REBUILD OR REPLACE? — JUST THE FACTS —

Who: Landscape managers, lawn care operators, golf course superintendents, groundskeepers, motor pool supervisors.

What: Small engines (single cylinder, about 4-16 hp) for walk-behind mowers, aerators, dethatchers, overseeders, sod cutters and other smaller, powered landscape equipment.

When: Consistent engine trouble, lowered power output ("tired"), hard starting, excessive fuel consumption, smoky, spark plug "fouling," dead engine.

Why: Improved equipment performance, employee productivity, safety, client satisfaction.

How: Independent small engine repair/sales service; manufacturer sales and service, in-house staff.

REBUILD:

- Rule of thumb cost analysis: If cost of rebuilding less than roughly 50 to 60 percent of the cost of a new engine.
- If customers can be patient for delays or grounds can go unmaintained during time spent rebuilding.
- If you can "limp along" until the end of the season with less-than-efficient equipment until off-season repairs can be made in-house or at a price break outside.
- If exterior parts to be replaced are relatively simple operations: carburetors, throttle shafts, fuel pumps, electric starters are some examples.
- If interior parts to be replaced are easily handled with low labor hours: camshafts, valves, cam and crank shafts, ball and shaft bearings can be examples.
- If low depreciation calculations dictate the unit merits rebuilding.

REPLACE:

- Rule of thumb cost analysis: If cost of rebuilding is greater than 50 to 60 percent of the cost of a new engine.
- If estimated purchase and labor installing costs are within your operating, equipment and maintenance budget.
- If in-house staff has skills to install a new power plant. You may consider keeping a comparable extra engine in stock.
- If condition and depreciation of other parts of the gear (the mowing deck, for example) warrants a new engine.
- If you simply don't feel confident that rebuilding will resolve your problem for a profitable period of time.

Old engines: rebuild or replace?

Be sure to look at the whole situation before deciding whether to rebuild tired engines or buy replacements.

■ An immediate decision must be made when your favorite walk-behind mower "suddenly" blows an engine.

Often, such mishaps are preceded by telltale signs like engine sluggishness, hard starts, high fuel consumption, spark-plug "fouling" or smoky running. But damage is now done and you are compelled to decide: should the engine be rebuilt or replaced?

Either choice has advantages, but both assuredly entail unplanned expenses.

Confusing, too, is whether or when to rebuild or replace an engine that still runs reasonably well, but simply doesn't bore strongly; a noticable "tiredness" which affects work output.

Consider sage advice from Kohler Engine Co.'s service and technical publications manager Paul Scholten: the rebuild-or-replace decision centers around variables which can and should be combined to arrive at the best answer. The sticker price for a replacement engine need not be the only or foremost factor.

"You've got to look at the whole situation," says Scholten. Labor costs for

Paul Scholten: "Look at the whole situation."

Bob Molinatti: "Eliminate downtime."

Norman Beck: "Consider depreciation."

rebuilding or replacing should be taken in context with factors such as overall equipment condition and expected duration of downtime. Other external factors might even include customer or club member attitudes toward delays and possibility of modest repairs to "get through" the season until permanent repairs or replacement can be made.

Bob Molinatti, owner of Small Engine Repair in Colchester, Vt., offers a general rule of thumb when advising his clients.

"If we can rebuild an engine for 50 to 60 percent of the cost of a new one, we've done the guy a favor," says Molinatti. The second part of his equation: 80 to 100 percent of the engine's original performance should be revitalized after a rebuild.

That formula, also dependent on factors such as equipment depreciation and condition, seems correct to Norman Beck, executive director of the National Equipment Servicing Dealers Association, an industry group headquartered in Peoria, Ariz.

Beck says to weigh and balance your options carefully, if you have the luxury of time.

"It just makes good business management sense to not only consider the cost of repairs or replacement, but also the depreciation of the equipment itself." Beck adds that the decision for smaller operations may be a simple one: a new light-use mower can be purchased for as little as $150, easily beating rebuilding or replacement costs in many cases. With bigger operations, though, rebuilding or replacing engines on good, serviceable equipment takes on a different dimension.

From a labor point of view, it is often easier and less expensive to install a whole new engine. Still, many engines can be saved within an hour's time and with inexpensive parts, Beck adds.

