



Six inch diameter Silver Maple three years after transplanting.

run away from the root ball. Conversely, water tends to run into the root ball when a tree is relocated from a sandy site to a site with heavy soils. In either case, drainage becomes a problem.

In the former case the newly transplanted tree is susceptible to drought, while in the latter situation the tree is subject to flooding. Both of these situations result in considerable crown dieback, and may even result in the death of the newly transplanted tree. It is, therefore, desirable to relocate a tree to the same soil classification as the one in which it was originally found growing.

Ground slope governs the operation and mobility of the mechanical diggers. Slopes in excess of 4 to 1 are too steep for most truck-mounted diggers. Since the digging equipment operates at right angles to the ground surface, the tree must be returned to the same angle of slope. A variation in slope between the tree source and planting sites will result in the trees being established in a non-vertical position, or in a position where part of the root ball is exposed to the elements.

At first, spade-type digging equipment appears poorly adapted to transplanting tap-rooted trees, such as Jack Pine. One assumes that most of the root system is located in the deeper reaches of the soil profile where the diameter of the spade-type digger is smallest.

Conversely, the shallow, lateral-rooted trees appear well suited to the spade-type diggers because a larger proportion of their root system is in the upper soil profile where the digger's diameter is greatest.

Actually, the reverse is true when dealing with wild grown or woods collected stock. A larger proportion
(continued on page 44)

Planting success all year round!

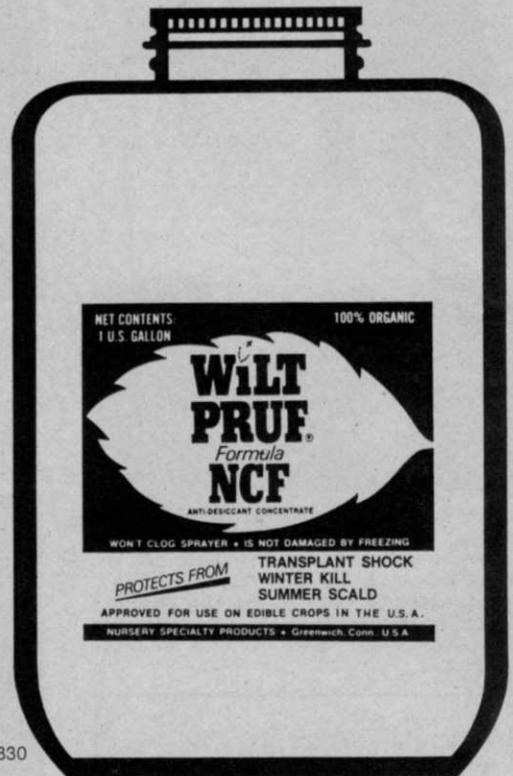
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John R. Quarles, Jr. has been named Acting Deputy Administrator of the Environmental Protection Agency. He was appointed by Wm. D. Ruckelshaus, new Acting Director of the FBI. Quarles left the post of assistant administrator for Enforcement and General Counsel of EPA.

Green Industry Newsmakers

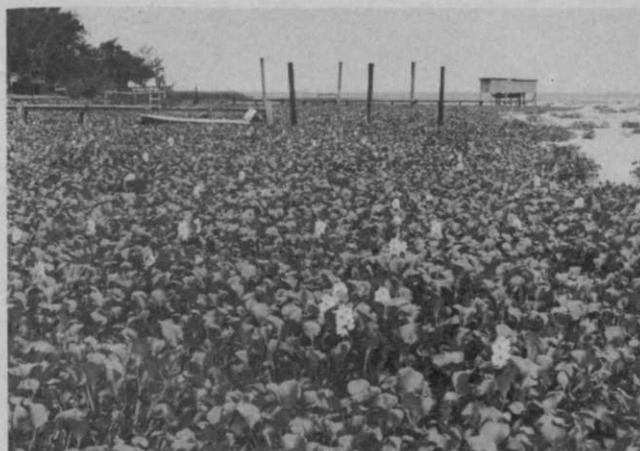
PEOPLE PLACES EVENTS



Here's the class who attended the University of Tennessee 4th annual one week winter short course in turfgrass management. Dr. Lloyd M. Callahan, associate professor, department of ornamental horticulture and landscape design conducted the course. Show (l-r, front row) are: Bruce Macdonald, Ben Green, Bill Fattat, Douglas Henley, Ken Stovall, Rex Pope; (second row) T. J. Nutt, Charles O'Donniley, Ray Scott, Jerry Hilycord, A. D. Cartwright, Jr., Jackie Christianson; (back row) James Farmer, John Watson, Ivan Tune, Billy Maxwell, Talmadge Shedd, and Dale McGahey. Not present is Jerry McKee.



