

TURF EQUIPMENT: The How-To's Of Selection

The authors tell how the superintendent should go about selecting the best piece of equipment for the prescribed job, in view of the ever-increasing sophistication and range of maintenance machinery

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The superintendent is in a bind. He is expected by his members to maintain an almost perfectly groomed golf course despite increasing numbers of avid golfers and dwindling sources of funds, labor and energy.

Out of necessity, he has turned to technology as an alternative that promises to cut his Gordian knot. New developments in grounds maintenance equipment in particular offer the superintendent his greatest expectation.

A case in point is the new power sand trap raking equipment. Raking sand traps traditionally has been done by hand, which is time-consuming and tiresome. Also, the quality of the raking may be inconsistent. A man sweating under a hot afternoon sun will not work nearly as well as he will at 6:30 a.m. And he will rake a wet trap differently than a dry one.

A powered raking machine does

rake uniformly, regardless of sun, heat, time of day, wet sand or dry. Time and over-all maintenance costs are reduced. The Toro Sandpro, for example, rakes a 68-inch width, cultivating and raking simultaneously. At 1,000 square feet a minute, this machine can rake 18 average size sand traps in an hour. Another plus: Many users have found that the pay-back period for this piece of equipment is between three and six months, making it a sound investment.

Another piece of equipment that can improve the quality of outdoor grounds maintenance while lowering over-all costs is the riding triplex greens mower. This mower does a better job of cutting, does it more quickly and can cut over-all costs, all of which are advantages over the older greens mowers.

The chart on page 56 shows the

amount of labor savings possible by using one riding triplex unit on an average 18-hole course as compared to one walk unit.

Two triplex greens mowers will decrease total mowing time even more dramatically, and time is money on a golf course. The faster the greens are mowed, the more players can play on a public or semi-private course and the more free time a private club member has to play on his golf course.

The golf course maintenance equipment produced today often differs considerably from its predecessors of only a few years ago. Improved design concepts, new materials, new manufacturing procedures have combined to produce more durable machines, machines of greater flexibility and easier handling. Although more complex and precise, they are simpler to maintain and service.

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These features make these machines ideally suited to solve the problems of golf course maintenance. The price tag of these units usually is substantial, however. This places a new burden on the superintendent, whose responsibility it is to prepare pertinent data and recommend or decide on the acquisition of new equipment. This responsibility necessitates keeping in close touch with equipment manufacturers and their representatives as well as following certain guidelines that will help the superintendent in his decision-making process. Among the factors the superintendent needs to consider are:

1. The time available for course maintenance;
2. Availability of labor;
3. Special terrain features, unique design and landscape characteristics;
4. The level of maintenance required by the membership;
5. Funds available and their sources;
6. Whether the course is new or established;
7. Availability of parts and service;
8. Plans for expansion or growth, if any, and
9. Total cost.

Time available to do the daily and weekly maintenance jobs is determined by the amount of play, the degree of interference with play (or maintenance) permitted by course officials and climate, such as heavy dew or frost, rainfall and heat stress. Any factor that reduces the time available for maintenance work will influence the kind and the amount of equipment. For example, if play is consis-

tently heavy and club or course rules permit minimal interference with play, then high capacity, durable equipment that is easy to adjust and maintain is essential. If the available time is further squeezed by adverse climate, the superintendent should plan to buy high-capacity equipment along with extra "back up" or reserve units.

Availability of labor. If the golf club is located in an area with a limited labor force and heavy playing periods occur when supplemental labor (students, retired or semi-retired help) is unavailable, then labor saving, high-capacity equipment must be programmed. Otherwise the condition of the course may deteriorate.

Special terrain features, unique design and landscape characteristics must be taken into account when establishing criteria for selection and purchase of equipment. For example, courses divided by highways, courses with a large number of relatively narrow bridges or with small streams or drainage ditches not easily crossed by small-wheeled vehicles; courses with small or very large greens and sand traps; courses with heavily wooded roughs, and courses with no roughs or with intermediate roughs, are all determining factors.

