

# You Can Do Something

## about the "Whether"

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**W**eather" has always been a popular topic of conversation and it probably will remain so until control of the elements is a matter of routine.

Now to a golf course superintendent the weather is not just a topic of conversation, but his master, his servant or his downfall. We cannot control the weather at this time, but thanks to radar, weather satellites and weather bureau organization, we can receive reliable and timely information relative to climatic conditions. We must build our daily turf management routines on this information, and marshal our labor forces and equipment to accomplish what has to be done within the time allotted us.

So our plans are laid out, the men are ready, the materials are provided and off we go on to the golf course with a variety of tools and equipment designed to minimize the time factor in competing with the elements and the creditors by accomplishing turf management procedure in the shortest time possible.

All will go well if you can depend on the "whether." No, not the *weather* we originally mentioned, but the *whether*—whether your equipment will start, whether it will operate long-enough to complete the task. It is this *whether* that we can and must do something about!

The key lies in an effective preventive maintenance program. This applies to all golf courses. In order to produce excellent turf conditions within limited budgets and soaring labor costs, the reliance on time- and labor-saving machines continues to grow. As your equipment inventories expand, so does the need for an effective preventive maintenance program.

We at the Avalon and Avalon Lakes Golf Course have initiated such a program. Though this 36-hole golf course is maintained with equipment whose cost exceeds \$125,000, the need for a preventive maintenance system is applicable to all golf courses regardless of the amount of equipment they may own.

Having equipment ready when it is needed is very important to the golf course superintendent, because it contributes to the pro-

ducing and maintaining of a well-groomed golf course. In addition, the saving of dollars realized by the reduction of the total cost per acre in maintaining a golf course must always be uppermost in the superintendent's mind. He should always remember that every \$10 saved by more efficient maintenance or repairs to his equipment is the equivalent of \$100 collected in green fees. (For this is \$10 essentially converted into profit versus \$100 of gross income required to achieve the same.)

In a discussion between Alexander Radko of the USGA Green Section and Robert D. Cochran, our green committee chairman, Mr. Radko mentioned that the Green Section had tried on many occasions to determine the average cost for mowing 1,000 square feet of green putting surface; the cost of raking 1,000 square feet of sand; the cost of mowing one acre of fairway, etc. Actually, it was this brief contact that encouraged us on the quality of our system of records. This system will not only answer those questions, but also can determine that cost of maintaining your green by individual process, or all the processes ranging from mowing to changing cups, from spraying to fertilizing, or any and all the other functions you may feel important to your overall golf course management and cost accounting.

Mr. Radko was not seeking this information just to make conversation but because he realized that in order to alleviate the high cost relative to golf course operation you must stretch your budget dollar. By keeping records you can justify the expenditures you are making, but should the inevitable budget cuts occur, you have the information at hand to show the committee how the proposed cut in funds will affect your operation in terms of trees not trimmed, drainage trenches not dug, water systems not repaired and labor-saving equipment not purchased.

### The Preventive Maintenance Program

The key factor in any maintenance program is the operator, not the mechanic. It is the operator who detects in time a mechanical problem so that a mechanic can correct minor