New officers of the Mid-Atlantic Association of Golf Course Superintendents are: (l-r) Richard Silvar, Baltimore Country Club, Baltimore, Md., William Emerson, Eagles Nest Golf Course, Timonium, Md., Angelo Cammarota, Hobbits Glen Golf Course, Columbia, Md., Alex Watson, Sparrows Point Country Club, Baltimore, Md., Samuel Kessel, Country Club of Fairfax, Fairfax, Va., all board of directors; George Thompson, past president; Lee Dieter, Washington Golf and Country Club, president; George Cleaver, Golf Course Superintendents Association of America board member, J. Paul Barefoot, U.S. Soldiers Home, vice president; David Fairbank, Army-Navy Country Club, secretary-treasurer and Dennis McCammon, Springfield Golf and Country Club, Springfield, Va., board member.



Solid water hyacinths. Try navigating through this mess. That's the way the east bank of the St. Johns River looked about a year ago. Since that time, Corps of Engineers from the Jacksonville, Fla. District have brought this weed pest under control. Photo was taken in St. Johns county near Taco.



A new logo and name changes for several of its divisions are the latest from FMC Corporation. Bolens now becomes the Outdoor Power Equipment Division. Placing the new logo on this QT-16 tractor is C. F. Bartlett, general sales manager and D. L. Hill (r) division manager for Outdoor Power Equipment Division.

Hal Vogler and his sowing machine.

Here's a man who wants to put the germination percentages on your side, for a change. He's with the W. F. Miller Co., the Jacobsen Distributor in Birmingham, Michigan.

And like the rest of us Jacobsen Distributors, he's got the machine that knows how to give you 70% germination on both overseeding, and in new seed beds. The Jacobsen Model 548-100 Seeder.

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It removes thatch, it aerates and plants the seed, all in one operation. That's triple duty for your investment. (Not only that, if you take off the seeder attachment it will renovate, thatch,

vertical mow, spike and aerate.)

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So if you're looking for rich and lush turf, try seeding with the sowing machine that can put more of your budget dollar where it does the most good.

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A Golfing Oasis

WTT COVER STORY

By WARREN BIDWELL

Superintendent
Golf Course And Grounds
Congressional Country Club
Washington, D. C.

*To be successful, both
plant and man must work
at survival*

*The desert bloom is an
ordered period of beauty
operating according to
Nature's own special plan*

COMPREHENSION of time in terms of billions of years is beyond the mental grasp of man. Yet, it is this kind of time that was necessary to form and shape such unusual areas as Death Valley, California, on the eastern border of the state not far from Las Vegas. Visible evidence indicates that the processes of Nature continue today.

We stood recently on the rugged peak overlooking that portion of the valley below known as the Devil's Golf Course. From this vantage point, properly named Dante's View, is the most ancient of all the rock formations that belong to the Pre-Cambrian Era of geologic time. This

their way to the California gold fields, Death Valley, as they named it, is not without a wide range of plant and animal life. Even as late as 1922, reporters who were covering the famous character, Death Valley Scotty, referred to the 'Valley' as destitute of all vegetation.

Following the takeover of this unusual piece of geography by the National Park Service, creating present day Death Valley National Monument in 1933, botanists have recorded over six hundred species of plant life within the 3,000 square mile park boundary. This is in itself a most interesting story of plant survival in a rugged land.



Furnace Creek Ranch Golf Course is a nine-hole course designed by William P. Bell. Twenty-five tons of annual ryegrass are used each fall to provide "green grass" for winter play.

proved to be truly an awesome view, one very similar to those vista shots sent back to earth by our most recent Moon explorers. Like another famous geology area, Grand Canyon, Death Valley National Monument is represented by all of the geology Eras of the time scale of creation.

Plant Life

Contrary to the opinion of the lost party of 49'ers, who happened into this barren land by mistake while on

The influence of elevation in this region is significant indeed, and accounts for the many extremes in temperature, moisture and variety of plant life found here. For instance, for each two hundred foot rise in elevation, an additional one inch of precipitation annually becomes available and a drop in temperature of one degree. With the lowest elevation of 282 feet below sea level and Telescope Peak towering directly opposite, standing at 11,049 feet

Below Sea Level

above sea level, it is understandable that a total range of plant life is possible.

