

# TOP 10 COMMERCIAL ENGINE SERVICE POINTS

BY MARK NELSON

# 1.

to a strict oil change schedule will help maximize the life of the engine. Always use the recommended oil for your engine.

**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

**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).

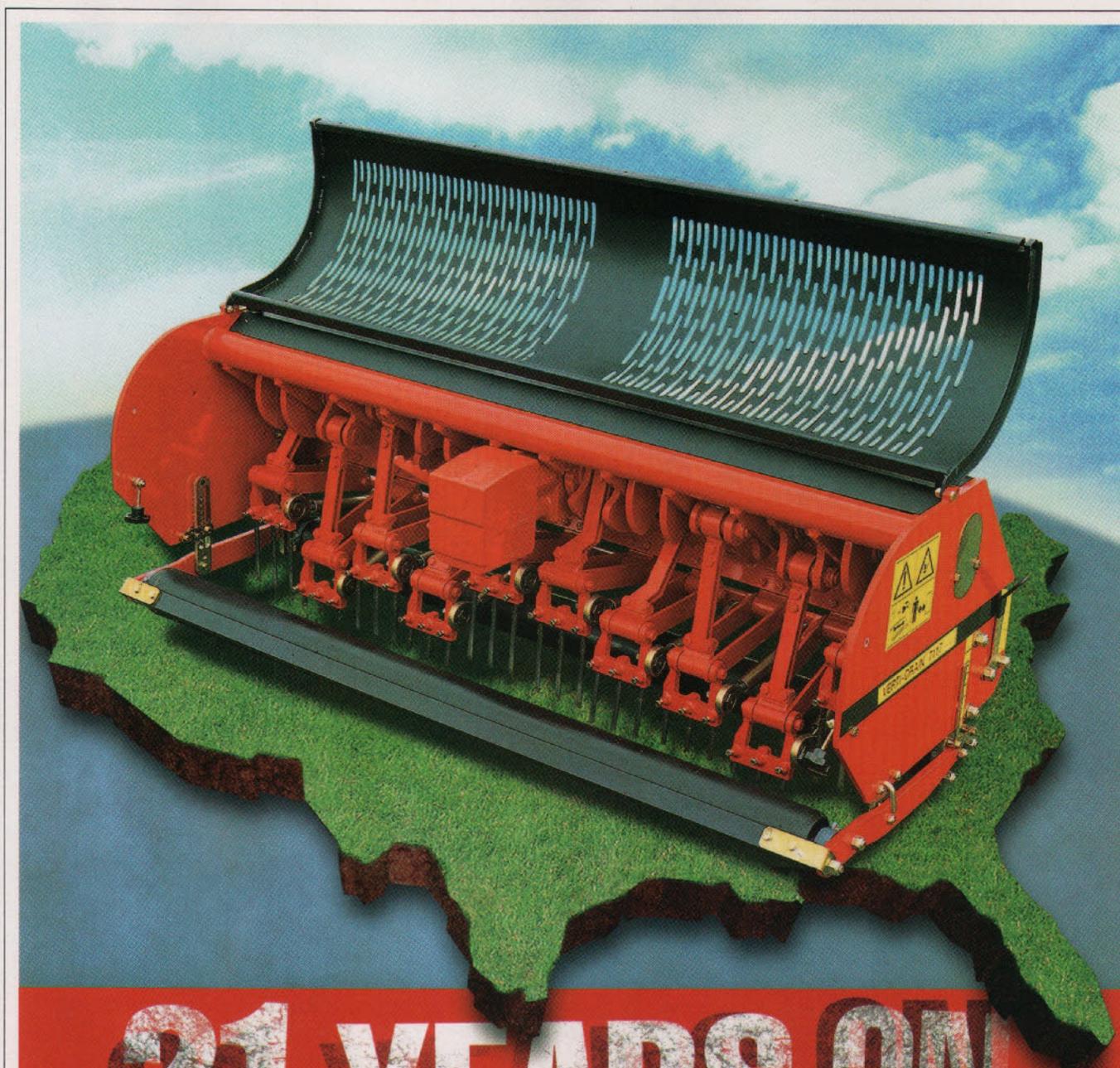
**9. Valve adjustments.** Check annually, or every 300 hours, whichever comes first. Properly adjusted valves are a critical determinant of engine performance, startability, and fuel efficiency.

**10. Exhaust system.** Visually inspect the muffler body, deflector and spark arrestor (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. **ST**

*Mark Nelson is a Technical Service Representative for Briggs & Stratton Commercial Power, [www.commercialpower.com](http://www.commercialpower.com).*



