1. **Engine oil.** Check with each use, and change oil (and filter, if so equipped) every 25 hours of engine use. The environmental factors and heavy use that commercial engines are subjected to can break down engine oil quickly. Adhering to a strict oil change schedule will help maximize the life of the engine. Always use the recommended oil for your engine.

2. **Air cleaner.** Air cleaners should be checked and serviced (or replaced, depending on type) every 25 hours. Make sure the filter is re-installed properly so that dirt and debris can not bypass the filter. Commercial engines are constantly faced with dirty, dusty conditions so proper air filter maintenance is critical. A dirty, clogged air filter not only lowers the performance of any engine, it also increases the chances of dirt being sucked into the engine, which is one of the quickest ways to make a new engine old.

3. **Cooling fins.** The engines on the majority of equipment are air-cooled, meaning that cool air must pass over the fin of the engine to cool the engine. Unfortunately, the same dirty, dusty conditions that make air filter service so critical can also lower the efficiency of the cooling system. This increases engine heat, which lowers performance and accelerates engine oil breakdown, ultimately leading to compromised engine life. Compressed air is the best way to remove debris from the cooling system. Be sure to wear eye protection anytime compressed air is being used.

4. **Spark plugs.** Inspect and/or replace after 100 hours of use. Spark plugs become less efficient with age, so by replacing them regularly, you help to ensure quick starts, and maximize fuel economy and performance. As always, make sure you use the correct plug per the manufacturer's specs.
5. Engine speed. Check and reset engine top no load speed at least once per season. This will ensure that the engine is operating safely, and at optimum efficiency. Some applications, such as a reel mower, depend on proper engine speed for a clean cut. Adjust or replace governor parts as necessary to ensure that the engine maintains a consistent operating speed that is consistent with manufacturer guidelines.

6. Fuel/fuel system. Verify that the proper fuel has been used in the engine (accidentally using diesel in a gasoline engine, for example). If the fuel used is questionable, drain and flush the entire fuel system and refuel. Inspect the fuel cap, tank, hoses, clamps, filter, and carburetor visually for leaks after each use. Replace the fuel filter annually.

7. Clean the engine/equipment. Clean dirt and debris from the engine and equipment after each use. This helps you to visually inspect the engine and equipment for any damage that occurred in use, and can help in locating leaks, missing safety warnings, or other issues that may be hidden by debris. Clean equipment promotes increased efficiency by lowering engine/equipment-operating temperatures.

8. Starting system. Inspect the manual starter, including the rope, grip and starter operation. Replace parts as necessary if wear is evident. On electric start engines, check the battery (for charge and/or leaks), battery/cable connections, and interlock switches (for proper operation).

9. Valve adjustments. Check annually, or every 300 hours, whichever comes first. Properly adjusted valves are a critical determinant of engine performance, startability, and fuel efficiency.

10. Exhaust system. Visually inspect the muffler body, deflector and spark arrester (if equipped) for damage, proper fit and/or leaks. An improperly functioning exhaust system not only lowers engine performance and fuel economy, it can also be a serious safety issue in some situations.

Always use proper safety equipment, including gloves, ear protection, eye protection, hard hat, long pants and heavy shoes or work boots. Also ensure that all safety guards and mechanisms are in-place on each engine or piece of equipment.

DE-COMPACTOR
The Smarturf De-compactor uses 8-in. solid steel spikes patterned on a hollow steel drum to eliminate compaction on sports fields. Weighing more than 1500 lbs. (2500 filled with water), the unit improves drainage and root growth.
Smarturf/602-697-1149
For information, circle 088 or see www.oners.ims.ca/2908-088