The level of maintenance required or tolerated by the membership is a major consideration in selecting equipment. Yet, too often, it is overlooked both by the superintendent and the club membership. Too often, the equipment and the materials required for the highly-groomed, well-manicured course, expected and desired by the membership, are simply

PAY-BACK PERIOD* ANALYSIS

Cash Out	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Investment (less trade-in) ** equals (\$4,000 - \$600)	\$3,400	\$0	\$0	\$0	\$0	\$3,400
Cash In						
Labor savings	\$800	\$800	\$800	\$800	\$800	\$4,000
Operating cost savings	\$300	\$300	\$300	\$300	\$300	\$1,500
Maintenance savings	\$500	\$300	\$500	\$550	\$600	\$2,450
Total Cash In	\$1,600	\$1,400	\$1,600	\$1,650	\$1,700	\$7,950
Accumulative Total	\$1,600	\$3,000	\$4,600	\$4,600	\$5,250	\$7,950

*Pay-back period: time required to pay back initial investment. In the above example, the payback period is 2 1/4 years. In general, a one to three year payback period is acceptable for a business investment.

**New riding greens mower is worth about \$4,000; a four-year trade-in would be worth \$600.

unrealistic with available funds. And unless this condition is understood by sympathetic, influential club officials, a turnover of superintendents is one likely result. There must be a realistic estimation of the level of maintenance feasible with existing resources.

The funds available for the purchase of equipment, total funds or monthly allotments, and the impact that the use of this equipment will have on the financial structure of the club are substantial factors in the selection and procurement of equipment. When cash reserves are limited, and the club cannot or does not want to finance new equipment, then a leasing program should be considered, especially if the club enjoys a sound, favorable cash flow throughout most of the year.

Savings in labor costs are possible with high capacity equipment by releasing one or more laborers to work on other projects; or in some cases, by making possible a reduction of the labor force.

The age of the course, its stage of development and club plans for renovation, relocation or expansion need also to be considered. Although the equipment needed for a new course is basically the same as that for a comparable, but older, established course, the available funds may be more wisely spent on the acquisition of used, rather than new, equipment. This is particularly true in areas where turf is slow to establish or where dust, grit and similar materials will be present for one or more seasons. The excessive wear produced under such conditions may necessitate premature replacement of new equipment. And considering that all used equipment will not wear out at the same time, funds for their replacement can be spread over one or more seasons. The same planning approach may be used for rebuilding and relocation plans in expansion programs.

Golf course maintenance equipment must be supported with parts and service facilities. To use its operating dollars most effectively, the club must, in cooperation with the manufacturer, the distributor and his representatives, develop service programs that take full advantage of the club's own facilities and capabilities. Some distributors provide regularly scheduled mobile service trucks, which are capable of handling all but major breakdowns.

Many distributors establish special service and overhaul programs during off-season periods to accommodate golf courses. The availability of this type of preventive maintenance must be considered in developing programs for equipment purchases.

When the club has decided that buying equipment is necessary, what needs must the new (or used) units meet? They should be high quality, efficient machines that can do the specific job. They should be durable, long-lived and easy to service. And they must meet standards of operator comfort and safety, such as up-front operator position for good visibility; comfortable adjustable seats; simple, automotive-type steering, brakes and controls; adequate shielding; low noise levels and appropriate instruction books and safety decals.

The provident superintendent should also be alert to what the new trends in equipment design are and keep his mind open to what will best serve his maintenance program, perhaps by preparing a comprehensive feature-by-feature comparison of the different machines offered. He should ask his dealer for the specification sheets and review them with the sales representatives, considering especially the significant or prime features of the equipment, type of reels, engine horsepower, kind of tires, and so on. He might also ask his dealer for a live demonstration. This way he can see how the machine actually operates under course conditions. At local or national gatherings, the superintendent might also ask other superintendents who have used the equipment for their views on performance, problems and so on.

Trends of which the superintendent should be aware are toward:

The use of a hydraulic drive system, which avoids dangerous belts and chains that require continuous adjustment. This system provides slip-clutch capability by using integral pressure release valves. And it is a simple system, involving a hydraulic pump, possibly some hydraulic hose and a gear or a piston motor.

The use of water-cooled engines, which provide long life. The four-cylinder engine in the Groundsmaster 72 has a warranty of 1,500 hours and a life expectancy of between 3,500 and 5,000 hours. The expected life of an air-cooled engine is around 1,000 hours. A water-cooled engine is less

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years of service followed by an additional 10 per cent after each year, so that a total of 100 per cent occurs after 15 years.

3. Standardizes minimum funding for pension plans.

4. Establishes a voluntary program for portability through a central fund. Employees of participating employers would be able to transfer vested credits from one employer to another.

5. Establishes a planned termination insurance program, which would guarantee that vested credits of the employee would be paid if an employer should go out of business and if the pension plan of that employer does not have sufficient assets to pay.

