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A golf course will, in due time, reflect the personality, knowledge and efforts of the people who are in charge of it... L. J. Feser, writing in The Golf Course Reporter, recalls an aspect of greenkeeping which can be easily forgotten.

Efforts towards perfect playing conditions are often made on standard, safe lines without asking whether the result is really desirable. There is need for analysis before action. Are close lies through the fairway nearer to essential golf than those well-cushioned? Will fast greens, alarming to approach, be more likely to reward the golfer with courage and skill enough to endure under pressure? What, in fact, are perfect playing conditions? Certainly there is more to them than the comfortable, tidy picture which the phrase conjures up.

The job of the golf greenkeeper is to aim at a particular, rather than a perfect playing condition on his course. And he must be prepared to defend the result. To be stimulating to the player this should reflect the thought and brains of the man in charge. The last thing the man in charge should have is a woolly notion of green acres with no weeds, however desirable that may be on other scores. He must think hard about the game of golf and his own course and decide what is best in the one and how best to demand it in the other. The objective, once decided, will be a compromise with soil, climate and funds, but funds will only limit the trimmings not the essentials. Whether planting a single tree or a hundred trees, there are still fifteen distinct questions to be answered before deciding the location. Knowing the questions is just as important in this job as knowing the answers.

We often find ourselves embarrassed, when visiting a distant golf course by apologies for its size, importance or situation. But none of these factors is of the least importance once the course has been made, even if you wish it never had been. Whatever the mistakes of the past, the problem now is to get the most out of that particular piece of ground. The greenkeeper must ensure that his methods are aimed at perpetuating not counteracting the fun, interest, skill, excitement and challenge which good design should produce.

If the golfer wants to come back because your course is not like all the rest, you are putting a bit of yourself into it and doing a good job. And enjoying it more into the bargain.
WHY IS A WEED?

It was inevitable, I suppose. With men and their time and labour becoming progressively more and more valuable and expensive, the easy way out for Committees, Secretaries and Greenkeepers is to turn to mass methods to deal with details which used to be done by hand. So much so that it is heresy nowadays even to suggest that the best way to deal with weeds is other than by the use of sprayed weedkillers.

Dangerous

Yet close acquaintance with one’s own course suggests emphatically that the old way of dealing with them was best; and the new way dangerous. Weeds for one thing, seem to have a habit of coming back with greater and greater enthusiasm after a period of apparent extinction by chemical treatment. The suspicion begins to arise that there may be a parallel here between D.D.T. on insects and the post-war weedkillers on greens. When insects began to develop strains resistant to D.D.T., the knowledge of this was at first something of a curiosity amongst research men, enshrouded in cautious phrases in learned periodicals. Then the race to produce new compounds to deal with D.D.T.-resistant insects began; and the chain of new resistances and then new chemicals to meet it got really under way, and now seems to be the accepted progressive pattern. This might be beginning to happen with weeds and weedkillers. But what is certain is that very little is known about the long-term effects on old turf of weedkiller treatment. If it seems to the man who has known the same ground for a long time that the standard, health, and quality of turf has steadily deteriorated since weedkillers of the modern type came in, this may be illusion. But it may be—as it appears to be—fact.

Who is to say what a weed is, anyway? The best definition—to a golfer at least—is simply a plant that gives a bad lie or interferes with the smoothness of the putting surface; and nothing else. On any course that had been well-tended in pre-way days, the invasion of weeds of this kind was negligible. The ones that did come in were dealt with in the simplest and most effective manner: on the greens, the greenkeeper just bent down with a pocket knife and cut the offending plant out as soon as it began to show itself. The time spent on removing weeds of this sort cannot have added up to anything worth reckoning even over a whole year.

Fairway drill

The fairways, on the other hand, did take time. The drill at my club was for the ground staff of five to take each fairway in turn once a year and go down it in a line across, each with a bucket in one hand and a weeding tool in the other. In this way, each weed stood a good chance of getting removed before it was a year old, and the slow developers never lasted more than two. The work could go fairly fast, too, since the number of weeds to be removed remained small, and they stood out to the eye.

