The shop work areas are kept neat and clean. Access is limited to the mechanics. Photo by Tom Trammel.

annually and biodegradable fluid is used.

Innovations

Instead of throwing out a 250 gallon, mini-bulk fertilization tank after it was emptied out, Bruce turned it into a gravity-feed water wagon. This wagon is used wet our native cart paths, keeping the dust level down. It is also used for watering our newly planted trees and foliage and any hot spots throughout the golf course.

In the winter months, the shop is open for a monthly tour. The head mechanic gives a 45-minute behind-the-scenes tour; grinding of reels, backlapping, mower-height adjustment and the differences among slicing, aerifying, verticutting, grooming and more.

Equipment Inventory

2 fairway units, 2 rough units, 2 slope mowers, 8 walk greens mowers (new Toro Flex 21), 6 walk tee mowers, 12 utility carts, Terra Topper topdresser for light applications, Meter-Matic for heavier applications.

RED STICK GC

It Starts With Skills and Ends With Professionalism

By Corby Coggins

What is the role of a golf course equipment manager? Depending on where this question is
asked, I'm sure you're bound to get different answers.
As we all know, there are many different types of clubs out there with different styles of management.
While the Equipment manager's primary reason for being hired is to manage and maintain a rather expensive fleet of equipment, a low course maintenance budget may require him to do other jobs besides his traditional one.
I've seen and even experienced for myself the responsibility of mowing greens, course set up, mowing fairways etc., then coming in and doing the maintenance on the equipment. Sometimes the equipment manager has the assistant superintendent's responsibilities of getting the whole crew started in the morning, and then making sure that their quality of work is acceptable. Job requirements all depend on where you're employed.
I've been in the golf course business now for nine years. I completed the turf equipment management program at Lake City Community College, and have had the chance to work at low- and high-end golf clubs. From that experience I've developed my perception of what the role of the equipment manager should be. There are many quality equipment managers who already operate their shops in a very smooth and efficient manner. The sole purpose for writing this article is to share some insights with current and possible future equipment managers to provide a solid foundation for a successful career.

Personal Skills
Before we discuss the technical skills and tasks of the equipment manager, there are other things that are just as important. A positive attitude is a must to be successful in this business. Think about it. If I got mad every time someone brought in a broken piece of equipment to the shop, my tenure in the golf course industry would be short lived.
For those who get mad and fly off the handle easily, I'll say it again: You have to keep a positive attitude. Fixing broken things is your job. That's what you were hired to do.
Besides, the more equipment you get to work on simply means more experience and more knowledge you gain.
After you get the positive attitude perfected, it's time to work on patience. I don't know about your club, but it seems everywhere I've been, there is always one maniac operator who consistently breaks things. That maniac will certainly bend fenders and sometimes our nerves.
Does that mean you can curse at him or beat him up each time he immobilizes another piece of equipment? It may cross your mind, but you have to rely on your positive attitude and exercise patience.
It will take patience in many situations, like focusing on rebuilding that tiny carburetor, while getting interrupted by three radio calls on that maniac operator stuck again on No. 4. Time for making repairs may be taken away for training a new operator on a piece of equipment. If you can cut your tool-throwing down to once a week, maintain a good attitude, and exercise lots of patience, you'll gain a lot of respect from the Superintendent and the crew.

Management Skills
Newly appointed equipment managers soon find out that the needed skills can be quite numerous. I think they are all important, but there are a few that I feel are good building blocks for quality equipment management.
I'll start with initiative, or "self-starting skills." Without initiative you're going to sit around every day waiting for a piece of equipment to break, or rely on the superintendent to tell you everything you need to do.
Wrong! One who lacks initiative will soon be waiting for things to break at home because their employment will be short lived. Equipment managers are hired to make educated decisions on what and when something is to be done to the club's equipment fleet. Besides unexpected equipment failures, a well-prepared equipment manager should know what they're going to do every day.
Good communication skills are essential. Communications may come easily to some and with greater difficulty to others depending on where they are. Maintenance crews are becoming more diverse every day, and being able to communicate with the operators is essential. You may want to consider taking a basic foreign language course either on tape or at a local school. Regardless of how you choose to strengthen your communication skills, the main goal is to find a way to communicate with the course management and the crew members.
The main objective is to always know what's going on. There's not a worse feeling in this line of work than to spend all day grinding reels only.
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to find out the greens are being top-dressed the next day. Whether it's a monthly planner, Post-it notes, a foreign language class, or just a good, old-fashioned conversation between people; good communication skills are a necessity.