6. Provides new rules for trustees and fiduciaries.

7. Requires more comprehensive disclosure by the employer to the Federal government and to workers.

8. Establishes Federal jurisdiction in this area and provides remedies both to the Government and to the worker in the form of civil suits for the enforcement of these provisions.

Requirements under HR 2 provide for full vesting after 10 years of the accrued portion of the regular return benefits attributable to periods after the effective date of the bill for vesting after a period not exceeding 10 years or 50 per cent of the entire accrued portion of regular retirement benefits, which would then be increased by 10 per cent a year after until 100 per cent has been reached or vesting after a period of service not exceeding 20 years of the entire accrued portion of the regular retirement benefits. The period of service then required for vesting would be reduced at least one year for each year the plan had been in effect after the effective date of the act, plus one year for each two years that the plan was in existence prior to enactment, until the required period of service did not exceed 10 years. The provisions of these bills do not seem relevant to smaller clubs, which generally employ less than 40 employees, but will affect larger organizations.

HR 2 seems to be the bill most palatable to clubs because of its low rate of vesting and lack of filing requirements with any governmental agency.

ALIEN LEGISLATION

Another area of legislation that seems

to have a potential effect on clubs, concerns the entry and control requirements for alien workers.

Two bills have been submitted to the House. HR 982, which passed the House on May 3d and is currently in the Senate Judiciary Committee calls for the application of sanctions to employers who knowingly employ aliens, who have entered the country illegally. As of the present date, there are no prohibitions or sanctions against the employment of illegal aliens. This bill could have a very significant effect on some clubs employing numbers of aliens. The bill is designed not to impose any new obligations or requirements upon an employer, but to prohibit the knowing employment of illegal aliens.

Although the evidentiary standards for what constitutes a bona fide inquiry by an employer are not specified, one affirmative defense that an employer could use to rebut a charge of violation is the showing of a form, signed by the employee, in which the employee stated something on the order of, "I certify that I am a legally entered alien and lawfully permitted employment of this type."

Indeed, the committee report indicates that discussions have been held between the Immigration and Naturalization Service and the IRS regarding the feasibility of revising the W-4 Form to include such a question on citizenship and alien status.

A second bill, currently in the House is HR 981, concerns the establishment of a permanent system for Western Hemisphere immigration of aliens.

The House Judiciary Committee is holding hearings on this bill. The effect of the bill would be to establish a preference system for potential immigrants from the Western Hemisphere much the same as the requirements that now exist for immigrants from the Eastern Hemisphere. First preference under HR 981 would be married sons and daughters and unmarried brothers and sisters of United States citizens. The second would be highly skilled and professional workers. The third would be skilled laborers in occupations in which there is a shortage of employable persons in the United States. The fourth would be aliens principally engaged in religious duties. This would contrast with the present system of immigration from the Western Hemisphere

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expensive to maintain over its life span, runs smoother, quieter, and it is easier to control emissions with a water-cooled engine.

The use of diesel engine power. The torque characteristics of diesels are excellent. They have long life, lower operating costs and lower maintenance over the life of the engine. These benefits more than compensate for the initial higher price of the unit. They will become even more important as the gasoline shortage grows.

The last major consideration is cost analysis, not just initial cost, but what is called "total cost" buying. On the balance sheet must go: the initial price, the economic life of the unit; the operating costs; time and dollar savings; maintenance costs; risk of downtime, and trade-in value.

As in any business, it is the figure on the bottom line that counts.

Purchases made within the framework of the guidelines set out here have the advantage of assuring the superintendent that his recommendations are sound and of assuring the club that its money is being handled and managed properly. □

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they were involved in brand selection of turf materials.

Calls by turf products salesmen generally are handled jointly by the green committee chairman and the superintendent. Asked if the salesmen call directly on them or jointly with the superintendent, 57.6% of the green committee chairmen said "jointly," and only 5.3% said "directly on me." An even greater percentage of green committee chairmen—74.1%—said they work regularly with both the professional and superintendent on matters concerning course maintenance.

GOLF CAR ACQUISITIONS

Golf cars are unique among the product mix in the operation of a club, because they probably draw more administrators and officials into the decisions on acquisition than any other product. The survey supports this belief. Asked if they have any voice in the purchasing or leasing of golf cars, "Yes" responses were: professionals, 75.6%; presidents/owners, 74.3%; managers, 59.4%; green committee chairmen, 52.9%; and superintendents, 37.5% □