This autumn, Molinatti did a bulk mailing to convey a simple message: schedule rebuilds with him in the winter months, when his workload is smaller and engines and equipment can receive non-emergency attention.

Winter is also the time Molinatti can take rebuild jobs on a scheduled basis; a time convenient for him and clients.

"The biggest thing people don't consider is to schedule work for us by appointment during the winter months," says Molinatti. He can usually offer a modest price break in the off-season from the normal $30 hourly labor rate.

Perhaps the biggest cost consideration does not show up on any parts and labor invoice: downtime.

Consider other costs incurred in an emergency situation, Molinatti and others suggest, and see how quickly expenses compound: lost man-hours in transporting to and from his shop, the price of gas for such trips, makeup time for work uncompleted during downtime, and wages being paid while little or no landscape work is being accomplished.

"We try to eliminate downtime and emergency repairs," says Molinatti.

He says costs vary, too, by model and manufacturer as more companies enter the small engine market. Example: installing a new set of rings varies in price from $300 to $500.

The smallest of the small engines, however—such as string trimmers and backpack blowers—rarely, if ever, live a second life.

"We log in all our equipment repairs," explains Peter Levinsky, of Levinsky Landscaping, Colchester, Vt. "I can pull a sheet out and tell you how many times a weed whacker has been down. And if it gets to the point where it looks like it's going to be a problem, open the dumpster, here it comes."

Buying brand new equipment has several advantages.

"I've got a happier employee with a new piece of machinery," says Levinsky. "I may be keeping a closer eye on it because it's new, but he knows it's brand new and better take care of it.

"And it seems like I might get more

Scheduling diagnostic checks

■ Diagnostic tests on small engines will give you a better understanding of exactly how well or poorly a unit is performing and where some difficulties present and future may lie.

Kohler Engines Co. publishes guides for engine rebuilding and repowering. Troubleshooting techniques include inspection for excessive sludge, cylinder wall scoring, piston damage and oil leaks.

Ball and sleeve bearing workings, proper lubrication (including proper levels and viscosity) and condition of the engine's valves are also keys to smooth operation. All can be checked for flaws during overhauling, which can be performed in-house with some advance knowledge and proper measuring tools. Technical information—such as bolt torquing levels, tightening sequences and other precise measurements—are usually available from the manufacturer or dealer/distributor.

Inspections and overhauls also include examining timing, fuel pump and carburetor operations; look-sees that can contribute to improved engine efficiency and power. A faulty fuel pump, generally, should be replaced with a new one.

Carburetor problems can stem from improper setting or, more frequently, varnish and gum buildup. Cleaning solvents can restore carburetor performance when used properly. Carburetor reconditioning kids are readily available from Kohler, Briggs & Stratton, Onan and most major small engine manufacturers. They include the most common items such as gaskets, which need replacement because of routine wear and tear.

bang for my buck by doing it that way rather than getting it repaired at $40 an hour."

Scholten says there is no substitute for scheduled upkeep on smaller motors and gives generally passing grades to equipment owners in the workaday world. "The real professional recognizes the value of a good maintenance program," he says.

Likewise, Molinatti gives passing marks to those maintaining smaller engines: "They do moderately well (but) maintenance never seems to be stressed." He also notes that in one sense, smaller engines require more critical and timely maintenance than larger motors.

Consider, Molinatti asks, what is demanded of a typical commercial walk-behind: constant, daily use (four to five hours at 3600 rpm) under strenuous conditions. This makes routine maintenance mandatory and rebuilding or replacing perhaps inevitable.

Or consider the title of a monograph Scholten once authored: "Small Engines Can Last Forever—Almost."

—Jack Simonds

Save in spring: compost now

Now is the time for all good landscape managers to come to the aid of their country. Composting is a start.

■ October is the perfect month to gather leaves and other landscape debris for starting compost piles and wind-rows.

Yard waste composting is a practical idea for lawn care operators, landscapers and golf course superintendents. But the undertaking should be approached with planning both on paper and on site, according to an Ohio expert.

What can composting do?

1) It eases the strain on overburdened landfills while creating organic materials which can be used on the job.

2) It favorably affects the pocketbook by lowering tipping (disposal) fees and streamlining disposal methods.

3) It delivers rich, valuable humus in one to two years.

