

IRONS OF CHANGE

TECHNOLOGY, INNOVATION, INCREASED CONDITIONING DEMANDS AND SUPPLY CHAINS ARE SWIFTLY ALTERING THE EQUIPMENT SIDE OF THE INDUSTRY. **TERRY BUCHEN, MG**, KEEPS PACE BY UPDATING HIS MAINTENANCE REPLACEMENT AND LIFE EXPECTANCY GUIDELINES.

How long maintenance equipment lasts before it is replaced depends on many factors, including usage frequency throughout the year, climatic conditions, preventative maintenance programs, employee care when operating equipment, and whether the equipment is stored inside or outside in sunlight and moisture. The accompanying life expectancy chart shows estimated guidelines for equipment replacement in a range of years, knowing that some equipment will last longer than planned and other equipment will need to be replaced sooner than expected. The following are some important items requiring more explanation than what's listed in the chart.

EQUIPMENT MANAGERS AND ASSISTANT MECHANICS/TECHNICIANS

The equipment manager is the most important person for successfully operating a preventative equipment maintenance program. The GCSAA's successful Equipment Management Certificate Program's (EMCP) Level 1 and Level 2 curriculum must first be completed before the Certified Turf Equipment Manager (CTEM) status can be achieved.

Computer Maintenance Management Software (CMMS) from various companies provides equipment maintenance scheduling, assignments, labor tracking, servicing, documents and history, parts ordering and inventory, proactive maintenance notifications, fleet health monitoring, and equipment location tracking. GCSAA Equipment Management Resources are also a great reference tool.

On an 18-hole facility, it's extremely important to have not only the equipment manager but an assistant mechanic/technician on staff. That person is typically responsible for performing routine preventative maintenance servicing, along with grinding, lapping and other tasks. The equipment manager executes repairs, orders parts and keeps records, grinds equipment, trains employees, and guides the assistant mechanic/technician.

It's virtually impossible for the equipment manager to operate at an 18-hole venue without an assistant mechanic/technician because new electric, hybrid, autonomous and robotic technologies, and expanded equipment inventories are too much for one individual to handle. Additional repair parts also should be kept in inventory because of supply-chain issues and concerns. Attending service schools provided by the local distrib-

utor or equipment manufacturer during the off-season is vital continuing education for both individuals.

CAPITAL EQUIPMENT REPLACEMENT PROGRAMS/CAPITAL RESERVE BUDGETING

Superintendents have graduated from a five-year to a 10-year capital equipment replacement program, which is typically updated annually. Capital reserve budgeting is then executed by setting aside funds to help pay for purchased or leased equipment. With the supply-chain issues and concerns still in the "backorder" mode, superintendents must order new replacement equipment or new technology equipment at least 18 to 24 months in advance — and hope it will be delivered when forecasted. Superintendents also like to provide the original and current expected life on their maintenance equipment inventories, updated annually, for additional documentation for the budget process.

Capital equipment replacement budget standards for the golf industry typically include 15 to 20 percent per year of the total equipment inventory replacement value, or 20 to 25 percent of the annual golf maintenance operating budget per year.

Superintendents typically prefer leasing all equipment under a Fair Market Value (FMV) lease arrangement when it is used on a daily, regular high-use basis and then totally replacing the equipment after the three- to six-year term expires. Greens, tees, collars, approach, fairway and rough mowers, riding bunker rakes, sprayers, turf vehicles, and topdressers comprise this group.

A full payout (\$1 buyout lease), where the equipment is owned at the expiration of the lease, is typically not preferred because this high-use equipment has reached its life expectancy and should be replaced instead — except for possibly keeping a few select equipment for other purposes, such as mowers used after verticutting and topdressing, and some as a backup contingency plan.

Lease payments should not be placed on the golf maintenance operating budget, as they are obviously capital expense items placed on an operating budget, but it is commonly done for accounting purposes because leased equipment cannot typically be depreciated. This practice noticeably increases the operating budget, making the numbers deceptive to course officials because of the added expense. Lease payments should be placed on a G&A account or separate account because they are capital expense items, not maintenance operational budget expenses.

Equipment used less frequently with a longer life expectancy, such as tractors, trucks, skid-steer loaders, fairway aerifiers and topdressers, trenchers/backhoes, chippers and dump trailers, are typically purchased. This equipment is typically put on a capital equipment replacement budget that can be depreciated.

