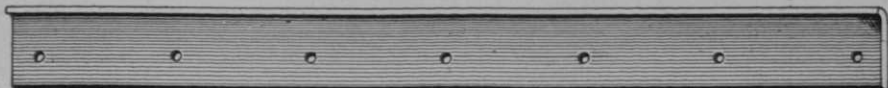
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plugged or seeded into existing tees. Surface compaction can be corrected by constant aeration, but if poor drainage caused by use of a very heavy soil is the source of your troubles, the removal of the same and replacement with a more suitable soil, or the incorporation of sand and organic matter to bring about the proper structure will, in the long run be the least expensive program.

Once the tee is constructed, rebuilt or renovated and planted to a suitable grass, the most important phase, that of regular maintenance, is on hand. Because tees are subject to heavy traffic of both men and machines, compaction is sure to occur. Compaction interferes with the movement of air and water in the soil, water fills the pore spaces driving oxygen out of the root zones, and without oxygen it is impossible for roots to perform normal actions. Cultivation of some form is necessary to prevent soil compaction and with modern aeration equipment we are able to provide just that cultivation, permitting air, water and food to reach the root zones.

Along with aeration is the principle of proper watering. Moderate use of supplemental watering will favor the development of turf while excessive watering encourages disease, crabgrass invasion and shallow root systems.

After providing for drainage, aeration and proper watering we must next consider feeding the turf. Soil tests and soil types will determine the elements needed locally for good growth. In our fall program of renovating our municipal courses we have done the following: replaced considerable worn turf with sod from our sod nursery, hollow-tooth spiked the tees, drilled a mixture of Alta Fescue, Meadow Fescue and Blue Grass into them, using a disc drill seeder, then we covered that with a 1/4" layer of fertilizer from the outfall sewerage plant, and covered that with a coating of well-rotted horse manure that we accumulated from riding stables in the vicinity. A continued schedule of top-dressing, feeding, reseeding, fertilizing and resodding is needed if you are going to have good tees.

In the Los Angeles area, we have high hopes that the U-3, and U-12 Bermuda strains are going to eliminate a lot of our headaches. From our tests so far, it looks very good. We have planted over 2,000 six-inch plugs in tees at our Rancho Golf Course and they are rapidly filling in, this, notwithstanding the wear and tear of tramping feet and caddie cart traffic.

Now briefly to summarize. In making tees better for play, wherever possible, start with the proper construction. Tees built right will remain so. Avoid pocketing by trees to prevent air circulation and root competition. Use a good loamy soil for construction, provide for surface and sub-



soil drainage, and follow maintenance practices which tend to build strong turf and prevent compaction. It is essential to give the same consideration in planning construction and maintenance of tees as you would give to the preparation and care of putting greens.

From the golfer's point of view it has a better psychological effect both for his golf game and his feeling of well-being to tee off from a well-groomed tee.

## HOW TO MAKE TEES

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approximately  $\frac{1}{4}$  lb. of each actual material to 1,000 sq. ft.

Another of the important operations is the application of fungicide. We use a preventative schedule similar to a green program. In this past season we used Cadmate at 4 week intervals with very good results. Insecticide is applied about 3 times per year in the form of Chlordane and mixed with the liquid application of fertilizer. In speaking of chemical applications I should also mention that weedicide treatments have not been required, probably as a result of ample fertilization of the creeping bent.

A maintenance practice deserving top emphasis is the mowing procedure. We are using single unit power green mowers set at  $\frac{3}{8}$  inch cut. The tees are generally mowed every other day. I believe it desirable to have a multiple type mower for this job, but at the present time there are none available that will cut under  $\frac{1}{2}$ " and catch the clippings too. While I am speaking of mowing, I would like to add that the trimming of the tee banks is an operation that is omitted on many courses. I believe this operation is also desirable, if practical, to enhance the general eye appeal of the tee. We trim our tee banks along with our

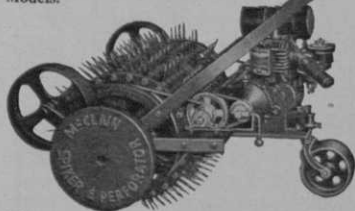
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green banks at a height of approximately  $\frac{3}{4}$  of an inch.

One of the biggest problems in tee maintenance is the repair of divots. We have found that our best answer to this problem is in covering the divot with a mixture of top soil and annual ryegrass seed, placed by hand. This mixture is applied once each week and under normal conditions the scar is covered with grass within a week. The ryegrass is eventually crowded out by the bents. On short par 3 holes it is sometimes necessary to plug the divots, especially during periods of heavy play. The saving of man hours by this method of using soil and seed is tremendous as compared to plugging.

The locating and moving of the markers plays a big part in the maintenance of tees as well as in the game of golf. There would be no problem involved if we rotated the marker settings only with respect to the condition of the turf, but the players rightfully deserve variation of location with respect to wind, yardage, and angle. I have not yet found a practical solution to this situation except giving considerable personal attention to the location of markers at all times. At our club the men who mow the tees move the markers and then I double check them myself.

The last item of maintenance I would like to mention is the ball washer. Two factors are important—location and con-

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dition. Locate the washer so that it is readily accessible regardless of the tee marker locations and above all keep ball washers in repair with a good coat of paint and change the towels often enough so that they do not become unsightly. Much of the same can be said for the tee bench also. In the case of permanently located washers, if they are located along the approach to the tee and given a base of macadam or stone this will take care of the situation very well.

Regardless of our maintenance practices, we sometimes find it necessary to reconstruct tees in order to obtain our objectives. Tees that were built 25 to 50 years ago do not answer the requirements of today. Our reconstruction program calls for the rebuilding of 3 tees each year. In rebuilding, we improve the soil type, increase the size, level to the proper grade, change the turf and increase the variation of angle of play if possible. In the changing of the turf we frequently use the sod from a green that is being rebuilt. There is no yardstick that can be used to determine the size that tees require, however, I have found that a surface of from 4,500 to 6,000 sq. ft. is the optimum size for our traffic.

In conclusion, I can sum up my message of "How to Make Tees Better for Play" by saying, maintain tees of adequate size and treat them similar to your greens.

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