Let's move on to computer skills. I know not every club has purchased a computer for the shop, but for those who have, I'm sure management envisioned neat, organized documents being printed out of that $1,700 computer package they just purchased and not a higher pinball score at lunch time every day.

Having strong computer skills will create endless possibilities like being able to design different forms, record expenses and inventory to help the shop operate in a more efficient manner, or having online access to most of the major equipment suppliers in the industry. For those fortunate enough to have a computer, learn how to use it and make it part of your everyday role.

Next are organizational skills. Without these skills, an equipment manager would simply run himself ragged. For example, someone brings in a piece of equipment that has a broken part that you don't have in stock. Let's also say that this part requires an extensive amount of time to be removed.

Do you drop what you're doing to take it apart immediately and get consumed in it for the majority of the day? The smart thing to do would be to finish the daily schedule so tomorrow's equipment will be ready to roll. If time permits, you can start breaking down the broken machine. There are always times when you have to prioritize what and when jobs need to be done.

If you are blessed with an assistant or assistants, you may have several projects going on at once. If any job or project lacks good organization, it will likely be completed improperly or not at all.

**Technical Skills**

The last set of skills is definitely the most important. Do technical skills ring a bell? I bet you were wondering if I was ever going to mention these. Technical skills are definitely a broad category but I'll touch on a few that I feel are essential in the equipment manager's role.

Understand electronics and electrical systems. You don't have to know how to solder microscopic parts to a circuit board but it is helpful to be able to read an electrical schematic so you can troubleshoot that faulty part.

Be mechanically inclined. It's our job to know how gas, diesel, two-stroke and four-stroke engines operate and to be able to troubleshoot them if they fail. I don't know about other technicians, but I wasn't taught everything there is to know about all the equipment I'm responsible for just by enrolling in a small-engine class. Sometimes one has to learn by doing and that is where being mechanically inclined helps out.

Know hydraulic systems. It's very important to learn how the hydraulic systems work in the different pieces of equipment. Last but not least, reel grinding and reel set up will probably be the most reflective technical skill that you will encounter. What I mean is that whether you work for a private or public course, all the eyes of the players usually see quality of cut. If the player consistently plays on turf with streaks and stragglers, they will sometimes start to presume that the equipment manager doesn't know what they're doing.

We can also look at this situation from a different point of view. A set of reels could have a perfect cut, but the mower they're attached to could be mechanically unfit. That is why it is equally important to be strong in all the skills that I have mentioned in this section and not just one or two.

There's no way around the technical skills involved in performing the role of an equipment manager. If one chooses to strengthen or implement the other skills I've mentioned into their daily role, others will start to develop a more professional image of them.

**Repair and Maintenance Budget**

When you become an equipment manager, you often inherit the responsibility of spending a portion of the golf course's annual maintenance budget. This is usually the repair and maintenance budget or R&M budget line item. The R&M budget is for monthly replacement parts and shop supplies for the club's fiscal year. It is the responsibility of the equip-
ment manager to spend this money in the club's best interest by buying only necessary items and not the $150 case of brake cleaner from that cute blonde in the mini skirt.

It is important to keep a monthly log with a running total of the R&M purchases so you can keep track of total expenses for the year. I would suggest a log that includes the following: date of purchase, invoice number from sales receipt or packing list, vendor name, what was purchased, and the amount spent. Not only will this log help you stay on budget, it's good reference material for any questions that may arise in the event that you do go over budget.