Jump Into The Sea

- Most Salt Tolerant Turfgrass • Darker Green Color Than Bermudagrass
- Tolerates Gray Water, Effluent and Many Medium-to-Poor Quality Water Sources
- Low Fertilization Requirements • Handles Wide Range of Soil pH Levels: 4.0-9.8
- Minimal Pesticide Requirements • High Tolerance to Salt Spray, Water Logging and Periodic Inundations • Good Rooting in Sandy, Clay or Muck-Type Soils
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BUNKER RAKES
The 1200A Bunker and Field Rake delivers power, speed, and great range in the field. Operators will notice a number of comfort and productivity improvements in the 1200A. These include 40 percent less steering effort, an adjustable high-back seat, standard power lift of the rear rake, and an improved braking system.
John Deere/800-537-8233
For Information, circle 075 or see www.oners.ims.ca/2908-085

INFIELD MACHINE
The Infield Pro is available with a 16 or 18-hp Vanguard engine and all the tools required to keep your skinned areas in shape. Patented three-wheel series/parallel traction drive gives you the control, and machine has 7 1/2-in. ground clearance. Attachments include the tooth rake, spring rake, weeder/cultivator, spring rake, 40-in. dozer blade, 58-in. spiker, debris blower, finish grader, and drag mat.
Toro Company/800-348-2424
For information, circle 086 or see www.oners.ims.ca/2908-086

Here's a Nice New Dark Green That'll Show Up Nicely for the Games You Play

Ideal for Soccer, Football, Baseball, Softball and Athletic Fields of All Stripes

"IN-FIELDER"
Groomer machine features heavy-duty bolt on serrated grader blade; floating pulverizer reel with lubed pivots; and leveling bar floating on lubed pivots. Roller has six sections to reduce skidding and bunching while turning.
Reist Industries/919-649-1501
For information, circle 090 or see www.oners.ims.ca/2908-090

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For Detailed Information and a List of Licensed Growers Visit:

www.tifsport.com

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TURF ROLLER

Tru-Turf Equipment has available a 1400-lb. sports turf roller. Units employ patented 3 off-set roller principle and are fitted with three different spiking depths. Available as a 3-point linkage or tow behind model with a Vibrator attachment option.

Tru-Turf Equipment/011-61-'-S594 7199
For information, circle 089 or see www.oners.ims.ca!2908-089

FIELD DRAGS

Beacon premium X-drags combine plastic lumber with hardened steel nails. The 3 x 2-ft. nail drag is ideal for scarifying baselines, cutouts and home plate areas. Also for daily nail dragging of infield skin topdressing layer. It can be pulled either width direction by changing the tow rope connection point. Fits between 3-ft. line and foul line down 1st baseline.

Beacon Ballfields/860-747-5985
For information, circle 084 or see www.oners.ims.ca/2908-084

SMITHCO AFC

The Smithco Super Star AFC features a highly responsive hydraulic-drive system and hydraulic controls for all implements. The 16 and 18-hp gasoline engine is powerful, air-cooled and quiet. New scarifier has exact depth control, and “step-through” chassis, tilt wheel and mid-back seat for operator comfort.

Smithco/610-688-4009
For information, circle 093 or see www.oners.ims.ca!2908-093
INFIELD GROOMERS
The Kromer AFM grooming system’s multi-function unit can be equipped to take care of every infield need: spring-tined harrow, leveling blade, and finishing broom; ridge remover broom to eliminate the lip; spray boom for dust control; and dry line and paint liners.
Kromer Company/800-373-0337
For information, circle 080 or see www.oners.ims.ca/2908-080

GROUND PLANE
WINDS mini grounds plane is pull-type machine that can level, grade, and groom all in one operation. It features a mechanical positioner, leveling blades, ripper with positioner, and a finishing broom. Three sizes available, your choice of hydraulic or electric lift.
WINDS/399-405-7655
For information, circle 091 or see www.oners.ims.ca/2908-091

