



Turf Maintenance Facility Design and Management

A Guide to Shop Organization,
Equipment, and
Preventive Maintenance
for Golf and Sports Facilities

John R. Piersol • Harry V. Smith

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Harry V. Smith



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Introduction

It was common in past years to hear golf course maintenance facilities referred to as “the barn.” There often was good reason for such terminology as golf courses were, and still are, often carved out of farmland sold for development. Farm buildings often remained on the property, and the barn was often converted into the golf course maintenance building used to house all the turf equipment. The barn kept the equipment dry, but it often had a dirt floor and inadequate space for organized equipment storage, for an area for repairs, and for an organized parts room.

Over the last 30 years, golf on television has drawn more attention to highly manicured turf, and many golfers began to demand high turf maintenance at their own clubs. This put pressure on the golf course superintendent to maintain the tees, fairways, and greens at higher standards, and the superintendents put pressure on the turf equipment manufacturers to produce more sophisticated mowing and cultivation equipment that would produce the type of turf golfers were demanding. More sophisticated equipment decked with hydraulics, electronics, and eventually some computerized components all translated into higher equipment costs.

As equipment budgets grew, golf course superintendents began to realize that jamming all this expensive turf equipment into a barn was not a good equipment management practice. Space was needed to store the equipment in an organized fashion so that the equipment technician and operators could easily access all units. Adequate space

was necessary for preventive maintenance procedures and repairs. An organized parts room became more important. Cleanliness became important as it made no sense to store expensive equipment in a dirty environment.

The golf course mechanic began to evolve into the turf equipment technician as the technician had to constantly update his or her skills to stay current with new equipment technologies. Overall maintenance facility design and organization became more important in order to have a clean, efficient shop that allowed the technician to properly maintain the equipment to high standards. Good preventive maintenance (PM) translated into better equipment performance, longer equipment life, less unproductive time, better residual value when old equipment was traded for new units, and happier and more productive employees.

The golf course superintendent began to request a more highly trained technician rather than someone who was just good mechanically. The superintendent wanted someone who could help design a shop, organize a shop, develop and properly stock a parts room, establish PM programs for each piece of equipment, use a computer, help train equipment operators, and keep updated on quickly changing equipment technology. Such technicians were hard to find as very few schools offered specialized turf equipment programs because this specialty in mechanics was not widely known. The demand for the turf equipment specialist continued to grow.

Maintenance facility design and management for all sports turf operations is critical. Expensive turf care equipment needs to be washed after each use and stored in a dry, clean environment. Clean equipment allows for quick visual inspections to pinpoint any problem areas, and a clean floor becomes part of the PM program as a drop of oil under a mower can be easily seen and may be an indication of a hydraulic line that needs repair. A clean shop is an efficient

and safe shop, which translates into cost savings. A clean, well-organized shop also builds pride in the employees, making them more productive.

The entire concept of the turf maintenance facility and the turf equipment technician is evolving. The maintenance facility is the epicenter of activity for everyone involved in turf maintenance at golf courses and sports facilities. Environmental and government safety regulations, equipment costs, increasing salaries, and the need to build a loyal, dependable team of employees have all had an impact on maintenance facility design.

The location on the property of the turf maintenance facility, the design and organization of the interior space of the facility, and the development and implementation of a PM program for the turf care equipment are all critical to the establishment of a cost-effective, efficient turf maintenance program. Many golf course superintendents and sports turf managers have developed ingenious designs for shop areas through years of experimentation and by working with golf course architects, turf equipment technicians, and other professional turf managers; however, there is no one source one can use to gain insight on efficient turf maintenance facility design and management.

The authors have compiled photographs, drawings, and concepts about turf maintenance facility design and management that will be a good source of information for the golf course superintendent or for the sports turf manager who is designing a new facility or who wants to better organize an existing one. Having all this information in one book will provide a convenient source of ideas and information that should stimulate the turf professional to think how to best design and implement programs that best meet the needs at his or her facility. No book has all the ideas, but the successful, proven concepts provided here should aid the turf professional in developing an efficient and safe turf maintenance complex.

