



Chandler Arizona Parks Department

Chandler, Arizona



Chandler Arizona selected Primavera bermudagrass for all fifteen of the new soccer fields they seeded in 1994 and 1995. In addition, they are using Primavera on all the city parks and grounds.

According to Kris Kircher, maintenance coordinator, they have used common bermudagrass before but had problems with allergic reactions among the players. Then they tried Mid-iron bermudagrass but it was very susceptible to pearl scale. The third variety they tested was Primavera. Kris was really impressed with its quick germination and establishment. It stayed greener longer in the fall and greened-up earlier in the spring than any of the other seeded types they tested. Primavera also was resistant to pearl scale, so their problems were solved.

Kris, and his crew of four, were able to convert old cattle corrals to excellent quality soccer fields. The San Tan Soccer Association plays on the fields nine months out of the year, and with the use by other groups, there are soccer games almost every day of the week throughout the entire season. The quality of the playing surface is excellent throughout the year. The number of injuries and loss of players have been greatly reduced with the dense turf they are able to produce with Primavera. It has been stated by numerous authorities that Chandler has the best soccer fields in the Phoenix area.

The work done by Kris and his crew is impressive, especially when one realizes that it was done on a minimum budget.

“Primavera is a high quality, lower cost alternative to the standard turf varieties sold only in sod or stolon forms.” *Kris Kircher, Maintenance Coordinator*

SEED RESEARCH
OF OREGON, INC.

Professional Turf Center—Dallas, Texas
(214) 905-1020 • In TX (800) 590-4333

architect's demand for better field systems, have developed new parameters for all-weather field design. Research moguls from major companies and from such research-based institutes as the International Sports Turf Research Institute located here in the States and the Sports Turf Research Institute (STRI) in England continue to develop and qualify new products for field construction to enhance the soil profile, providing such benefits as compaction relief, increased infiltration, and stabilization.

Sports field drainage and sub-surface moisture control systems give sports turf managers the ability to clear excess water from the playing surface and the ability to maintain optimum moisture levels in the root-zone. Some systems combine these features with the ability to control macro- and micro-porosity of the soil, allowing for compaction resistance, aeration and the escape of sub-surface gases released by root systems.

Other systems provide subsurface heating to allow sports turf managers to extend the active growth period of

their turf.

Soil profiles can be specified with precise components of sand particle size distributions and organic or synthetic matter to create the base deemed most suitable for turf establishment and growth in specific field settings. The term "engineered turf" will have greater meaning now that fields have to be designed to withstand multiple events in all weather.

Plant scientists from turf seed companies, universities, and research laboratories have developed improved turfgrass cultivars keyed to withstanding the stress and wear inherent with athletic fields.

Natural turf in self-contained,



In older facilities like Foxboro Stadium, steep, narrow accesses have contributed to compaction and erosion problems. Photos courtesy: Steve Guise.

removable trays or as reinforced squares of turf offer a method of providing a natural turf playing surface in stadium conditions that might not naturally support long-term turf growth. It also offers the option of replacing

Yes, Bannerman diamond groomers are changing a lot of ballparks-- and what a difference it makes. Better games, better players, and less injuries.



And another thing, you can really cash in on the home team advantage when you're playing at home. It only takes one person with a 18 h.p. tractor or higher to do a topnotch job. When your diamonds are groomed regularly with a good groomer they stay in better shape. And if you do need some renovation and re-shaping the Bannerman groomer can do everything you need.

TOLL-FREE
CAN 1-800-325-4871



TOLL-FREE
USA 1-800-665-2696

41 Kelfield Street, Rexdale, Ontario Canada M9W 5A3 • Telephone 416-247-7875 • Fax 416-247-6540

selected modular units with "fresh" ones in response to heavy wear or other turf-damaging factors.

Stadiums designed with movable roof systems can combine turf access to natural sunlight, while the roof system is open, with the spectator and player comfort of a covered dome when the roof system is closed. Refinements of the technical aspects of such systems are combined with turfgrass research and testing of suitable cultivars to improve efficiency and overall field conditions.

These advances allow stadiums greater multi-use flexibility and the ability to hold more frequent events.

New Instruments

Keeping pace with turf systems have been advancements in instruments for measuring field conditions.

Laboratory testing of the various field media components can ensure consistency of the media materials during the construction process.

Soil and tissue test analysis can pinpoint nutrient uptake and levels within turfgrasses to allow develop-

ment of fertility programs tailored to specific, quantified turf needs.

On-site readings of specific turf and soil profile conditions are available through such instruments as fertility and pH meters, light meters, stimpeters, flowmeters, and infiltrometers.

The Clegg Impact Hammer has been selected by the American Society of Testing Materials (ASTM) as a lightweight apparatus for measuring a field's hardness. This gives sports turf managers a system to quantify hardness and to measure degrees of improvement from field renovations and various field maintenance procedures. It additionally aids the sports turf man-



The Sports Turf Research Institute in Bingley, England, continues to develop beneficial products, such as this wear machine.

ager in identifying when a synthetic field has lost its cushioning ability and needs to be replaced.

Turf strength can be measured with Penn State's PennFoot, University of California at Riverside's Brinkman Traffic Simulator or STRI's wear



Out front cutting with baskets for clippings.



Attractive striping shows-off playing field.

