Modern mechanized course maintenance has been the salvation of the greenkeeper who is hard-pressed to preserve highest course standards despite a steady increase in labor costs.

However, there are many problems in adjusting the work of the new and faster machines with the remaining labor that must be done manually, so wise planning to schedule work of machines and man is necessary in order to secure utmost effectiveness and economy from the new machines.

John Anderson, practical greenkeeping authority, outlines some of the factors the greenkeeper must consider when planning his course work to get greatest economy and performance from a proper division of machine and manual work.

LET us review labor costs on the average 18-hole course just before the depression. Then there were no 7-unit fairway mowers, very few power putting green mowers. Sickle bar mowers attached to tractors were mostly failures in that they were either too great a strain on the part of the tractor to which they were attached, or the cutting bars themselves would not stand up under rough mowing conditions; so that on most 18-hole courses a crew of 9 to 10 men and sometimes as many as 12 had to be kept, especially if the club demanded a well trimmed layout.

In 1925 Donald Ross, golf architect, was called into our club to discuss some alterations. The green-chairman asked him how many men he thought were necessary to maintain a first class course. Donald answered, at least one for each hole. So you see if an architect lays out an elaborate course, with the thought in mind that it will have 18 men to maintain it, and then it turns out that only 9 men are supplied to do the work, the course will not look nor play the same as the architect visualized. If, on the other hand, the architect built a course with the idea in mind that only nine men would be needed to maintain it, and the greenkeeper had 18 men to do the maintenance,

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it would look like Colleen Moore's doll house in a New York slum alley.

These points are just brought out to show that there is a relationship between the work of the architect and the maintenance of the golf course. Some of our best golf architects have tried to build greens and tees so that there would be a minimum of labor required, but generally it has not worked out that way. For instance some tees have been elevated and the banks drawn out to a gradual slope so that they could be mowed along with the fairways, but most players like the tees more closely cropped than the fairways. Then again there should be 60 to 100 yards of rough between tee and fairway proper so that a bad tee shot is penalized, and time is lost in the moving operation if that is to be done as it should.

Greens Force Reduced

But let us get back to the beginning of the depression when most clubs had to cut their cloth to suit their pocketbooks. In most cases the greens crew was first to be reduced both in wages and numbers of men. In many cases where previously the greenkeeper had a crew of 9 men he had to get along with 6 or even 5. Then it was that the leading equipment manufacturers, in many cases at the urge of the greenkeepers, started manufacturing larger gangs of fairway mowers, not only to cut wider swaths, but sturdier so that they could be speeded up a few more miles per hour. Actually the latest fairway units can be speeded up to almost 15 m.p.h. and still stand up; whether they make an ideal cut at that speed is open to question. We find that at any speed over 10 m.p.h. all the makes of fairway units will more or less roll and jump, making a wavy cut which is objectionable to the players. Then again, although most of the newer rubber-tired tractors will pull seven units under almost any condition, there are times when the course is so wet and the grass so heavy, that even the dual-tired newest make of tractor will slip, causing cultural damage.

However, supposing the 7 gang set of fairway mowers could be speeded up to 15 m.p.h. and that the tractors could handle them properly, just how much are we going to save? If, under the old method, it took a man with a tractor and 5 units two days to cut an 18-hole course, under the new method, with a new type tractor and 7 units, he can do it in half
Right Now
is the time to check over your ball washing equipment. See that the Lewis Washers you now have are in good shape—then replace or add to them so that you have Lewis Washers at every tee. That’s the way to be prepared for the big season ahead.

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the time. You have saved a man’s time probably two days a week and released the tractor for other work. However, I believe most of us will find that is a maximum.

Power putting green mowers on certain daily fee courses have enabled owners to operate and make a profit when without them they might have had to close down, even when most courses are still operating with a labor budget considerably less than they had in 1929. Green-chairmen and greenkeepers have been taking stock of the newest machines with a view to cutting labor costs still lower. They have not gotten far because right now labor costs are down as far as is consistent with the type of maintenance required.

Power Saves Hours
Let us consider the facts: If the greens on any course average 7,000 square feet and 5 men require 3 hours to mow them, 15 hours in all—two power mowers will do the mowing in the same time, 6 hours. In all you have saved exactly 9 hours each day. The greens are mowed; that is one man these two machines have saved you. In order to save one man you have to purchase two machines. Then, as we have shown, when you come to do other work such as traps, topdressing, weeding or any other job on the course, you are one man shy. I am very much in favor of the power putting green mower as a labor saver at times when other work is more important than the mowing of the greens.

Power Unit Frees Men
At most clubs play is light one or two days a week. That is the time when your power mower really releases labor for other jobs which on these days are more important to you than the mowing of the greens. There is generally a tee to sod or repair, the road to fix, or some extra planting to do. If necessary, one man can mow all the greens on these days with the power mower, and really save labor.

So, when we get down to actual cases, one power mower on any 18-hole course will not allow the greenkeeper to dispense with one man. Some of us have a real problem in getting the rough cut and there is need for better and more economical machinery to do that job. Generally the older or more used fairway units are ganged up into 3’s or 5’s for this job and supplemented by a hay mower for the heavy rough. We have found that the
units do not make a perfect job on the rough, except it is constantly kept closely cut about 1 to $1\frac{1}{2}$" and we find by doing that, the player who slices or hooks into the rough often gets just as good a lie as he would do on the fairway. So we try to keep this rough a little longer and more dense than we can do by cutting it with the units. This means that we have to cut it with the hay mower almost always. That is a slow job and we find that any time saved by the new fairway units is more than taken up in cutting the rough.

Rough Gang Unit Needed

The newest hay mowers, with rubber tires, are an improvement and do a good job, but when you ask a hay mower to cut and cover about 250 to 300 miles a week, or something like 9,000 to 10,000 miles a season, they are just not built that way, so there is a need for a gang unit that will cut the rough higher, and at a greater speed than anything we have as yet.

However, I believe one or two of the leading equipment manufacturers are working on something to fill that want, but if and when we get that we shall require just as many men as we now have, or more if we can get them. There is one other machine that I have given some thought to, namely a machine to rake short cut grass and leaves. Those who have many trees adjoining their fairways and all over their property will appreciate the need for this. The farm hay rake is no good for this and the sweepers on the market are only for greens and hand work, although we have tried linking three of them up and pulling them with the tractor. However, they are not built for that. I have been in communication with most of the manufacturers trying to get a machine of this sort for that work, but with very little success to date.

A J. CARTER, secy-treas. of the Hiland
Public GC of Butler, Pa., is a patient, gentle man most of the time. But recently he got his dander up and penned this wail, which will be thoroughly understood by all golf club officials. Carter's classic:

"How about every club hiring a big, beefy foolkiller, with a big, knobby club, to follow ill-bred and inconsiderate vandals around the course, knock them kicking and