Only the central salt flats near Badwater are totally barren of all plant life. On the outer edges of these salt flats, where the salinity runs six percent, Salt Grass and Pepperweed are able to survive. In total contrast, in the 8,000 to 11,000 foot climatic zone, Bristlecone Pine are found growing that were mere seedlings when Solomon was building the Temple in Jerusalem. At this elevation it is not unusual to encounter 20 foot snow drifts that close the few entry roads from the west which originated as winter storms

tailored world of leisure.

In the harsh environment here on the valley floor, the practical holds equal importance to the aesthetic. For instance, in the spring of '72, the strong winds that blow up the valley from down Mexico way almost covered the 13th fairway with drifting sand. Had not the southern border of the fairway been planted with a tight row of Tamarix, a far greater encroachment of the golf course fairways by the drifting sand would have been experienced.

The Date Palms have a similar application. They provide a sense of dignity to surroundings that depict harshness, reminding one of the un-

where is the discipline of Nature more controlled than here in the desert. For here the balance of growth inhibitors and growth stimulators come into play.

Moisture and temperature at the time of germination of the 111 known species of annual flowers is the key factor. Those of us who deal with grass seedlings surely recognize the marvel and complexity of the seed. The role of the growth enzymes are truly fascinating. In the desert environment, they are in complete control.

Too little rain and the inhibitors are not leached out; the temperatures too cool and the stimulating enzymes are not triggered. However when Nature deems that everything is "right," the desert seeds that may have been waiting for a number of years germinate and come into bloom.

We noted such a vast germination during November while experiencing unusual amounts of rainfall. Indeed, Nature seemed tuned-in and heading for a record spring bloom. To return again in spring to witness the beauty in this rugged setting would be delightful indeed.

The Devil's Golf Course

My interest in a visit to Death Valley was three-fold: the geological wonder of it all; the photographic challenge that I knew existed, and the intriguing story, as told by a friend, that an 18 hole golf course existed here at 215 feet below sea level, growing real live grass on an ancient sea bed so saline at some points that grass cannot survive.

The other, an imaginary 'golf course' is affectionally known as The Devil's Golf Course and is so indicated on all of the official Death Valley National Monument maps.

No grass grows here.

The location is at Badwater, 282 feet below sea level; truly a briny no man's land, a total desolation for nothing grows.

The salt crystals that thrust up and crack open are responsible for the geological misnomer, thus the name of Devil's Golf Course; and all rough, totally impossible for plant growth and shot making.

This has only one similarity to the real golf course at Furnace Creek Ranch; both are located on ancient sea beds, but this one is spread over an area of 200 square miles where surface temperatures soar to 190 degrees, leaving it the most lifeless of any known location on our planet.

At Furnace Creek Ranch Golf
(Continued on page 34)



Would you believe that this course is located 279 feet below sea level? Note the Tamarix and Date palm lining the fairways. Annual ryegrass is used all the way because of its survival characteristics.

over the Pacific.

Of the 600 species of plant life, 30 are of the grass family. Some of the tree forms like the Tamarisk and Date Palms used at the Furnace Creek Golf Course are naturalized-adapted for special purposes. Their use at the golf course and at the Inn are both psychological and practical. The waving of the tree tops during the warmer portion of the tourist season provides a sensation of cooling, a fringe benefit to man in his

usual setting in which he seeks his recreation. The practical issue here is use of the dates by the baker at the Inn in putting his secret date-bread formula together for an eager clientele who patronize both the Inn and Furnace Creek Ranch, operated by the Fred Harvey organization.

The Desert Life

The desert bloom is an ordered period of beauty, operating according to Nature's own special plan. No-

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ASPA '73 Officer Team: left to right, Kidwell, Habenicht, Nunes, Bosgraph, Brouwer, and Davis.

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Business Records Best Tool Around For Sod Growers

By **ROBERT K. REYNOLDS**
Extension Specialist
Farm Management
Virginia Polytechnic Institute
and State University

HOW IMPORTANT is management to success in the sod business? You will probably agree that financial success is unlikely if poor management exists.

What influences the level of management? Well, there are undoubtedly a number of personal characteristics of the manager, such as experience, ability and attitudes, that have an affect on management performance. However, assuming the manager has the personal characteristics to permit good management, the level of management necessary for business success may not be attainable simply because he does not have the necessary tools with which to work.