Now that this system has been abandoned, most of our fairways are thoroughly invaded by broad-leaved weeds, especially where trolleys have worn the grass: and the only con-
receivable way to deal with them—old style—would be by parties of members, twenty strong, on each fairway in turn: followed by a subsequent annual assault on the same scale. And why not? There are enough members in the club for each fairway to be covered, on average, by each man sparing one afternoon a year: not much, to preserve the quality of the course, and the impeccability of a brassie lie when you most need it, so simply and safely.

Chemical treatment

The alternative of chemical weeding of the fairways might have an effect that could never be foreseen. Heath turf, especially on sour ground on chalk country, could—one cannot help fearing—be badly damaged by them. There is a lot more in it than just grass; and it depends on its springiness and wearing qualities on the whole compound of vegetation co-existing and inter-complementing itself.

The risk in chemical treatment might be great—and there is no real need for it!

But if the fairways do present an undoubted problem in labour and time, now that they have been allowed to lapse so far from their old impeccable freedom from weeds, the greens surely are a different matter. If the greenkeepers and the Secretary have their eyes about them, and walk them regularly with a careful and judicious eye and a knife in hand, then there just should be no weeds in them: and no problem. If an ordinary member can itch to carry a pocket-knife (for greens) and a weeding tool (for fairways) in his bag every time he goes round, then surely the situation is beginning to get plain silly. I’m not saying it applies to all courses by any means; and many are still beautifully tailored in this respect. But others aren’t, show no signs of being—and mine, which I love quite unreasonably, is one of them!

Perhaps if I went out after dark with a torch, I might get away with it. Perhaps not. It shouldn’t take more than a couple of years to complete the job single-handed. How desperate can one get?

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TIME TO TURN IT IN

Economists W. J. Dunford and R. C. Rickard pinpoint the best stage at which to sell a piece of machinery

Costs involved in owning and operating any machine are of three kinds:—the purchase price; the repair costs necessary to maintain it in efficient working order and the running costs, comprising fuel and servicing expenses. Of these only the first two (purchase price and repair costs) need concern us since it is assumed that repairs will include such maintenance as will render both quality of service and running costs constant. The latter are therefore considered to be unrelated to length of working life.

The longer a machine is kept, the greater will be the period over which its initial price is spread. At the same time, repair costs will be incurred at an increasing rate. The total of the purchase price and the accumulated repair costs at any stage in the machine's life may for our purpose conveniently be termed "holding cost".

We have taken a medium Diesel tractor costing £600 new, as an example, and we have prepared a typical schedule of cumulative repair costs over its life, measured in hours worked. The holding cost of the tractor is shown in diagrammatic form above right.

Cost Curve

The initial and replacement price of the tractor (£600) is shown at point P on the vertical axis. By adding successive cumulative totals of repair costs to the initial price, the holding cost curve PH is obtained. The slope of PH is seen to steepen over its length as total repair cost increases with age. Thus, at 2,000 hrs., holding cost is £635, and holding cost per hour worked is £635 divided by 2,000. This equals 6.35 shillings per hour.

Assuming no second-hand value to be realisable, the optimum time of replacement is seen to be at T, after 4,500 hours, at which point the lowest holding cost per hour (RT divided by OT) is achieved — £900 divided by 4,500 equalling 4s. per hour. Replacement earlier or later than point R will clearly result in a higher holding cost per hour being incurred.

When trade-in facilities are available, the diagram shows the minimum exchange value the owner should be prepared to receive for his tractor if he decides to replace it before it has worked 4,500 hours (point T).

Holding Cost

Suppose a farmer who owns a tractor which has worked 2,000 hours (shown by point S on the horizontal axis) and is undecided whether or not to replace it by a new one.

In order to achieve an average holding cost no greater than he would have incurred had he kept it until point T, he would have to receive a second-hand
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value of £235, represented by the line IJ. This restores him to the minimum average holding cost of 4s. The distance between the holding cost curve PH and the minimum average cost line OG can be regarded as the lowest exchange value which could induce the owner to consider replacing the existing machine with a new one.

Extracts at intervals of 500 hours from the data presented in the diagram are shown in Table I.