New tech and additional equipment acquired in an FMV Lease, a full-payout lease or purchased can depend on its frequency of use and the financial arrangements desired by the course. There should be a minimum of two pieces of the same equipment for each maintained area, as a backup is used during repairs while waiting for repair parts or when equipment is being serviced.

AI-powered drone aerial equipment

monitors and sprayers, autonomous and robotic mowers, GPS-guided sprayers, hybrid- and lithium-powered mowers and turf vehicles; e-walk behind and e-triplex greens mowers, and e-hovercraft mowers are among the emerging tech available to golf courses, with more exciting developments on the horizon.

HOURLY METERS

There are two “hour-meter standards” to determine their “car miles equivalent” traveled so that course officials can better understand the relevance and true meaning of hour-meter readings.

Turf equipment: One hour equals approximately 80 miles on a car; 3,000 to 4,000 hours equals 240,000 to 320,000 miles on a car.

Turf equipment engines: 500 Hours equals 100,000 car miles; 1,000 hours equals 200,000 car miles; 3,000 hours equals 300,000 car miles equivalent.

NOISE ORDINANCES

Noise ordinances, especially those found on housing development-type courses, are becoming stricter and enforced more frequently. Electric- and lithium-powered equipment has made great strides in toning down the decibel level, making for happier homeowners.

EQUIPMENT STORAGE

All maintenance equipment should have enclosed and covered storage (if necessary) to keep damaging sunlight and moisture from shortening the life expectancy of equipment in all three climatic zones.

PHOTO/VIDEO JOURNAL

Individual photos of each piece of equipment and/or a video journal should be compiled annually to help prove to insurance companies, if necessary, that it was owned/leased by the club and in inventory. They should be secured and stored in a safe, fireproof environment. 📷

Terry Buchen, MG, is president of Golf Agronomy International, GCSAA life member and author of the popular Travels with Terry column in Golf Course Industry.

TERRY'S TOP 10 TIPS

1. Equipment's life expectancy depends on the frequency of use, climatic conditions, preventative maintenance programs, employee care when operating the equipment and storage setup.
2. The life expectancy chart for all three U.S. climatic zones provides guidelines when equipment normally should be replaced. The projections for an 18-hole course in a range of years is when it should be replaced before it becomes cost prohibitive to keep repairing it.
3. Equipment inventories have expanded over the years because of golfers demanding improved playing conditioning standards. Capital equipment replacement budgets, including adding new technology equipment and 10-year capital reserve budgeting, updated annually, is now the standard.
4. Leased capital maintenance equipment monthly payments should not be placed on the golf maintenance operating budget, as they are capital expense items. They should be placed on a G&A account or another separate account.
5. Having only one equipment manager to maintain an 18-hole course's equipment inventory is nearly impossible. With the expanded inventories and technological advances in equipment, an assistant mechanic/technician is definitely required.
6. Equipment sitting outside in the elements getting damaged from sunlight and moisture significantly shortens the life expectancy and costs the course more money each year. Enclosed equipment storage and additional covered storage is a must.
7. Noise ordinances are becoming more stringent and enforced, and equipment manufacturers are offering more electrically operated equipment every year to bring the decibel levels noticeably lower.
8. Maintenance equipment typically costs more to maintain beginning between the second and third year after acquisition. Repair operating budgets should reflect the increased costs, as necessary and appropriate.
9. Additional repair parts should be kept in inventory because of the supply-chain issues and concerns about when they will be delivered.
10. Ordering new or replacement equipment and new technology equipment must be accomplished a minimum of 18 to 24 months in advance because of supply-chain issues and concerns — and hopefully it will be delivered when forecasted.

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TERRY BUCHEN'S UPDATED MAINTENANCE EQUIPMENT AND LIFE EXPECTANCY GUIDELINES