MID-SIZE WALK-BEHIND
The Yazoo/Kees Kutter is a mid-size walk-behind features 7-gauge side skirts and a “rolled” front edge. Transmission is Peerless 5-speed 700 Series with speeds up to 6 mph and assisted reverse and 9-spline output shaft. Engine options are Kawasaki or Kohler, in 32, 36, and 48-in. decks.
Yazoo/Kees/877-368-8873
For information, circle 096 or see www.oners.ims.ca/2908-096

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Serious players at every level need great fields to perform to their fullest—and they’re counting on you to make it happen. Through wet springs and dry summers, Turf Face Athletics will help you dramatically improve your playing surface—guaranteed. You’ll get a broad range of infield and turf conditioners to prevent rainouts and maximize safety on any athletic field. And you’ll get a lot of thanks from your players. For over 40 years, on more fields across America than any other brand, nobody does it better than Turface.
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BOB-CAT CLASSIC
The Bob-Cat Classic is an updated gear-drive walk-behind mower available with a 15-hp Briggs & Stratton ELS or a 15-hp Kohler Command Pro engine, and either a 36 or 48 in. side discharge, fixed-mount mowing deck. Features include a unitized engine and cutting deck and electric clutch with single deck drive belts.

Jacobsen/888-922-8873
For information, circle 077 or see www.oners.ims.ca/2908-290

POWER RAKE
BlueBird's PR22 power rake has a modular platform that can be configured to a lawn corner, seeder, or power rake with rear catcher bag to collect thatch. Each unit offers choice of a flail blade for removing matted thatch, Delta slicing blade for thinning, or spring tine reels for fine turf.
BlueBird/800-808-2473
For information, circle 097 or see www.oners.ims.ca/2908-097

TURF VACUUM
The TV60H PTO-powered hydraulic drive turf vacuum is designed specifically for sports field applications and golf course renovation. Features include a 7-cu. yd. hopper, 25-in. diameter blower with replaceable poly liner, and a hydraulic hopper dump and latch system. All controls from operator's seat.
Goossen/800-835-1042
For information, circle 094 or see www.oners.ims.ca/2908-094

SPORTSTURF • http://www.greenmediaonline.com
**“BALL FIELD FINISHER”**

Broyhill’s Ball Field Finisher ensures pattern definition for all types of soils with its 12 x 2-in. diamond grooves. The standard flip-up scarifier and 45-degree back slope level bar allows for easy grading, surface break-up, or landscaping. Optional Finishing Brush shown.

Broyhill/800-228-1003 x34
For information, circle 081 or see www.oners.ims.ca/2908-081

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**KUBOTA UV**

Kubota introduces the RTV900, available in four configurations with a wide variety of accessories. Combining Kubota diesel engineering technology and a perfectly matched Kubota transmission, this utility vehicle offers power, strength and stability, with all the operator and passenger comforts you could ask for.

Kubota Tractor Corp/888-468-2682
For information, circle 092 or see www.oners.ims.ca/2908-092

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**BEDSHAPER**

The Little Wonder BedShaper is available as a front-mount attachment for both Grasshopper and Walker mowers to make short work of even the largest edging, bed shaping, and trenching projects. BedShaper is ideal for the construction of new beds.

Little Wonder/215-367-5110 x8423
For information, circle 098 or see www.oners.ims.ca/2908-098

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**Princess 77 Helps New Mexico State Develop a Strong Field for Their Team**

Dr. Arden Baltensperger (left) and Dr. Bernd Leinauer, Turfgrass Specialists at New Mexico State stand on the football field 50 days after the grounds crew renovated it with Princess 77 hybrid bermudagrass from seed.

Kubota UV: Why Plant Princess 77?

- Turf quality equal to the best vegetative varieties in the industry
- Requires 21% less water than Tifway (419)*
- Provides an easy, cost effective tool for renovation projects

Following their first undefeated season at home, the New Mexico State University Aggies were looking to start the 2003 football season with their second consecutive home opening win. However, the players weren’t the only people preparing for the upcoming season. The responsibility of having the field ready for play by the first snap of the ball fell on the shoulders of Bud Jones and the New Mexico State Grounds Crew.