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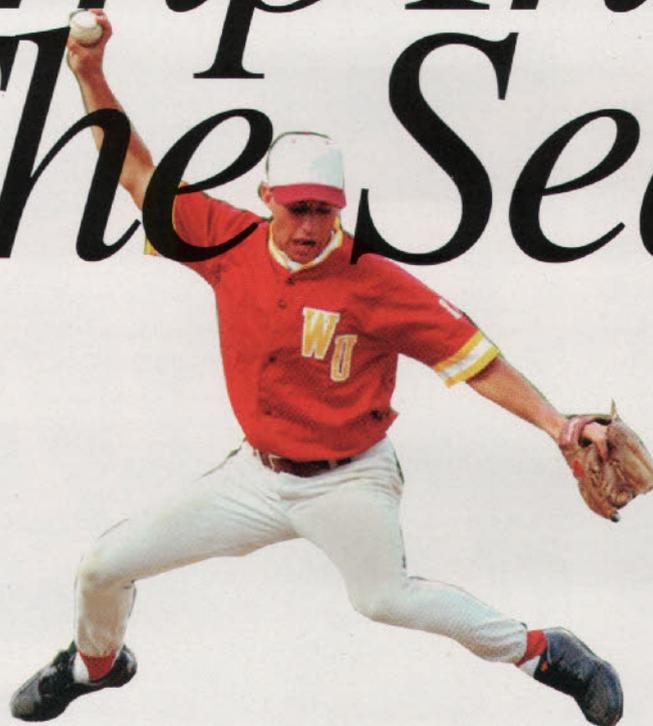
Smarturf/602-697-1149  
For information, circle 088 or see [www.oners.ims.ca/2908-088](http://www.oners.ims.ca/2908-088)

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Beacon Ballfields	800-747-5985
Broyhill	800-228-1003, x34
Earth & Turf	888-693-2638
Fieldmaster	913-492-7303
GreenOne Industries	866-567-6872
GreensGroomer	888-298-8852
Jacobsen	888-922-8873
John Deere	800-537-8233
Kromer Company	952-472-4167
Midwest Rake	800-815-7253
Partac/Beam Clay	800-247-2326
Pioneer Manufacturing	800-877-1500
Reist Industries	877-467-3478
Sekely Industries	330-337-3439
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John Deere/800-537-8233  
For information, circle 085 or  
see [www.oners.ims.ca/2908-085](http://www.oners.ims.ca/2908-085)



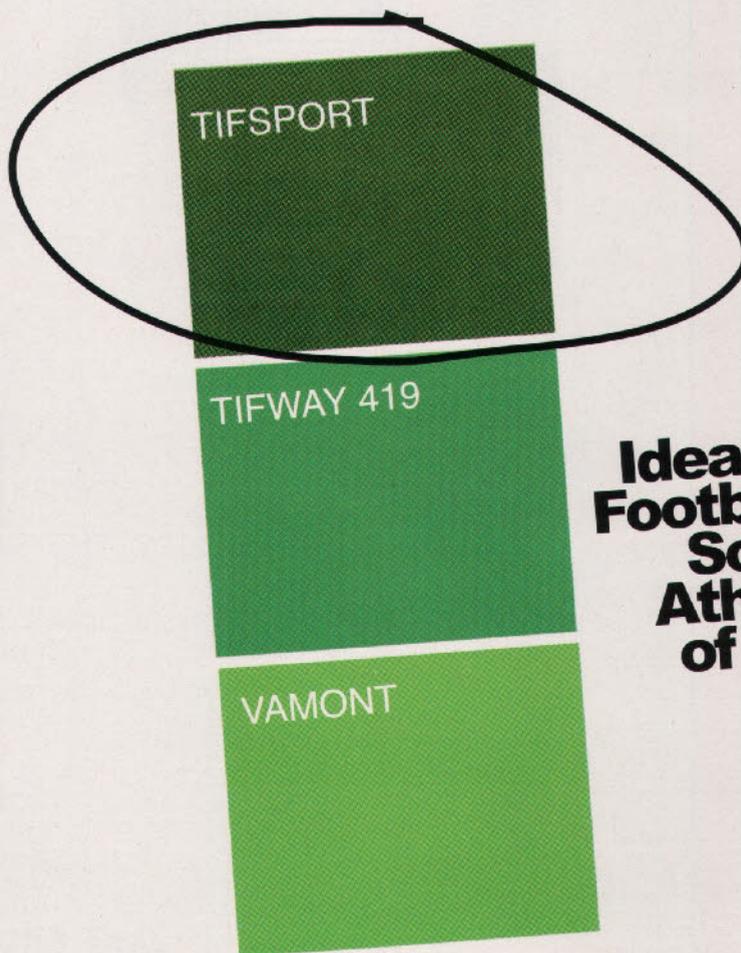
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Toro Company/800-348-2424  
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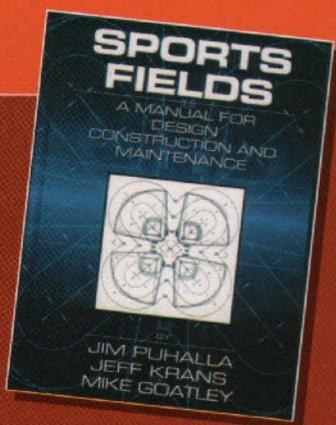
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Beacon Ballfields/800-747-5985  
For information, circle 084 or see [www.oners.ims.ca/2908-084](http://www.oners.ims.ca/2908-084)

