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"There is no substitute for experience"
The calibration principle of fertilizer spreaders is equally demanding. The literature that accompanies the conventional type spreader with a calibration pan is more than adequate and will not be elaborated upon here.

Most manufacturers publish a chart, usually attached to the machine, which indicates an approximate setting for pounds per acre. But, because of the extreme variation in material character, moisture content and "flowability", it is impossible for the manufacturer to account for all brands of materials that might be used. A record of each calibration for every material used should be kept.

Cyclone-Type Spreaders

To calibrate a cyclone-type spreader, observe the chart for the approximate setting and speed for a similar material. To be on the safe side, you might set the machine a little lighter than recommended. Then choose an open area such as a practice fairway or rough and proceed as follows:

1. Start with the hopper level full of the desired material (fertilizer in most cases).
2. Drive exactly \( \frac{1}{2} \) of a mile (40 rods or 660 ft.) at a desired constant speed.
3. Refill the hopper, carefully measuring the amount of material required.
4. Calculate the application rate as follows:

\[
\text{No. of lbs. used} \times 66 = \text{lbs. per acre}
\]

\[
\text{Width of Coverage (ft.)}
\]

Example: If 470 lbs. of 10-6-4 fertilizer were used in \( \frac{1}{2} \) mile and the width covered by the spreader is 40 feet, multiply 470 x 66 and divide by 40. The result is 775.5 pounds per acre.

The amount of fertilizer to be applied per acre should first be decided. Then after several test runs, the adjustment of the spreader should be determined. Fertilizer does not lend itself to dilution or concentration such as in liquid spray calibration. Be sure to record the settings or adjustments of all trial runs and keep all pertinent data such as analysis of fertilizer, trade name, manufacturer and, above all, ground speed at which the tests were run. Many times it is possible to interpolate the setting of a machine when as few as three test runs are completed. By using the maximum and minimum settings along with the "in between settings" a graph can be plotted showing the pattern of the machine (straight line or curved).

St. Andrews Isn't Golf's Cradle, These People Say

The people of Royal Blackheath in England say St. Andrews isn't the cradle of golf. When King James I and his courtiers tired of stag hunting early in the 17th century, they were persuaded to open a seven-hole course on the sand ground of Blackheath Common, about eight miles from London.

The royal golfers are said to have decided their matches over three circuits — 21 holes. Hockey shape sticks and leather balls were used. King James, whose mother, Mary Queen of Scots, was a golfer (history says she stepped out and took some practice swings shortly after receiving a report that her husband, Lord Dornley, had been murdered) was pretty much of a hacker. It is suspected that his courtiers didn't count all his strokes in order to curry favor with him.

Residents of Royal Blackheath claim King James' golf club was formed in 1608, to be exact. This was 150 years before the Royal and Ancient was organized at St. Andrews. The original course at Blackheath Common disappeared in 1923, giving way to a playing field and swimming pool. The original course moved to a new site, a 17th century manor house, a few miles away. Now, Royal Blackheath has a modern 18-hole course.

Accessory Equipment

Because of the large geographic area in which manufacturers sell and the universal circumstances under which the equipment is used, there usually are a great number of accessories available to adapt a particular machine to its intended use. For example, the nozzles on the boom of most sprayers may be of the wrong gallonage for your situation. A supt. should become familiar with the spacing, angle, gallonage delivered, pressure required, and distance from the ground required, for a specific nozzle. He should become familiar with all the attachments or adapters of his other equipment such as fixed combs, floating combs, Wiley rollers, castor wheels or solid rollers as are offered with his greensmower.

The fundamental of using equipment to its best advantages should not be overlooked. This is not a recommendation to (Continue on page 94)
Curling Reduces Dead Time in Activity Calendar

It may help you to get through these warm days by thinking about a cool subject . . . Anyway, the rink season isn’t far off — if your club is considering putting in some sheets for winter play

BY LAURIE CARLSON
Founder and Past President,
American Curling Foundation

Curling is a ready made game for country clubs. The elements of competition and good fellowship bring together many of the same participants that take part in a summertime game of golf. Curling is a team sport and has an even higher standards of etiquette than golf. Since it is best played on a club or team basis the game is a natural for country clubs.

Good ice is more expensive to maintain in humid temperatures of above 40 degrees. The target area in curling is above the Mason-Dixon line. Curling can keep the otherwise inactive golfer in good condition during the winter months as many of the same muscles are used in both games. It gives husband and wife a chance to curl together in mixed curling which, by the way, is becoming more popular each year. It offers a splendid Junior program and family curling is becoming popular at Chicago area country curling clubs. Ice in many of these clubs is being used all during the day and often in two draws at night when the men or mixed players use the ice.

Why the Country Clubs?