Removal of the existing ryegrass revealed an 85 - 90% loss of Tifway (419) on the field.

Removal of the existing ryegrass revealed an 85 - 90% loss of Tifway (419) on the field. Renovation of the field using Princess 77 hybrid bermudagrass from seed solved the problem. 50 days later, the field was pronounced to be "at full density and in excellent condition." According the the grounds crew, Princess 77 held up "remarkably well" to the traffic of the first game.

Available in seed and sod.

Pennington
www.penningtonseed.com

Circle 144 on card or www.oners.ims.ca/2908-144

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http://www.sportsturfmanager.com • STMA
UTILITY WORK MACHINE
Bobcat Company has introduced its 5600 Toolcat Utility Work Machine equipped with a 44-hp Kubota diesel engine and combined all-wheel steer and 4-wheel drive in one machine. This combination gives it the ability to go through tough ground conditions.
Bobcat Company/791-241-8700
For information, circle 081 or see www.oners.ims.ca/2908-190

BE A CROWD PLEASER!

When it comes to pleasing fans, nothing beats a great game played on real turf maintained to perfection. Anderson’s Professional Turf™ (APT) products help you get the cheers you deserve when the teams hit the field.

Our line up of all-star products — over fifty different formulas — has been developed to offer you maximum flexibility in topping turf care challenges and to assure your ability to attain optimum results. From the infield out and goal to goal, APT products help you keep your turf healthy and hearty under the most demanding of game conditions. And if insects or weeds attempt to get in on the action, we can help you give them the boot with our undefeated special teams of control products.

For nearly 40 years, The Andersons has been refining the art and science of producing turf-specific fertilizers, pest control products and fertilizer/pest control combination products. And we’ve never been more fired up about serving your needs. We want you to see those Turf Heads in the stands get up to give you a standing "O"!

Circle 147 on card or see www.oners.ims.ca/2908-147

INFIELD SPECIALTY MACHINE
Fieldmaster Infield Groomer is a 3-point hitch or drag machine that comes in 4 or 6-ft. widths featuring a scarifier, leveling bars, roller, weight and utility tray, and brush. Used in fifty states, Boys College World Series, Girls College World Series, National Baseball Congress, and the 1996 Olympics.
Fieldmaster/800-728-3531
For information, circle 082 or see www.oners.ims.ca/2908-082

NEW ZT MOWER
The EverRide Warrior zero turn radius mower from Auburn Consolidated Industries, the original equipment manufacturer for Kubota, Honda, John Deere, Case New Holland and others. Features include 7-gauge tunnel deck with 149 sq. in. of discharge area; frame laser-cut from Grade 50 steel; and hydrostat system with top-mounted cooling fans.
Auburn Consolidated Industries 402-274-8600
For information, circle 082 or see www.oners.ims.ca/2908-191

TORO SPRAYER
Toro’s Multi Pro 5600 sprayers deliver accurate spray coverage for better control of turf disease, pests, and your budget. The spray system has a dual diaphragm pump that can be run dry without damage to the seals or pump.
The Toro Co./800-803-8676
For information, circle 099 or see www.oners.ims.ca/2908-192

Circle 147 on card or see www.oners.ims.ca/2908-147

http://www.greenmediaonline.com
Turf managers are required to make crucial decisions. Unfortunately, the more information and the more choices we have, the more difficult decision-making is. When it comes to decision-making, common sense and experience are vital tools; however, they alone are not enough.

Before you make another decision, fine-tune your decision-making process with the following steps:

1. Study the problem and define your objective

We often believe that we have a good idea of the problem at hand (the decision to make), but understanding the problem is not the same as understanding the objective. As you review the problem and decide your course of action, you need to determine what your ultimate goal is. By looking at the big picture, you can devise an unambiguous objective and make your decision easier.