## AVALON & AVALON LAKES GOLF COURSE MAINTENANCE CONTROL

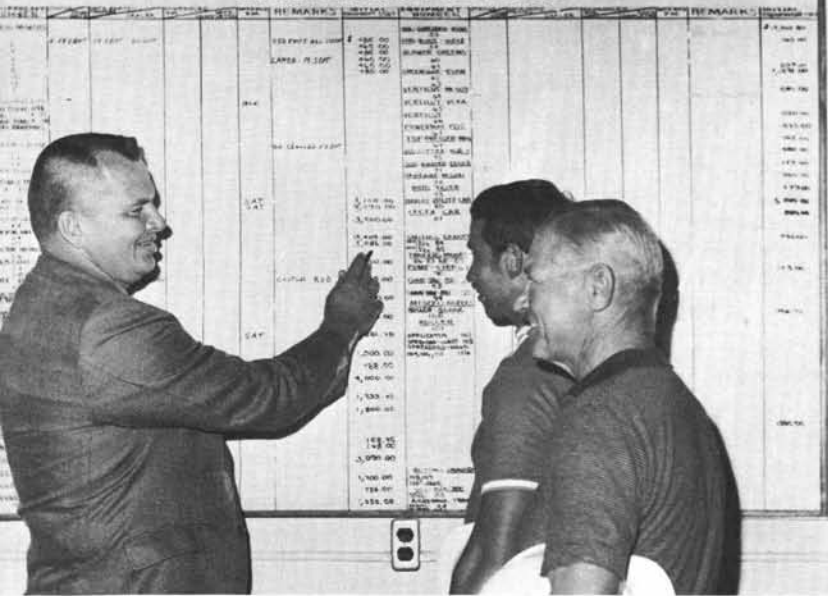


Figure 1. The Maintenance Control Board shows at a glance the status of equipment at the Avalon and Avalon Lakes Golf Course. Superintendent Dean Peterson uses this board during conferences with his assistant supervisors, John Setak (right) and Robert Mizike (center).

failures before expensive and more time-consuming replacements are required. Proper operation and use of equipment is as important a part of preventive maintenance as the scheduled service recommended by factory engineers in their service manuals.

Putting these last few paragraphs together we have the basic definition of preventive maintenance; the systematic care, inspection and servicing of equipment and detecting and correcting minor failures before expensive replacement and more time-consuming repairs are required.

To insure that all important parts of the equipment are checked thoroughly, two types of maintenance service are required. The first is performed by the operator each day prior to, during, and after operating his equipment. Second is the scheduled services performed by a mechanic. This service is basically that recommended by factory engineers, and the experience factor relative to your own specific use of the equipment and information gathered from past equipment utilization and repair records.

In order to have a scheduled preventive maintenance program, a system of records must be used that provides the necessary information to schedule equipment for service with the least possible interference with the turf management operation. The preventive maintenance program is based upon the hours accumulated by each item of equipment. Use of equipment will differ among golf courses, but if records are being kept, the hours accumulated will be a guide to other requirements that cannot be found in maintenance manuals. An example of this is in the establishing data for projecting

your lapping and sharpening requirements and bed-knife replacements, as well as your spare parts stockage objective. So it is obvious that in order to have any projected preventive maintenance program, a system of records is essential.

### The Record System

The smooth operation of any maintenance system depends upon the understanding and completion of certain forms and records plus the availability of all pertinent operator, maintenance and parts manuals. These forms, records and maintenance manuals provide uniform procedures for the control, operation and maintenance of equipment. In addition, it also provides a means for gathering cost data to justify expenditures, as well as to evaluate equipment. (This is precisely the information that the green committee and board of trustees want to know.)

Though your golf course may have a variety of equipment, the system followed at the Avalon and Avalon Lakes Golf Course can be used for all equipment, regardless of the variety or amount.

The information required by these forms is provided by the operator and the mechanic, with information recorded and analyzed by the green superintendent, who recapitulates certain entries to condense data for committee, budget and progress meetings. These records also provide a consolidated daily record of all items of equipment used in each of the turf management and golf course maintenance areas. Interestingly enough, although the system consists of five basic forms, the majority of the key information is provided by the operator and the mechanic—information that takes just a minute

or two to record will provide pieces to a large picture puzzle—a picture that is completed by one complete season or annual cycle. (See log and record charts).

The foundation of this record system is based upon the *Employee's Daily Operation and Maintenance Log*. It is here that the worker enters the basic elements of information required for this record system.

The Monthly Labor Utilization and the Monthly Equipment Utilization forms consolidate all the daily totals of labor and equipment hours used in performing specific tasks, and reflect the daily totals to come up with the monthly totals.

The Annual Labor Utilization and the Annual Equipment Utilization forms reflect all the monthly totals gathered from the monthly forms and show the annual total of labor and equipment hours, as well as each specific area where labor and equipment were utilized and the processes that were performed.

The annual forms are the simplest to complete and the most indicative of your overall golf course operation. You can tell at a glance when you have fertilized or sprayed, watered or aerified, together with a man hour figure that tells you the cost of any specific operation, or the equipment used in performing these tasks.

The preventive maintenance requirements are geared to this information gathered from these forms. This data that indicated the total hours of operation for each item of equipment enables the superintendent to forecast engine overhaul requirements and specific schedule maintenance in accordance with factory recommendations, as well as your projected equipment replacement program.