Rick Thomas, an Akron, Ohio, LCO who also works with the area's cooperative extension service, offers several suggestions toward setting up compost windrows this month. Keep in mind composting's basic formula: equal parts of organic material, air and moisture.

Thomas recommends:

• Mixing grass trimmings with other materials. A 30 percent grass to 70 percent other "bulking" items mix is ideal. Leaves, shredded prunings and other organic matter best combine with grass for healthy aerobic (air-based) decomposition.

Grass trimmings do not decompose well alone; the plant is 80 to 85 percent water. Grass mats onto itself and when slow anaerobic (little or no air) decomposition occurs, a putrid smell results. A tip: create a stockpile of bulk materials to mix with grass trimmings when needed.

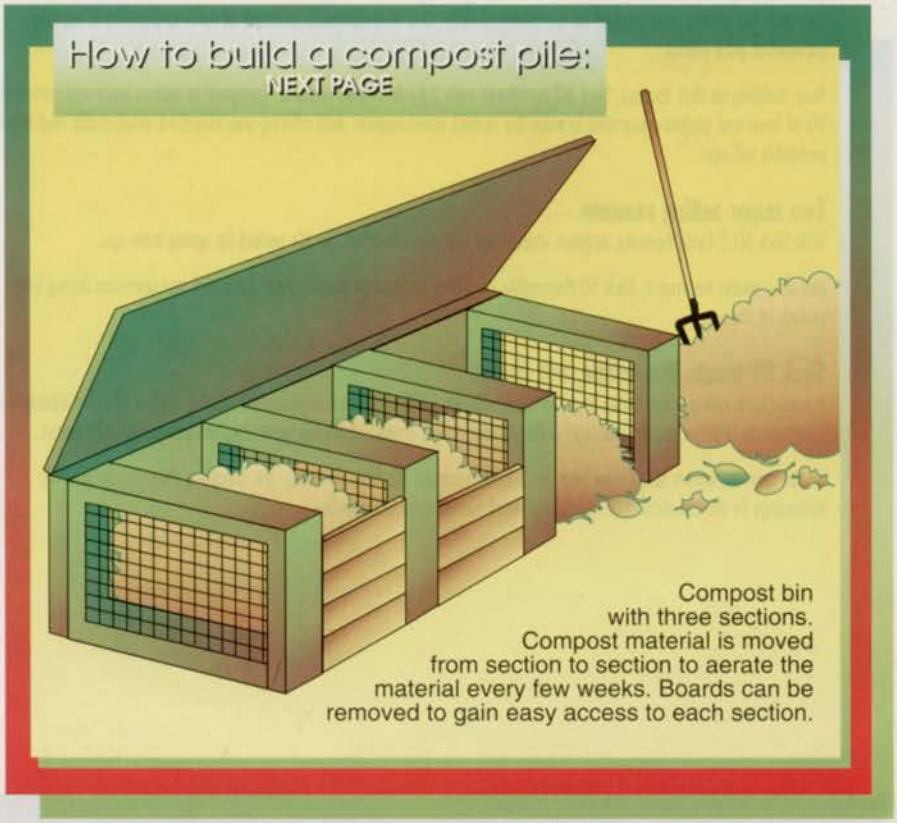
• Checking with local and state environmental authorities beforehand for composting setup rules. Ohio, for instance, has one set of prescribed regulations for commercial yard waste composting sites up to three acres and another for larger tracts. Controls are designed to prevent leaching into the water table and nearby water supplies. Some licensing may be needed in advance.

• Wind-rowing materials in long rows rather than composting in piles. Thomas says when piles exceed six feet, the weight of the materials tends to fall onto itself, depriving the core of needed air for proper decomposition.

A "manageable size," in his view, is a wind-rowed line no taller than six feet or wider than 14 feet. Thomas notes some operators may find it worth investing in compost-turning tractor attachment systems; although the expense is not necessary. Also possible is pooling with other landscapers to share both expenses (such as shredding) and end product.

• Considering switching to grass mulching at all times; a "don't-bag-it" philosophy which is being stressed in areas where he meets local governments. Thomas admits customers don't always understand or like mulching, but the idea can be put across if it is patiently explained.

—Jack Simonds



Compost bin with three sections. Compost material is moved from section to section to aerate the material every few weeks. Boards can be removed to gain easy access to each section.