GREENS

Equipment	Cool-Season Climate	Transition Zone Climate	Warm-Season Climate
Walk-behind greens mowers	4-6 years	5-6 years	4-5 years
<i>Lithium/hybrid/gas; groomer attachments; front rollers; turf utility vehicles; trailers</i>			
Triplex greens mowers	4-6 years	5-6 years	4-5 years
<i>Lithium/hybrid/gas/diesel; autonomous/robotic; groomer attachments; verticut attachments; speed rollers (3); spikers; spare cutting units</i>			
Dew whippers	3-4 years	2-3 years	1-2 years
Walk-behind aerifiers	10-12 years	8-10 years	6-8 years
Deep-fine aerifiers	8-10 years	7-8 years	5-7 years
Core harvesters	7-8 years	6-7 years	5-6 years
Sweepers/vacuums	8-10 years	7-8 years	5-7 years
Plug pushers	8-10 years	7-8 years	5-7 years
Water-inject aerifiers	8-10 years	7-8 years	5-7 years
Deep verticut with topdressers	10-12 years	8-10 years	7-8 years
Slit/spike seeders	10-12 years	8-10 years	7-8 years
Topdressing machines	6-9 years	6-8 years	5-7 years
Drag brushes/mats	7-8 years	6-7 years	5-6 years
Sprayers	4-6 years	5-6 years	4-5 years
<i>Hooded booms; walk-behind boom; GPS/drone</i>			
Spreaders-rotary/drops	5-7 years	5-6 years	4-5 years
Tournament speed rollers	4-7 years	5-6 years	4-5 years
<i>Electric/gas</i>			
Soil profile blower/vacuum	8-10 years	7-8 years	5-7 years
Oscillating fans	7-8 years	6-7 years	5-7 years
Roller squeegees	7-8 years	6-7 years	5-6 years
Moisture meters	5-7 years	4-6 years	3-5 years

COLLARS

Equipment	Cool-Season Climate	Transition Zone Climate	Warm-Season Climate
Walk-behind TCA mowers	5-7 years	5-6 years	4-5 years
<i>Utility vehicles; trailers</i>			
Triplex TCA mowers	5-7 years	5-6 years	4-5 years
<i>Spare cutting units</i>			

TEES

Equipment	Cool-Season Climate	Transition Zone Climate	Warm-Season Climate
Walk-behind TCA mowers	5-7 years	5-6 years	4-5 years
<i>Utility vehicles; trailers</i>			
Triplex TCA mowers	5-7 years	5-6 years	4-5 years
<i>Spare cutting units</i>			

FAIRWAYS

Equipment	Cool-Season Climate	Transition Zone Climate	Warm-Season Climate
Fairway mowers	5-7 years	5-6 years	4-5 years
<i>Lithium/hybrid/diesel; autonomous/robotic; verticut attachments; groomer attachments; spare cutting units</i>			
Clipping dispersal machine	15-20 years	12-16 years	10-12 years
Large fairway aerifiers	8-10 years	7-8 years	6-7 years
Deep-tine aerifiers	8-10 years	7-8 years	6-7 years
<i>Sweepers/vacuums; plug pulverizers</i>			
Large fairway topdressers	7-8 years	6-7 years	5-6 years
<i>Drag brushes/mats; material handling</i>			
Large fertilizer spreaders	10-12 years	9-11 years	8-10 years
Deep verticut machines	8-10 years	7-8 years	6-7 years
Drill/verticut seeders	8-10 years	7-8 years	6-7 years
Drop seeders	10-12 years	9-11 years	8-10 years
Large sprayers	7-8 years	6-7 years	5-6 years
<i>GPS; hooded booms; foamer attachment</i>			
Fairway pull-type rollers	15-20 years	15-20 years	15-18 years
Fairway self-propelled rollers	9-10 years	8-9 years	7-8 years
Blowers-pull type	7-8 years	6-7 years	5-6 years
Blowers-PTO	10-12 years	9-11 years	8-10 years

APPROACHES

Equipment	Cool-Season Climate	Transition Zone Climate	Warm-Season Climate
Walk-behind TCA mowers	5-7 years	5-6 years	4-5 years
<i>Utility vehicles; trailers</i>			
Triplex TCA mowers	5-7 years	5-6 years	4-5 years
<i>Spare cutting units</i>			
Fairway mowers	5-7 years	5-6 years	4-5 years

INTERMEDIATE ROUGHS/WALK PATHS

Equipment	Cool-Season Climate	Transition Zone Climate	Warm-Season Climate
Utility triplex reel mowers	6-7 years	5-6 years	5-6 years
<i>Spare cutting units</i>			

MAINTAINED ROUGHS

Equipment	Cool-Season Climate	Transition Zone Climate	Warm-Season Climate
Multi-deck rough mowers	6-8 years	6-7 years	5-6 years
<i>Autonomous/robotic</i>			
Utility rough triplex mowers	6-8 years	6-7 years	5-6 years
<i>Reel/rotary</i>			
Zero-turn rotary mowers	6-8 years	6-7 years	5-6 years
Hovercraft rotary mowers	2-3 years	1-3 years	1-2 years
<i>Electric/gas</i>			
String-line trimmers	2-3 years	1-3 years	1-2 years
<i>Gas/electric</i>			