**SMITHCO AFC**

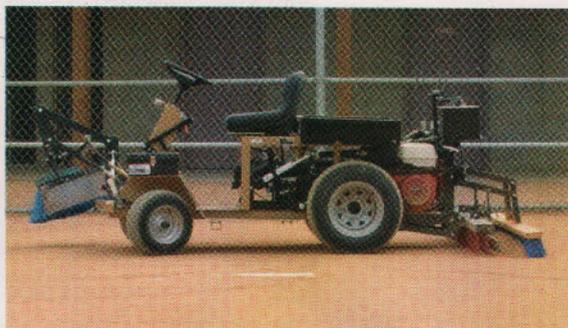
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Jacobsen/888-922-8873  
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### INFIELD GROOMERS

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Kromer Company/800-373-0337  
For information, circle 080 or  
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### GROUNDS PLANE

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Yazoo/Kees/877-368-8873  
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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/2908-200](http://www.oners.ims.ca/2908-200)



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Goossen at Harper Industries  
800-835-1042  
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BlueBird/800-808-2473  
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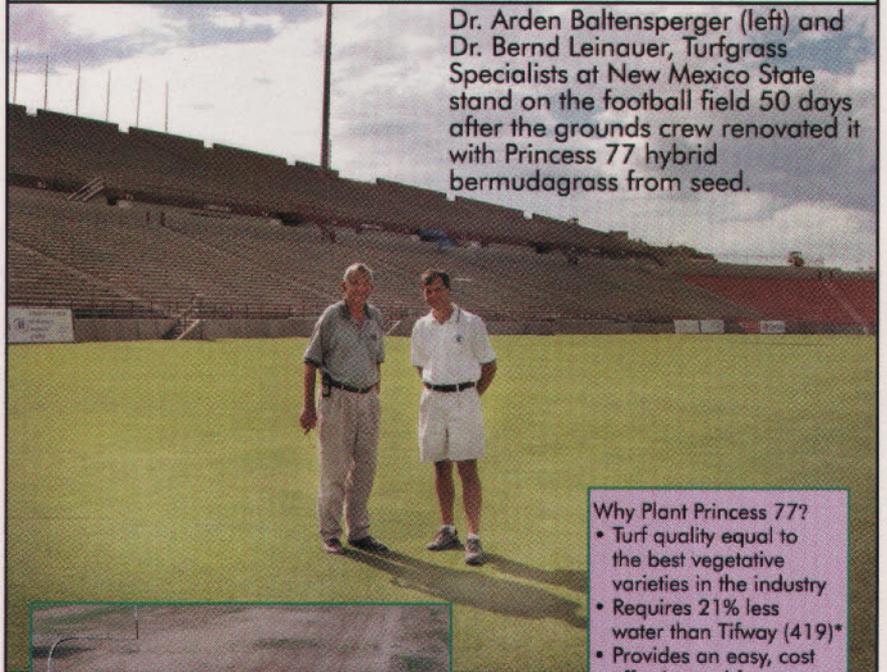
### BEDSHAPER

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.

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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.

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

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\*Response of Bermudagrasses and Zoysiagrasses to Applied Water Using a Linear Gradient Irrigation Design, Sean Reynolds, 2000, Master's Thesis

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### TORO SPRAYER

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The Toro Co./800-803-8676  
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BY ERROL WIRASINGHE, PH.D.

# 5 STEPS TO MAKING BETTER DECISIONS

**T**urf 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?

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**Mound Clay Fortifier**



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\* 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.

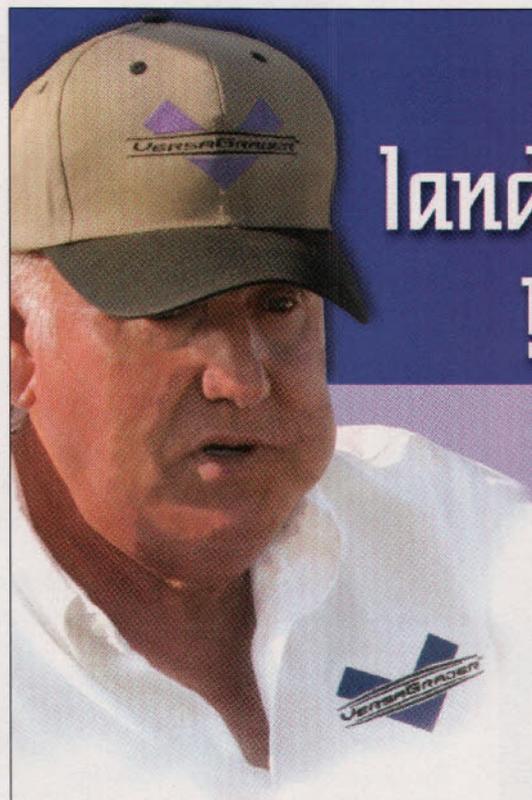
Just because today's world is complicated doesn't mean that decision-making must be complicated too. Take a systematic approach to all your daily decisions to ease the stress and frustration decision-making brings on. The optimum decision depends on how you assign weights to the criteria, and how you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

ST

Dr. Errol Wirasinghe is the author of "The Art of Making Decisions—Expanding Common Sense & Experience." For more information go to [www.XpertUS.com](http://www.XpertUS.com).



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