It also enables you to review items of equipment that have not been used to determine if the lack of hours was due to lengthy down-time, or because of an inferior product or a change of requirements.

Those items that show a high usage factor may warrant the purchase of a more efficient machine that may pay for itself due to less man hours utilized in accomplishing the same task.

The seasonal needs and usage of specific equipment are apparent, and this information is used to schedule equipment for scheduled maintenance, and also when these items can be serviced for storage to prevent deterioration because of idle equipment. The frequency of use determines the frequency and type of service your equipment should receive.

The Annual Labor Utilization together with the Annual Equipment forms provide a composite picture record of your complete operation. It is a tool that you can use to convince your green committee in any area

where they may need convincing. Our green committee chairman showed his confidence in our judgment by authorizing the purchase of a triplex for greens mowing. Initially we speculated on this new labor saving machine, but now our records attest to the wisdom of his decision by showing the man-hours saved.

At Avalon and Avalon Lakes we can read the weather from the Annual Equipment Utilization forms. When our lift-pump is used to lower the lake level, it shows that we had rain. When the irrigation equipment is recorded, it shows the need for offsetting a dry spell. These items of information are interesting and useful, but the basic document that feeds the information to this form, the Operator's Daily Operation and Maintenance Log is the foundation of the entire record and maintenance system. It is here that we deal with the most important and critical element of any maintenance program—the operator and his equipment.

It is here that the superintendent can check for work progress and problem areas. He can tell whether the employee was or was not working efficiently. He can also see if the mechanics have responded to the mechanical difficulties noted. It assigns direct responsibility for your equipment to the operator and minimizes unreported maintenance problems. If used properly, it will assist you greatly in doing something about the "whether"—whether you will be ready to go when conditions warrant.

The Employee's Daily Log is the only form that requires explanation to the employee. Actually, there is only one column that requires any real explanation and that is the "Job Code" column. In order to identify a specific job, a job code number has been assigned. A four digit number is used. The first two digits are assigned to specific areas. We have assigned numbers in order of priorities and frequency of use. Example—the name of the golf game is "greens" so the area of greens has been assigned "01." The process performed with the greatest frequency is mowing, cutting and trimming, so this process has also been assigned "01." The combination of both numbers makes up the job code. 0101 denotes that the greens have been mowed; 0103—changing cups on the green; 0105—watering greens, etc. The system is best understood by looking at the job identification list. The Job Code Identification List is posted in an area that the employees use for recording equipment used and work performed.

To give the system additional flexibility, a double "00" is provided so the employee may add in the "remarks" column any area or process not listed. This enables the superintendent to add, if he deems necessary, the new process or area noted. All other columns



EMPLOYEE'S DAILY OPERATION AND MAINTENANCE LOG

EMPLOYEE'S DAILY OPERATION AND MAINTENANCE LOG

AVALON LAKES GOLF COURSE.

DATE 7 JUNE 70

INSPECT EQUIPMENT PRIOR TO USE

Employee	Equipment Number	Job Number	Hours		Fuel Oil	Remarks Repairs Required
			Labor	Equipment		
ULP	A-17	0201	3	2 1/2	2 gal	OK
BILL	A-18	0101	3	3	2 gal	OK
TOM	A-19	0101	3	2 1/2	2 gal	HYD. LEAK R. MOWER (OK JOE, P.)
BONES	<del>A-39</del> A-40	0106	5	4 1/2	10 gal	OK BACK 9
BA	A-250		-	2 1/2	-	OK
RT	A-80	0105	2	1 1/2	2 gal	1-3-5 GREEN
ULP	A-21	0301	6	5	10 gal	4-WING REEL HIT STONE
JOHN	<del>A-25</del> A-43	0401	10 1/2	9 1/2	10 gal	OK
ZEKE	A-110	1101	2	1 1/2	1 gal	OK
JDE	-	1010	2			
JDE	-	1011	3			
JOE	-	1012	3			
AL	-	3131	2			
AL	-	2011	6			
DEAN	-	1900	9			SUPERVISED ATHLETIC FIELD CONST. FOR CHURCH
Daily Total			59 1/2		39 gal	

SERVICE EQUIPMENT PRIOR TO SECURING.