BUNKERS

Equipment	Cool-Season Climate	Transition Zone Climate	Warm-Season Climate
Riding bunker rake 3WD	6-7 years	5-6 years	4-5 years
<i>Gas/electric; spiker attachment; plow; landscape box</i>			
Hand maintenance rakes	2-3 years	1-3 years	1-2 years
Stick edger	2-3 years	1-3 years	1-2 years
Reciprocator edgers	2-3 years	1-3 years	1-2 years
String line trimmers	2-3 years	1-3 years	1-2 years
<i>Gas/electric</i>			
Trash pump/trailer	8-10 years	7-8 years	6-7 years

LARGE EQUIPMENT

Equipment	Cool-Season Climate	Transition Zone Climate	Warm-Season Climate
Tractors with PTO	18-24 years	17-22 years	15-20 years
Tractor loader/backhoe	20-25 Years	18-23 Years	16-20 Years
Skid-steer loader	10-13 years	8-11 years	7-10 years
<i>Forklift; backhoe; auger; trencher; broom</i>			
Mini excavator trackhoe	15-17 years	12-15 years	10-12 years
Dump truck	15-17 years	12-15 years	10-12 years
Pickup truck	12-15 years	11-12 years	10-11 years
<i>Snow plow</i>			
Dump trailers	12-15 years	11-12 years	10-11 years
Highway flatbed trailers	12-15 years	10-12 years	9-11 years
Hydromulcher	8-10 years	7-9 years	6-8 years
Trencher/backhoe	8-10 years	7-9 years	6-8 years
Chipper	10-12 years	9-11 years	8-10 years
Boom tree trimming truck	16-18 years	14-16 years	14-16 years
Superintendent vehicle (leased)	4-5 years	4-5 years	4-5 years
Superintendent vehicle	4-6 years	4-6 years	4-6 years
<i>Buy/vehicle allowance</i>			

SMALL EQUIPMENT

Equipment	Cool-Season Climate	Transition Zone Climate	Warm-Season Climate
Dump utility vehicles	5-7 years	5-6 years	4-5 years
Equipment manager's vehicle	6-8 years	6-7 years	5-6 years
<i>Generator; air compressor; welder</i>			
Irrigation technician's vehicle	5-7 years	5-6 years	4-5 years
Riding utility roller	12-15 years	12-14 years	11-13 years
Sod cutters	12-15 years	12-14 years	11-13 years
Portable generator	8-9 years	7-8 years	6-7 years
Landscape scraper box	15-17 years	14-15 years	12-13 years
Landscape harrow	15-17 years	14-15 years	12-13 years
Chainsaws	3-5 years	3-4 years	2-4 years
Motorized pole saws	5-7 years	5-6 years	3-5 years
Tree climbing equipment	10-12 years	9-10 years	8-10 years
12-volt sprayers	7-8 years	6-7 years	5-6 years
Backpack sprayers	5-7 years	5-6 years	3-5 years
Backpack blowers	5-7 years	5-6 years	4-5 years
Sprinkler head leveler	8-10 years	7-9 years	6-7 years
Handheld blowers	5-7 years	5-6 years	4-5 years
Firewood splitter	7-9 years	6-8 years	5-7 years
Irrigation wire locator	8-10 years	8-9 years	7-8 years
Irrigation fault finder	8-10 years	8-9 years	7-8 years
Irrigation PVC pipe locator	8-10 years	8-9 years	7-8 years

MISCELLANEOUS EQUIPMENT

Equipment	Cool-Season Climate	Transition Zone Climate	Warm-Season Climate
Rowboat	20-25 years	20-25 years	18-25 years
<i>Oars; trolling motor</i>			
Metal detector	7-8 years	6-7 years	5-6 years
Portable GPS device	7-8 years	6-7 years	5-6 years
Large portable water wagon	20-25 years	20-25 years	18-25 years
Push-type rotary mowers	4-6 years	4-5 years	3-4 years
Self-propelled rotary mowers	4-6 years	4-5 years	3-4 years
Smartphones (irrigation)	3-5 years	2-4 years	2-3 years
Tablets (irrigation)	3-5 years	2-4 years	2-3 years
Two-way radios (irrigation)	3-5 years	2-4 years	2-3 years
Reel grinders	7-9 years	6-8 years	6-8 years
Bedknife grinders	7-9 years	6-8 years	6-8 years