The Role of the Turf Equipment Manager

History

The Management Team

The Turf Equipment Manager as the Team Psychologist

Future Roles

Sports Turf Facilities

HISTORY

Lake City Community College (FL) started its Turf Equipment Management Program in 1973. From the beginning, the turf equipment program was unique because it dealt with mechanics as it pertained to the specialized turf care equipment at golf courses. There were, and still are, very few such programs. Lake City Community College initiated its program as a result of feedback from golf course superintendents who indicated a desire to hire mechanics with specialized knowledge of turf care equipment repair, preventive maintenance (PM), and reel grinding skill.

In the mid-1970s, the turf equipment manager was still commonly referred to as the mechanic or perhaps the golf course equipment mechanic. The mechanic at that time was usually someone who had a good mechanical background, possibly from automotive mechanics or from the military,

and who was very good at fixing equipment and doing basic welding. Reel mower maintenance was learned on the job, and the good mechanics learned quickly. Many of these mechanics were weak in implementing shop design and shop organization, reading equipment manuals, establishing PM procedures, setting up a parts room, and keeping a proper parts inventory. Mechanics from the military were desirable as they usually had strong organizational skills and a PM background.

Most golf courses and sports facilities got along satisfactorily with these early mechanics because they were very good at keeping the equipment running and at fixing anything that broke, and that is mainly what they were asked to do. After all, the equipment was stored in the barn where the mechanic worked, and there was not strong emphasis on shop organization, neatness, and PM.

From the mid- to late 1970s, golf on television grew more popular and as a result, millions of people saw highly manicured turf. This created a desire in many golfers to have their home courses more closely groomed. This desire translated into pressure on golf course superintendents to initiate higher levels of turf management. Even though new turf varieties, fertilizer products, pesticides, etc., were all involved in this movement toward highly refined turf management, it was the mowing and renovation equipment that had the most immediate impact, and the turf equipment manufacturers responded to the needs of the superintendent.

The turf equipment became more sophisticated; more hydraulics, electrical components, and eventually computerized parts became standard features, requiring a technician with more technical knowledge to be able to read and understand the maintenance manuals. Almost overnight, it seemed, golf course superintendents began requesting skilled turf equipment technicians to maintain the newer, more technical equipment.

This was the beginning of the turf equipment technician shortage. Demand for properly trained technicians was up, but there was no new supply coming into the market. The few turf equipment students that Lake City Community College graduated were readily hired by golf course superintendents. With direct input from turf equipment manufacturers and others in the golf industry, the Lake City curriculum was developed to include not only welding and mechanics, but also shop design, shop organization, hydraulics and electrical systems, parts inventory management, PM concepts, reel technology, and computers. These were the skills and training the golf course superintendents wanted in a technician, and a serious student could be satisfactorily trained in less than a year.

Through the 1980s and 1990s, the demand for turf equipment technicians continued to grow, and the supply of graduates from programs remained low with a resultant increase in salaries. Instructors and administrators at the few turf equipment programs that did exist were all trying to increase student numbers, which proved difficult. It would seem logical that with high industry demand and good, increasing salaries, it would be easy to recruit students for the programs. This was not the case, primarily because of total lack of career awareness. Nobody knew what a turf equipment technician did, and most people had no idea that a golf course even needed a mechanical person who could manage a shop with a million dollars or more in turf care equipment. How would people know? Who would tell them? Even golfers and green committee members had little knowledge of what went on in a turf maintenance facility.

The inability to attract students to turf equipment programs forced some programs to close. This was unfortunate as the faculty and staff at schools were trying to meet an industry demand and trying to interest students into a lucrative career. More programs were needed, so it was

especially harmful when programs had to close because of low enrollment.