In order to uncover your objective, ask yourself the following questions:

- What is the problem?
- Is this a problem?
- Why is a solution required?
- Who is affected?
- How does it manifest?
- When did it first manifest?
- What are the consequences?
- Is it a transient or recurring problem?
- Under what conditions does it occur?
- Are there obvious causes?
- Is a solution worth the cost/effort?

2. Identify all relevant factors that impact your problem

The criteria relating to your decision are all the circumstances that could be contributing to the problem. As you consider your criteria, pay attention to two main issues. The first is to select the most appropriate criteria. This is vital to making the best decision; too often decision-makers take a light-hearted view of this step and pay a very dear price later on. Too many or too few factors will compromise your decision.

Contrary to popular belief, all identified factors do not have the same significance or importance. Thus, the second issue is to determine how important each criterion is (assign weights) compared to the others. Since your final decision will depend heavily on the relative value you place on your factors, the weights you assign to each should truly represent your desires. Of course you can do this using common sense and experience, but that defeats the purpose. I recommend the "pairwise" comparison technique, which consists of comparing the criteria against each other, in pairs. This process will also help you identify prerequisites, obligatory criteria and desirable criteria.

3. Creatively identify all available options or solutions

After identifying criteria, list all your available options, from the ones that seem the most logical to those that seem ridiculous. Remember, you’re not deciding at this point; you’re simply listing your possibilities, so write down everything you can think of. Whatever you do, do not jump to conclusions and think, “My options are obvious.” Don’t limit your options. List and analyze everything.

4. Gather information pertaining to your options and include any new factors you may have discovered

Begin by looking at each of your proposed solutions and develop the pros and cons as they apply to each. Be descriptive in each of your pro/con judgments.

Depending on the pros and cons you list, you may have to gather additional information. If so, question the information being provided to you. Questions to ask include:

- Is the source of the information credible?
- Is the source/person reliable?
- Does the provider have a conflict of interest?
- Will the information be valid for the period under consideration?
* Is the problem serious enough to merit further verification of information?
* Is the information relevant to the objective under consideration?
* Beware of eyewitness accounts or “I heard this from a reliable source.” Seek definitive proof wherever possible. Often during the information-gathering phase, you will identify new criteria that you need to consider. Add these to your original list. Finally, do not cut corners as you evaluate your options, especially if a bad decision is likely to have serious consequences.

5. Rank your options and make your decision

With your solutions spelled out on paper and the pros and cons of each listed, you can analyze your options and identify the best route to take. Use the pairwise technique, to rank your options: consider one criterion at a time, and then compare each candidate against the others, in pairs, and assign points. Once you have exhausted all criteria and candidates, multiply the points assigned to each candidate with the corresponding criteria weights to determine its rank. Once you make your final decision, based on the information you have uncovered, do not second-guess it. It is your decision and you need to develop faith in it and be in harmony with it.

As you execute your decision, keep in mind the timing of your decision. For example, if you decide to approach your supervisor for a favor, you would intuitively wait for a moment when he/she is not under pressure and is in a good mood. Yet, when it comes to implementing a well-thought-out strategy, many people completely forget how critical timing is. They become emotionally attached to the decision and try to execute it immediately.

It is also important to be aware that what is urgent might not necessarily be what is important. Urgency is time related; it requires immediate action. Importance is driven by values. If ignored, important items could turn into urgent items.

Just because today's world is complicated doesn’t mean that decision-making must be complicated too. Take a systematic approach to all your daily decisions to ease the stress and frustration decision-making brings on. The optimum decision depends on how you assign weights to the criteria, and how you assign points to the candidates.

By following the process discussed above, you'll make more reliable and consistent decisions that positively affect your company's growth and profitability.

Dr. Errol Wirasinghe is the author of “The Art of Making Decisions—Expanding Common Sense & Experience.” For more information go to www.XpertUS.com.

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— Richard Conboy, Inventor

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