An artificial ice or curling rink — usually four sheets or more — costs from $60,000 to $200,000. This writer has been in on installation work at a number of new curling clubs in which the cost of a two-sheet rink was about $20,000. It took some salesmanship and persuasion to promote minimum facilities at some of these clubs. In some cases they used ice equip-
The Royal Montreal Golf Club and The Royal and Ancient Golf Club in Scotland both use this mower.

Ransomes CERTES

Ransomes 16" Certes is specially designed for cutting only the very finest turf. It is used on world-famous international championship courses such as the Royal and Ancient at St. Andrews in Scotland and on fine turf in many countries of the world.

Ransomes AUTO-CERTES

This 18-inch machine is the motorised version of Certes. It too is used at St. Andrews and gives 2,000 sq. yds. of very fine cutting in 1 hour.

It has this excellent specification:

* 10-knife cylinder specially hardened for long life giving 106 cuts per yard.
* Especially thin bottom blade for very close cutting.
* Accurately machined front and land-roll to avoid damage to the finest turf.
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June, 1963
ment and the installation of plastic pipe was made by the members to cut expenses. In the case of a country club, it has borrowing power to acquire the type of curling rink desired. The lounge income in some cases equals or surpasses the cost of the ice rink. If present lounge facilities can be used, costs are cut considerably.

With all of our contacts in Canada and the United States there isn't a single case where curling has not kept the keen interest of members throughout the entire winter and added many thousands of dollars to club treasuries. Club "dead time" is effectively reduced where rinks have been put in.

Here are some examples of American country clubs that have introduced curling, according to Hugo Biersach of Pewaukee, Wis., who rounded up this information:

**Exmoor, Highland Park, Ill.** — Curling started here in 1936. Subsequently a plan was submitted to the board, with guarantees by 85 members, covering construction of a four sheet artificial ice rink at a cost of $40,000. Curling fees were $60 per single person and $470 for family. Facilities were enlarged in 1956-57 (cost $85,000). Curling is fully established as a club activity with about 350 curlers contributing to the club's restaurant and buffet facilities. Club now has over 200 mixed curlers, 125 men and 90 children with a season that begins early in November and runs until April 1.

**North Shore, Glenview, Ill.** — Curling Section: Began curling in a small way in 1951. Facilities include a concrete block and steel girder building 60 by 150; four sheets of ice with plate glass viewing section. Curling section now has 125 men and 80 women curlers. Dues of $120 per year plus tax and $150 for winter curling memberships. Curling has been financially successful from the beginning. All curling facilities were paid for a few years ahead of schedule. The club recommends curling as a financial asset to any golf club.

Here are two Canadian clubs that have made a big thing of curling:

**Mississauga, Port Credit, Ont.** — Golfing since 1905. Curling started in 1958 on 6 sheets of artificial ice. Included in the new setup are a dining room, lounge and locker facilities. Sixty to seventy golfers curled the first season. The club's directors assumed financial responsibility of the entire building. In 1959 there were 200 curlers and today there is a total of 400 men and 200 women curlers in the club. Total cost of the ice plant and lounge was $240,000. The entire mortgage will be paid off in a few years.

**Scarboro, Toronto, Ont.** — This club has a six-sheet curling rink with lounge attached to the clubhouse, all constructed at the cost of $234,000. A total curling membership of 400 men and 200 women achieved during the first year has contributed to a very successful year-around operation. The clubhouse is used more in the winter than it is in the summer. Rates are moderate: A golf member can curl for $100 per season. Mixed curling is popular, with two draws each Wednesday and Saturday nights and Sunday afternoon. About one half of the members are curlers.

Coder Taylor and Associates, architects and engineers, with offices at 2500 Green Bay Road in Kenilworth, Ill, is doing a great service to country clubs in planning curling structures that are well designed. This firm has come up with some fine drawings and plans for rinks that either are connected to the clubhouse or are away from it. Taylor is an avid curler and belongs to the North Shore club.

**USGA Junior Program**

Golf House of the USGA publishes a booklet, "A Junior Golf Program for Your Club and District." The 16-page booklet covers organization of the program and discusses age limits, instruction, conduct, playing privileges, tournaments and several other subjects. A section also is devoted to district and national programs, and the rules of amateur status are reviewed.

**PNGA Changes Tourney Site**

Pacific Northwest Golf Assn. has changed the site of its Junior Boys' Championship from Corvallis, Ore. to the Tualatan (Ore.) CC. It will be played Aug. 26-30.
PERSONNEL MANAGEMENT

It's a matter of organization to get maximum production with a minimum of lost motion

BY TERRY E. VANGORDER
General Manager, Peacock Gap G&CC, San Rafael, Calif.

Before we can master the problems of turf management, we must first master the problems of personnel management. We can't personally cut 18 greens, rake the traps, mow the tees and fairways, spray and feed 100 acres of turf and keep up with the total daily requirements of sound golf course maintenance. We must select, organize and channel the efforts of others in order to accomplish all this.