Parts, Tools, and Shop Supplies

When it comes to purchasing important and necessary items for the shop, the equipment manager will be faced with many decisions. Questions like, What parts do I need to stock? Who is the best vendor to buy from? What brand of tools should I purchase? or perhaps What kind of supplies do I need?

All of these are legitimate questions and should be considered carefully. Although technicians' opinions will vary on each of the previous questions, here's a list of things to consider before making a final decision.

I'll start with "What kind of parts should be stocked?" While it's impossible to stock every part for every piece of equipment in your fleet, you should stock the high-wear items such as belts, rotary blades, bearings, bedknives, filters (air, oil, & fuel) for most of the equipment, spark plugs, stick edger blades, string trimmer line and anything else your maintenance crew seems to use or "break" a lot of. The key is to keep records of what parts seem to wear out most often and stock two or more of them to prevent equipment down time.

"Where should you buy your parts?" I would suggest buying them from vendors who are knowledgeable about their parts inventory and will stand behind their products after the sale. When purchasing parts, don't buy the cheapest, buy quality. The last thing I want to do is repetitively replace junkie "will-fit" parts. I would also recommend supporting your local vendors as much as possible. By supporting local vendors, you not only help out the little man, but they will usually go the extra mile when you desperately need a critical part.

"What brand of tools should an equipment manager stock?" When purchasing tools, there are a few things that need to be considered, like: Who's going to be using them? How often are they going to be used? or How much money is in the tool budget?

The answers to these questions are very simple. The tools that are used the most should fit comfortably in the primary user's hands and be made of the best quality materials that a club or the technician can afford. However, you may want to re-think the previous statement when buying tools for the crewmembers or irrigation technician. When purchasing tools for them, I usually try to buy the cheapest and safest tools possible.

The reason for this is that it makes absolutely no sense to purchase hundreds of dollars worth of tools only to have them buried in a hole or dumped out of a cart bed at the end of the day. I tell everybody that the company tool box is full of David Copperfield tools, meaning that every other day a tool seems to make itself disappear. Unlike Mr. Copperfield, the missing tools prove that their absence is no illusion; they're simply never seen again.

Now that we know tools can disappear on their own, let's move on to supplies that need to be kept on hand at the shop. While the supply list could go on and on, here are a few things that are important to have readily available.

Every shop should have as many of the following assortments as possible: o-rings, nuts and bolts (metric, standard, fine and coarse thread, minimum of grade five), cotter pins, roll pins, clevis pins, electrical wire and connectors, electrical fuses, square key stock, woodruff keys, battery terminal ends, penetrating oils, chain and cable lube, brake and carburetor cleaner, implement pull pins, tapes (Teflon, electrical, duct), wood screws, machine screws, set screws, and if possible, pop rivets. These should all be of the best quality afforded by the budget.

There may be other supplies that will be acquired as time goes on, but those just listed will...

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usually get you by. When purchasing supplies, don’t be afraid to try different products on the market. Experiment until you find the ones that work the best at the right price for you. One thing equipment managers should keep in mind while experimenting is to use up what they have before ordering another kind. If you don’t, you may end up with five cases of different brands of penetrating oil sitting on the shelf collecting dust. This may indicate to upper management that the equipment manager is purchasing unnecessary items and may result in the time-consuming requirement that all future purchases be approved before any order is placed.

Shop Organization and Safety

Keeping a shop well organized will not only improve the efficiency of maintenance procedures, it will also produce a more professional image of you and the other staff. Each time somebody visits the maintenance facility, from tools to air filters, a properly organized shop should have a designated place for everything. Once locations have been established for items in the shop and parts room, it is the equipment manager’s responsibility to make sure they stay in an orderly manner. It will not only make it easier to find parts and tools, it also creates a safe atmosphere by not having trip hazards in the middle of the floor.