Lack of career awareness, low enrollment in turf equipment programs, and high industry demand for technicians still plague the golf and sports turf industries today. The equipment continues to get more sophisticated and expensive, and demand is growing for a turf equipment manager, not just an equipment technician. Salaries are very good, and jobs are plentiful. At Lake City Community College, it is common for the school to receive 30–50 job offers for 10–15 turf equipment graduates. The starting salaries offered range from \$23,000 to \$40,000, with career potential for \$50,000 to more than \$70,000.

THE MANAGEMENT TEAM

The golf course management team used to be the golf course superintendent and the assistant golf course superintendent, but now the turf equipment manager is included as an integral team member. In fact, most golf course superintendents will quickly declare that the turf equipment manager is their critical team member. It takes a huge load off the superintendent and the assistant to have a mechanical, management-oriented equipment manager who keeps the shop neat, clean, and organized, and who can implement a PM program for all the equipment so that everything runs properly. This allows the superintendent and the assistant to concentrate on agronomic practices, leaving the equipment and shop management to the turf equipment manager.

The team approach to management is important, as it takes various talents to run an effective turf management program, and everyone must be appreciated for his or her contribution. This is certainly true with the turf equipment manager.

The days of treating the equipment manager as “just the mechanic” are long gone. The equipment manager can keep the shop safe and efficient, save the maintenance budget thousands of dollars through proper inventory control and PM, and maintain high equipment trade-in value through proper maintenance practices.

THE TURF EQUIPMENT MANAGER AS THE TEAM PSYCHOLOGIST

A clean, organized maintenance facility has an impact on the psyche of the crew. It is common for people to act according to the condition of the space within which they live or work. If people work in a pigpen, they usually act like pigs, but if their work space is clean and neat, they will again act accordingly. So the way the equipment manager keeps the shop area affects the attitude and behavior of the crew; thus, the label of “team psychologist” for the equipment manager.

In a well-run facility, the entrance road is paved and leads to a neatly paved crew parking area complete with lined parking spaces. The outside of the building is kept painted and clean and is finished with appropriate landscaping. The interior spaces are all kept clean and organized from the reception area to the hallways, to the offices, to the crew lounge, to the bathrooms and locker areas, and to the shop. This neatness sends a definite signal of pride and respect for all who work there. For a prospective employee coming for an interview, a strong statement is made without a word being spoken.

Compare the previous situation to a maintenance facility where the entrance road is a dirt road riddled with potholes that leads to a dirt or dirt and gravel area where people can park as they see fit. The outside of the facility needs paint and is dirty, and the interior spaces are not well organized

and are not kept very clean. The bathrooms and locker areas are not clean, and the shop area has a dirty floor, is poorly lit, and is unorganized. If you were coming for an interview, would you want to work here? What if you interview at the clean, organized facility and here, and the superintendent of the dirty facility offers more per hour; would it be worth it? Maybe some would opt for the higher starting wage, but one wonders how long the new hire would last.

Thus, the team psychologist, the turf equipment manager, can affect who wants to interview and crew turnover just by helping the superintendent keep the facility clean, neat, and organized. This is another way that a management-oriented equipment manager can save money. Most people want to work in an area where they feel good and where they sense that management really cares about their well-being. The turf equipment manager, working with the superintendent, can create this positive work environment.

FUTURE ROLES

It is difficult for an individual golf course superintendent to locate a skilled technician for an 18-hole course, but there is increasing demand for technicians to move into more management-only roles at multicourse facilities and with golf management companies that oversee many golf courses. This has occurred as a natural progression in the golf industry.

Multicourse facilities might have four or more technicians, creating an obvious need for a lead technician or a head turf equipment manager. There is a need for one person to be in charge of the shop area, to communicate with the golf course superintendent, and to train and supervise the other technicians. The titles *head equipment technician* and *turf equipment manager* are used interchangeably in the industry and