REPORT ALL DISCREPANCIES NOTED.

MONTHLY LABOR UTILIZATION RECORD

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AVALON LAKES GOLF COURSE

DATE: JUNE - 70

Monthly Labor Utilization Record

Job Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total Hours
0101	5	7	5	4	11	4	6	8	7	7	6	7	7	3	6	9	5	6	5	6	12	3	5	6	3	6	6	6	6	6	165	
0105	6	3		3	2	2	12	7	8	2	8						3	4	5									10		75		
0106				10	6	5										11	9	6	9												51	
0201	9		2	9	3	2	4	15		17	8	7	11	3		9															110	
0301	7	2		7	6					9		4	4	7	5	7	3														61	
0401	9	13	6	10	4	10	7	11		13	8		5	3	4	4	2														110	
1010	4	4	3	4	3	2	2	3	4	6	5	5	6	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	80	
1011	11	12	11	8	11	5	3	11	10	6	16	20	14	11	10	12	8	8	5	10	9										211	
1012	1		2	3																			2	3	2						13	
1101			6	2		3	1			4																		3			23	
1900						9																									9	
2011						6		4								4							8			6					28	
Daily Totals																																

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AVALON AND AVALON LAKES GOLF COURSES

1970

ANNUAL LABOR UTILIZATION RECORD

Job Number	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	Total Hours	
													Avalon	Lakes
0101	20	96	186	199	195	206								
0105		86	148	165	175	162								
0106			28	62	110	97								
0201			26	26	12	32	16							
0301			20	38	51	57	32							
0401			49	100	108	95	89							
1101			48	78	110	96	97							
1010			19	102	85	92	41							
1011			17	63	61	48	36							
1012	4	20	138	139	149	80								
		3	175	110	113	86								
			40	65	72	25	52							
	100	110	50	20	30	20								
	140	150	72	60	100	60								
	25	30	20	20	110	115								
	27	32	80	111	200	160								
	7	5	10	11	10	12								
	11	5	10	13	12	14								

MONTHLY EQUIPMENT UTILIZATION RECORD

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AVALON LAKES (VAL COURSE)  
Monthly Equipment Utilization Record

MONTH JUNE 70

Equipment Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total Hours
A-17	5		3	8	2 <del>8</del>	10	4	8		10	4	1 <del>4</del>	4	9		6	9															84
A-18	4	4	2	2	1	4	3	2	4	3	9	3	2	1	3	7	3	3	3	6	3	3	2	3	3	3	3	3			99	
A-19	2	3	3	3		2 <del>8</del>	2	3	4	2	4	3	5	3	3	2	5	1	1	2	3	3	2	3	2	3					67 $\frac{1}{2}$	
A-21				3	5		8		3	3	12	3					3	4	3		4										51	
A-24	2			12	4 <del>8</del>	13	6	11	4	5	6			3						1 <del>6</del>	3	5		4						83		
A-25				7	9 <del>8</del>	3	11	5											1	3	2 <del>8</del>	9	4		4	3				67		
A-40				4 <del>8</del>	4 <del>8</del>									6				3	3	4	4	3								36		
A-43	4 <del>8</del>	4			7 <del>8</del>				4												4									26		
A-80	2	8	4		1 <del>8</del>	3	2 <del>8</del>		1	2											1									25		
A-110		2	6	2	1 <del>8</del>	1 <del>8</del>	3	2		2	1									1	3	2					1	4		32		
A-250				10	6	2 <del>8</del>						11								4	6		5				1 <del>8</del>			46		

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AVALON AND AVALON LAKES GOLF COURSES  
ANNUAL EQUIPMENT UTILIZATION RECORD

1970

Equipment Number	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	Total Hours	
													Avalon	Lakes
GREEN-K A-17	8	70	115	84	83									
GREEN-K A-18	7	43	96	99	96									
GREEN-K A-19			6	67 $\frac{1}{2}$	78									
FUN-HOUSE A-21		7	55	51	46									
TRACTOR A-24		24	44	54	40									
TRACTOR A-25		18	89	83	29									
TRACTOR A-25	4	18	24	67	23									
SPRAYER A-40		15	27	3	12									
BLITZER A-43			33	12	36	32								
PUMP A-250			17	26	6									
				46	65	80								