Today's highest cost factor in turf management, of course, is labor — personnel; it consumes two-thirds of our operational budget. To overcome problems of time and space within a given budget, we must organize personnel in the most effective, economical manner. We must sustain their maximum production with a minimum of lost motion. We can no longer tolerate the high cost of personnel turnover and replacement.

Purpose and Direction

The selection and organization of men may best be termed personnel management. I would like to equate it to leadership. Leadership, perhaps should be defined as the art of stimulating and directing the best efforts of men toward the realization of predetermined goals. Leadership must be motivated by purpose and direction. It can't be aimless, can't constantly change direction, and it can't survive indecision.

To lead men is not to push them. Rather, it is to pull them together in the achievement of a common end product — in our case the maintenance of a course or perhaps the profitable operation of a country club.

Leadership assumes authority and responsibility. It requires effective communication and discipline. Its functions are both administrative and operational. There are four fundamentals which underlie sound administration. These are:

1. Chain of command
2. Delegation of authority
3. Span of control
4. Homogenous assignment

Effective leadership calls for the establishment of an authoritative chain of command which defines operational orders and creates effective communication channels. Orders and direction emanate from the top. Set up functional departments necessary to achieve your mission, and write job descriptions which pinpoint responsibility and prevent overlapping of authority.

Delegation of Authority

Authority and responsibility are inseparable. When you charge a man with the responsibility of a given job assignment, you must give him adequate authority to handle it. For example, if he is to be responsible for the supervision of men, give him power to hire and fire those men. Authorize him to make necessary decisions.

Lack of delegation of authority is too often the cause of failure in personnel management.

Can't Delegate Responsibility

As a leader you are responsible for every action and inaction of those who work under you. You cannot delegate this overall responsibility. However, you can and must hold your men responsible for
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work assigned to them.
You should charge your employees with a maximum of responsibility — commensurate with their capacity.
Failure in personnel management can be caused by the fact that men are not worked to their full mental and physical capacity. The result is boredom, inefficiency and discontent.

Span of Control
You must realize the limits of your men's capacity for work. A healthy situation dictates that they should always be assigned a little more than they can actually accomplish. Such an assignment, if reasonable, will stimulate their best efforts and will create the most efficient operation for your purpose of achieving pre-determined goals.
Reasonable assignment introduces the administrative problem known as span of control.
How much can one man effectively accomplish, how many jobs can he supervise, how many men can he control — or how many greens can he cut? What is his optimum span of control? Experience and common sense help determine this. Your organization chain of command must define a span of control through the creation of various departments and sub-divisions thereof.

Homogeneous Assignment
The fourth principle of administration concerns homogeneous assignment. This simply means the grouping of men for similar assignments. Economize production by placing trained personnel on projects demanding their own professional qualifications. Keep the greenmen on the greens — the gardeners in the garden and the cooks in the kitchen. Train your men for specific jobs and don't pull them for work which is definitely beyond their means, thus causing waste and inefficiency.

Having listed four principles of personnel administration, let's discuss management. What are the qualities of leadership? Who is the manager at the top of the chain of command?

Capacity for Making Decisions
He should possess common sense and have the capacity for making decisions — administrative, operational, financial and policy. Besides, he must realize that his every decision somehow reflects upon every man down the chain of command.

Without policy decisions there is no direction.
Without administrative decisions there is no control.
Without operational decisions there is no action.

Without sound financial decisions there will not be the means to carry on. The man in charge must represent authority and should radiate authority. Not only must he be able to convey orders in such a manner as to produce the desired results, he must be able to receive orders. He should master the art of communication. A successful leader must sustain an effective system of discipline.

Two-Way Respect
A true leader naturally commands the respect of his subordinates as well as his superiors. He commands the respect of his men primarily because he respects them as individuals. Because of this respect, he maintains a natural system of discipline through a discretionary balance of praise and criticism — praising in public, criticizing in private.
A respected leader possesses professional knowledge, and displays such when necessary. He provides his men with continuous education and on-the-job training.
A successful leader knows the meaning of loyalty. He realizes it is a two-way street. He stands behind his men even when they are in trouble, as he expects them to stand behind him, especially when he is in trouble. He must have confidence in himself, and he must generate this same confidence through all of his men. He knows the meaning of pride and integrity. He hires only men of integrity, and he instills them with an appreciation of pride.
The leader is the conservative force that tempers and holds the crew together. He must take a sincere interest in the personal as well as the professional problems of his men. He must provide for their welfare and morale. A sense of humor is often the key to survival. Success means choosing the right men for the right job.
Chain of command, delegation of authority, span of control, homogeneous assignment . . . Patience, loyalty, integrity, authority, confidence and initiative — these may seem mere words, but they are the essence of real leadership. These are the techniques and the qualities that tame cat-skinner and laborers.

(Continued on page 92)