Table 1.— Total Holding Cost and Break-Even Exchange Prices for a Medium Diesel Tractor Costing £600 New

<table>
<thead>
<tr>
<th>Working Life</th>
<th>Total Holding Cost</th>
<th>Holding Cost per Hour Worked</th>
<th>Exchange Value Required to Equate Minimum Holding Cost of 4s per Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hrs.</td>
<td>£</td>
<td>Shillings</td>
<td>£</td>
</tr>
<tr>
<td>0</td>
<td>600</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>500</td>
<td>600*</td>
<td>24.00</td>
<td>500</td>
</tr>
<tr>
<td>1,000</td>
<td>608</td>
<td>12.16</td>
<td>408</td>
</tr>
<tr>
<td>1,500</td>
<td>618</td>
<td>8.24</td>
<td>318</td>
</tr>
<tr>
<td>2,000</td>
<td>635</td>
<td>6.35</td>
<td>235</td>
</tr>
<tr>
<td>2,500</td>
<td>660</td>
<td>5.28</td>
<td>160</td>
</tr>
<tr>
<td>3,000</td>
<td>700</td>
<td>4.67</td>
<td>100</td>
</tr>
<tr>
<td>3,500</td>
<td>750</td>
<td>4.29</td>
<td>50</td>
</tr>
<tr>
<td>4,000</td>
<td>820</td>
<td>4.10</td>
<td>20</td>
</tr>
<tr>
<td>4,500</td>
<td>900</td>
<td>4.00</td>
<td>0</td>
</tr>
<tr>
<td>5,000</td>
<td>1,020</td>
<td>4.08</td>
<td>—</td>
</tr>
</tbody>
</table>

Over the first 500 hours, the maker’s warranty will be in operation and there will be no liability for repairs.

The column on the right of the table shows the minimum exchange value required to attain an average holding cost equivalent to that obtainable had the tractor been kept until it had worked 4,500 hours.

Tax Allowances

Under present conditions there are factors other than the initial and replacement price and the cumulative repair cost which must be taken into account. Of these, the most important are probably income tax allowances, the need to keep up to date with technical improvements and the increased risk with age of mechanical failure.

The question of income tax is very much to the fore. The substantial capital allowances which are frequently available in the early years of a machine’s life are thought of as a strong inducement to a more frequent replacement of machinery. In fact, provided the farmer’s anticipated income would be taxed at a constant rate, capital allowances, with the exception of the investment allowance, in themselves are largely irrelevant to the timing of replacement.

Investment allowance excepted, capital allowances given prior to the machine’s disposal are little more than provisional. The balancing charge ensures that the initial and annual allowances given in excess of the actual market rate of depreciation are withdrawn at the time the machine is sold.

Market Rate

Similarly, a balancing allowance is given should the actual market depreciation exceed the total of allowances already given. It is, therefore, the market rate of depreciation (that is, purchase price less value realised upon sale or exchange) which eventually determines the amount of the initial and annual allowances finally retained.

The principles governing replacement as described earlier are thus in no way affected.

Technical improvements are likely to result in obsolescence in earlier models, and this may be a factor in the timing of replacement. Innovations will tend to depress the second-hand value of out-
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of-date models, so that there is little likelihood of the owner achieving the minimum exchange value needed to induce him to part with his existing machine.

If, under these circumstances, the owner is still prepared to undertake replacement, then the real cost to him of the improvement element of the new machine is the amount by which the trade-in value (plus the tax relief from any investment allowance) falls short of the minimum exchange value otherwise indicated.

Old Risks
The risk of mechanical failure increases as a machine gets older. Breakdowns at busy periods may prove expensive both in terms of the cost of emergency repairs and the disruption of farming operations. Although breakdowns will be minimised by proper attention to maintenance and repairs, failure cannot be ruled out entirely.

Where a farmer is particularly concerned at this risk, he would be advised to replace at the first opportunity of securing the minimum exchange value rather than defer replacement in the hope that more favourable trade-in terms might subsequently materialise.

The example used in this article is a realistic one, but it relates to one type of tractor only, operating under average conditions. Its usefulness lies in the fact that it can readily be adapted by the individual, in the light of his own experience, to suit a wide range of machinery and working conditions.

With grateful acknowledgments to the authors and the "Farmer and Stockbreeder".

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