Could you overhaul a tractor without using tools? That's a silly question—but it's just as silly to try to manage your business without using the tools available to you.

Good business records are the basic tools of management. Without them, critical limitations are placed on management and, consequently, on financial success.

The sod business is no different from any other business when it comes to keeping and using business records. The sod producer often

finds himself in that same type of "cost-price squeeze" experienced by other businesses which without sound management, may subsequently result in business failure.

The beginner in the sod business or the sod grower who is expanding his operation has the additional problem of sustaining rather heavy accumulated costs before receiving any offsetting income. The nature of the business is such that a somewhat lengthy cost-incurring period of time may be necessary before obtaining a salable product. This amplifies the importance of sound financial planning to which business records can make a significant contribution.

Most sod producers will say that records are good. But what real value can be forthcoming from keeping business records? There is little or no return for the time expended in record-keeping if they are not accurate, complete and, most important, used.

Concerning the usefulness of records, there are several basic needs that records should fulfill if they are to contribute to the management of the business. These needs may be classified in the following categories:

- A. the **service** need
 - B. the **diagnostic** need
 - C. the **credit** need
- (continued)

TRIAL BALANCE

Year-Ended 12/31/7-

Account Number	Account Description	Cash Disbursements	Sal
100	Cash on hand		
101	Cash in bank		
102	Accts. Receivable		
110	Est. Uncollected Acct.		
115	Notes receivable		
120	Inventory-growing sod		
121	Inventory-cut sod		
122	Inventory-supplies		
130	Prepaid insurance		
131	Cash value life Ins.		
132	Misc. prepaid items		
150	Land		
151	Land improvements		
151A	Land Improvements-Amort.		
152	Leasehold		
153	Building		
153A	Building-Depreciation		
154	Mach. & Equipment		
154A	Mach. & Equip. Dep.		
155	Autos & Trucks		
155A	Autos & Trucks Dep.		
156	Office Furniture		
156A	Office Furniture Dep.		
200	Accts. Payable		
201	Notes Payable		
210	Accrued expense		
211	Sales Tax payable		
213	Real Estate Tax		
220	Withholding Tax		
221	FICA Tax		
222	Other Payroll Withholding		
223	Unemployment Tax		
250	Income Tax-Federal		
251	Income Tax-State		
252	Income Tax-City		
275	Long Term debt		
280	Capital Invested		
281	Paid in surplus		
282	Withdrawals		
283	Dividends		
284	Earnings-prior period		
285	Earnings-current period		
SALES			
	Retail Sales-Sod		
2401	Meriod		
2402	Flyking		
2403	Creeping Bent		
2404	Kentucky Blue		
	Wholesale Sales-Sod		
2401	Meriod		
2402	Flyking		
2403	Creeping Bent		

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MEETING THE SERVICE NEED

This category is the most obvious and the one for which sod growers recognize they need some records of some kind. This need involves using record information for completing tax forms, for meeting the increasing number of labor record requirements, and for other reports that are solicited from time to time.

Many sod growers overpay their taxes simply because they do not keep a complete account of income and expenses. Sales may be recalled fairly accurately since they are usually seasonal and for relatively large amounts. However, many expenses are scattered throughout the year and are often overlooked.

Tax planning is an important function of management. Often the shifting of income or expenses, through delaying or in some cases expediting business transactions, from one tax period to another can significantly reduce the tax liability. Also, choosing the appropriate depreciation treatment for depreciable assets, based on the tax position of the business, can affect the short and long-run tax burden. Considerable tax savings may be going down

the drain for failure to maintain adequate business records for evaluating tax management alternatives.

MEETING THE DIAGNOSTIC NEED

The **diagnostic** need has to do with using records for locating the ills of the business. In this sense, records are comparable to the physician's stethoscope. They permit you to "feel the pulse" of the business, locate the strong and weak points. This process involves cost control and determining production and efficiency factors that will provide indications of where problems may exist in the business.

The first step, of course, is identifying production costs. This is very basic to diagnosing the sod business or any business for that matter. The cost per square yard of sod has a primary bearing on sale price.

To take steps to reduce cost, you need to know what comprises total cost; which costs vary with volume of production and which costs do not (fixed costs). Efforts to reduce the cost item that makes up only 5% of the total cost is hardly worth it, but efforts to significantly reduce the cost item that comprises $\frac{1}{3}$ of total cost may pay off very handsomely.