When organizing a shop, keep things where they will be utilized in the most efficient way. Simple things like keeping tire tools close to the tire machine, keeping your welder and welding supplies close to each other, or even fabricating a rack to store oils and grease guns on, will definitely aid in efficient utilization.

It is also up to the equipment manager to maintain a safe shop. Shop safety usually amounts to nothing more than a little common sense. You certainly wouldn’t put a reel grinder or welder near a flammable parts washer. Nor would you want to work on a jacked-up piece of equipment without the extra support of jack stands.

Although those examples are common sense, there are a lot of safety rules and regulations that must be learned by reading a rather large book published by a government safety organization - the Occupational Safety and Health Administration, called OSHA. I highly recommend reading this literature so you will be somewhat prepared if OSHA decides to inspect your shop.

It’s all the little things that will embarrass you - or should I say, me? It wasn’t until two years ago that I found out spare oxygen and acetylene bottles couldn’t be stored next to each other on the same wall. I was so proud of the way I had the bottles chained and secured to the wall but the local fire marshal thought differently. He kindly enlightened me to the OSHA rules and requested that I drill more holes in a wall that was 20 feet away and chain and secure either the oxygen or the acetylene bottles there.

Did I mention that I’ve learned a lot over the years by making mistakes? Regardless of how we learn the proper way to do things, try not to make too many mistakes when it comes to safety, and remember this last statement. The equipment manager should always lead by example by using - and making sure others are using - the proper safety equipment recommended for individual jobs at the workplace.

Making Preventive Maintenance Programs a Success

Getting the longest possible life out of the equipment fleet should be one of the primary goals of the equipment manager. The best way to accomplish this is to design and implement a good preventive maintenance program. There are various PM programs available for technicians to use. There are computer programs where you can spend hours typing in key information from each piece of equipment and then keep track of how many hours each piece of equipment ran each day in order for the program to schedule the services.

Then there is program known as the “hourly method.” This simply means that somebody walks around to every piece of equipment at the end of each day and records the hour-meter readings. This program usually results in following the manufacturer’s exact specifications when certain services need to be done at certain hour milestones. In a perfect world, (and with a few assistant mechanics), I would have to say this program would promote the greatest longevity on the equipment. It does require one person to devote almost their whole workday to ensure proper filters are being ordered and the right services are being scheduled.

The last PM program that I’ll mention is the one I use on our equipment fleet. This program is known as the “calendar method.” The calendar method program works by estimating the amount of time each piece of equipment gets used each week or month, then making preventive maintenance charts for each type of equipment by following the manufacturer’s recommendations as to when services are to be performed. Then the maintenance service for each piece of equipment is put into a four-week interval chart to simplify things.

Yes, all PM programs require effort and commitment, but the calendar method seems to be the most practical for me, especially when only a few people (two at my shop) are responsible for 92 pieces of equipment. I set up this program in Microsoft Excel files to keep the different charts I design organized and easy to change. After the charts are printed, they are placed in a transparent cover on a three-ring binder that contains the parts, operators’ names, and service manuals for the type of equipment that is being serviced. That way if there are any problems or questions during the service, there’s no running back and forth to the office to retrieve information.

Speaking of manuals, it is very important that the equipment manager make sure all the proper manuals for each piece of equipment are kept in a neat and orderly manner. It is impossible to know every piece of equipment inside and out, and by guessing at certain adjustments or repairs, I can assure you that most of your work will be created by you if you don’t do your homework.

Another thing the equipment manager should keep in mind when performing oil and filter changes is the quality of materials being used. Always follow the manufacturers’ recommendations.
as to what type to use, but it's up to you to figure out what brand to buy. As far as filters go, there are only a handful of companies that manufacture them so do your research before making a decision on what brand should be installed in your equipment.

On the other hand, there are a lot of choices when it comes to purchasing engine and hydraulic oils. There are petroleum-based oils, semi-synthetic oils, fully synthetic oils, and biodegradable oils. A good rule of thumb for engine oil, once again, is to buy the best you can afford. I look for engine oil with a high TBN number and make sure that its API service classification meets or exceeds industry standards. When I purchase hydraulic oil, the first thing I do is make sure it's compatible to the manufacturer's specifications, then I look at a few things like its thermal stability, anti-wear protection, rust protection, hydrolytic stability, and demulsibility.

When quality oils are purchased, oil drain-and-change intervals can be extended. Longer drain intervals reduce labor and most importantly, generate less waste oil and filters. As you can see, there are many key factors involved in designing and implementing a PM program, but no matter what program you choose, always remember that a good PM program will help you manage the equipment and not let the equipment manage you.

**Backlapping vs. Grinding**

"Do I grind or backlap?" Every equipment manager is going to be faced with this question sometime in his career.

There is no wrong or right answer to the previous statement. But if you were to attend some of the technician meetings I've been to, you'd think it was some big, complicated decision. From what I've seen in the industry, it's mostly the equipment manager's preference and/or the turf conditions that lead to the final decision. Believe it or not, there are still clubs that do not have both grinders or backlapping machines, which makes the decision even easier because they are forced to do one or the other.

Naturally, certain factors will aid in the decision of whether to grind or backlap. It's mostly common sense but here are a few examples anyway.

Your end product is going to vary with different turf conditions. You're simply not going to get a reel to cut paper by backlapping it after it has mowed all those freshly topdressed greens. I'm sure there are some equipment managers out there who will argue against the previous statement, but for me, I just haven't had success. Let's say you have a fairway unit that, as far as you know, mowed only grass on all the fairways. Let's also say it takes four to five hours to grind that particular unit. Since the reels haven't taken a severe beating, you can backlap and save you time. Either way you want to look at it, backlapping is nothing more than maintenance between grinds. If it takes 20-30 minutes to backlap a dull reel to bring it back to a sharp edge, then make a strong attempt to grind it whenever possible.

Pay close attention to the dulling curve because the longer you wait, simply means more damage and stress to the grass. Whether it's grinding or backlapping, the main objective in reel maintenance is to have a sharp reel that produces a high

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Quality of cut. I've tried both methods and I would suggest to anyone who hasn't, go ahead and give them a try, because when done properly you'll see they are both very effective.

Working with an Assistant Mechanic

I know every shop doesn't automatically come equipped with an assistant mechanic, but there are some with up to five or six. If an equipment manager is blessed with one or more assistants, he should exercise patience and try to teach them everything they want to learn about equipment management. Over the years at technicians' meetings, I've heard several equipment managers say that they don't let their assistants anywhere near the reels.

Let me get this straight. These equipment managers have asked for assistants, got them, and now they're afraid to teach them something? I've thought about that statement and can't for the life of me figure out why anyone would have such an attitude. I guess that means these individuals go on vacation only to come back to a pile of work because the assistant mechanic wasn't trained on how to do it.

Assistant mechanics are employed so the equipment maintenance can be shared, not so they can change oil and sweep the floors at the end of the day. If they have questions, take time and answer them. If time doesn't permit, make a mental note and answer it later. Just remember, you had to start somewhere too. The more knowledge that the assistant mechanic acquires will only make the equipment manager's job easier.

Praise your assistants. You'll be surprised how far a little compliment will go. Encourage them to enroll in classes that pertain to equipment management, such as a small-engine class or perhaps a reel-grinding class. I know these classes aren't available everywhere, but I also know that some of the major manufacturers offer seminars that would benefit assistant and head mechanics. Bring your assistant to these seminars when possible; let them learn with you.

For those equipment managers who are scared or threatened by a smart assistant, they apparently have the "you can't teach an old dog new tricks disease." Don't be afraid of your assistant learning more things about this industry. Those who have well-trained assistants know just how valuable they are.

They also know how much time and patience may have been invested in training them. I bring this up because at some point in time your assistant will reach his or her goal by landing an equipment manager's job. No matter how much time was spent training them, do not get mad or fault these individuals for improving themselves. All you can do is hope that some quality work ethics were instilled in them and

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