Thus, to determine where to apply cost management efforts for the greatest favorable influence on suc-



cess, you need to know your costs, and records are an essential tool for meeting this need.

Not only is it important to identify total costs, it is also helpful to classify them as to sod establishment, maintenance and harvest costs. If your sod operation includes installation and delivery, the costs associated with these activities should be delineated.

Labor, machinery and capital efficiency measures can be obtained from record information. Such factors as acres of sod per man, maintenance machinery cost per acre of sod maintained, harvest machinery cost per square yard of harvested

sod, machinery-labor substitution, percent return on investment and receipts per dollar invested may reveal some areas where profitable adjustments could be made. These kinds of factors are especially helpful when you have some industry standards or guidelines for comparison.

It is important to remember that business records help to diagnose the nature of the "illness" but they do not prescribe the "cure." Records provide the tool for locating inefficiencies and high cost areas, but it takes further management investigation to determine the best corrective action. Any sod producer desiring to improve his business organization and operations must start by analyzing past performance, and business records provide the tool for this analysis.

Business success hinges also on management's ability to plan ahead. Forward planning can often be strengthened by referring to what has occurred in the past. Knowledge of past business performance, available from business records, will provide a basis for budgeting future business transactions.

MEETING THE CREDIT NEED

The **credit** need which business records should fulfill has gained in importance in recent years. The increasing capital requirements and related major role of credit in the sod production business require managers to keep a close surveillance on the financial position of their operation. This phase of management is sometimes called financial management and involves using business records for preparing profit or loss, net worth and cash flow statements.

The profit or loss statement, in addition to showing the earnings of the business for a particular **period of time**, reveals the amount of cash generated by the business to repay old debt, to meet living expenses and to make new investment. This statement will provide clues concerning cost control but may not fully meet the needs for determining where inefficiencies exist within the business.

The net worth statement or balance sheet consists of assets, liabilities and net worth, and provides a picture of the financial position of the business as of a particular **point or date in time**.

Thus, the net worth statement presents a "snapshot" of the business whereas the profit or loss statement presents a "movie" of the
(continued on page 30)

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BUSINESS RECORDS

(from page 28)

business.

The net worth statement indicates the value of assets that would remain if the business was liquidated and all outside claims against it were paid.

The profit or loss statement and net worth statement provide valuable information for preparing ratios that will test the liquidity, solvency and profitability of the business. These measures are important to both borrower and lender when evaluating the acquisition of capital.

The current liabilities section of a net worth statement will show the obligations due within the next twelve months. The profit or loss statement will indicate the success of the business in generating funds to meet these obligations.

The cash flow statement shows the cash in and out of the business by specified periods of time and may be referred to as a calendar with receipts and expenses plotted on it. It includes, in addition to ordinary cash income and expenses, payment on current debts. The cash flow provides a pattern of the flow

of business transactions and it will help to avoid financial disaster resulting from poor scheduling of debt repayment.

A word of caution—if a diagnosis of your sod business suggests some adjustments, beware of the implications the adjustments might have on the business cash flow. This word of caution is especially important if the adjustments to be made involve the use of much borrowed capital.

If you agree that management has a major influence on success in the sod business, why not give it the appropriate business records to work with? When you hire employees you are expected to provide them with the tools to do the job for which they were employed. Management, likewise, must have tools to do its job, and a good set of business records is first on the list.

Review your present system of business records and, if it does not meet the three basic needs, take the necessary steps to "get with it" so that management will have the tools to perform effectively—before it's too late!

Take a look at the newly developed ASPA "Chart of Accounts" system. This may be the answer to your business record woes. Also,

check out the various record systems available through the Land Grant University in your state. These can usually be obtained through your local extension service agent.

If the manager's tool kit does not contain his potentially most valuable tool—an appropriate and well maintained business records system—the quality of the management job and the profit from his business are bound to suffer. Can any sod producer afford to be without this tool? □

Three Day Summer Meeting Set By ASPA For July

Sod producers and commercial suppliers of the sod industry will be converging upon Denver, Colorado on July 16 for the annual summer meeting and field day of the American Sod Producers Association.

The three-day event — beginning with registration on the evening of July 16 and concluding with the field demonstration of sod equipment on July 19 — is expected to attract a record attendance from within as well as outside the United States.

The host organization, the Rocky (continued on page 36)

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