Great Sports Striping At Superb Prices

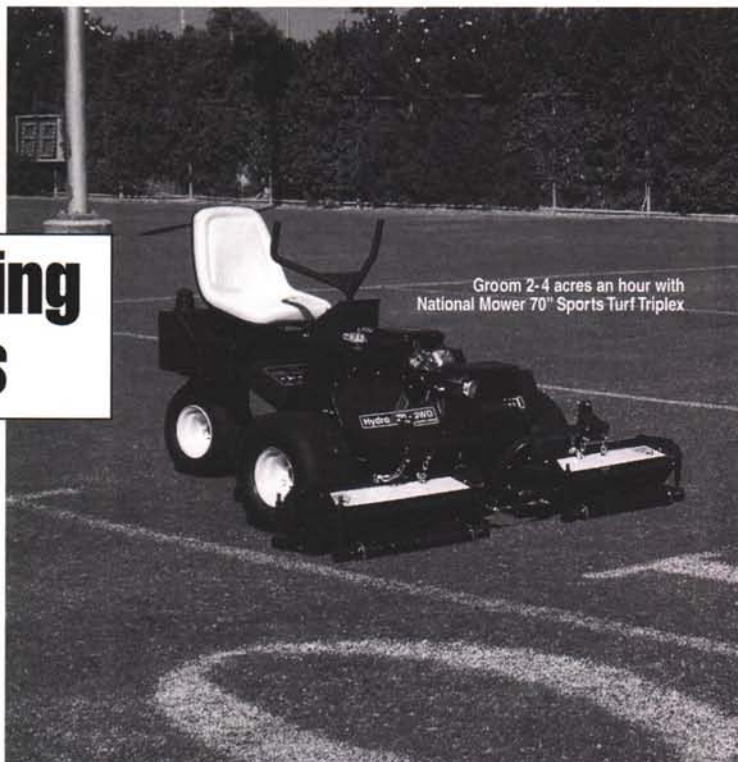
- Light on your wallet - low initial cost and long life
- Great striping from the shearing reel cut of a National
- Smooth, clean cutting builds hardier, healthier turf
- Easier to sharpen and lower operating cost
- Easier to maintain than rotary riding mower
- Easy rear turning wheel for high maneuverability

For details call: (612) 646-4079



NATIONAL MOWER COMPANY

700 Raymond Avenue
St. Paul, Minnesota 55114
TEL (612) 646-4079
FAX (612) 646-2887



Groom 2-4 acres an hour with National Mower 70" Sports Turf Triplex.

NATIONAL® is a Registered Trademark of National Mower Company

Nothing makes sports turf look better than a National. The Best Price. The Best Cutting.

Call 1 (800) 817-1889 use **Fast Fax # 1150597**
and/or Circle **115** on Postage Free Card



On-site readings of specific soil conditions are available through instruments such as Texas A & M's infiltrometer.

machine, or with simple traction veins and torque wrenches.

Weather stations collect local condition readings to supply ET (evapotranspiration) information. Satellite systems monitor weather patterns and allow precise tracking of local storm systems. All this information now can be tied directly to an in-office comput-

The architect, field designer and facility owner have developed a set of stadium and field components with a specific intent. The installation contractor concentrated on that vision during field preparations. So, it makes sense that sports turf managers are often being hired at the start of con-

struction, and sometimes at the start of the design process, to assist in the identification of maintenance issues and needs assessment.

Realities of

Maintenance

A key element of the high tech systems integrated into today's field designs is using them properly. Why build a multi-million-dollar facility for multi-million-dollar athletes and skimp on the investment in long-term maintenance?

er system for event preparations.

Part of today's field installation contracts is a grow-in and initial maintenance period. This may be 90 to 180 days, or even longer, depending on the circumstances of construction and the primary, or initial high-visibility, use of the facility. During this period, the contractor and/or the appointed maintenance company check out all the operational elements of the systems. The field is only accepted by the owner when all systems are functioning properly.

Owners may hire sports turf managers already familiar with the facility's high tech systems, or they may provide the appropriate instruction or educational opportunities for the sports turf manager to gain a thorough understanding of the systems. Or, they may opt to go outside the traditional in-house maintenance crew in search of maintenance companies that offer better equipment, reduced costs and overhead, volume purchase discounts,

EVERGREEN

THE PROVEN TURF GROWTH BLANKET

- Earlier spring green-up
- Faster seed germination
- Deeper root development
- Delays dormancy in fall
- Ideal winter blanket
- Best for quick turf repairs
- Available in any size
- Longest lasting - 7 year warranty

 CALL TOLL FREE 1-800-387-5808 FOR SAMPLES AND LITERATURE

COVERMASTER
COVERMASTER
COVERMASTER
 MASTERS IN THE ART OF SPORTS SURFACE COVERS



COVERMASTER INC., 100 WESTMORE DR., 11-D, REXDALE, ON, M9V 5C3 TEL 416-745-1811 FAX 416-74-COVER (742-6837)

Circle 116 on Postage Free Card

or other advantages.

Whatever the decision, the person in control of maintaining a field must be familiar with all aspects of the high tech systems to utilize them properly. Ideally, that person is involved at least during the construction phase of the project so he or she has the opportunity to see where each component is installed, to observe how certain elements fit together, and to participate in the initial stages of set-up and adjustment. This person then can develop an accurate "as built" blueprint of the facility complete with notations that will assist crews in long-term maintenance.

At the very least, the person who will be in charge of long-term maintenance should be involved during the grow-in and post-construction maintenance period. Working with the systems and the construction personnel during this time of testing, adjustment and fine-tuning provides the sports turf manager the opportunity not only to gain in-depth knowledge of the systems and their capabilities, but also to gain an awareness of the "vision" which the systems are to carry out.

In reality, over the multiple years during which the facility will be in operation, more dollars will be spent on long-term maintenance than were invested in the development and construction phases. It's just common sense to make sure that maintenance takes full advantage of the high tech systems that were installed.

With all the technology now available and the new advances being introduced, field design is becoming a science we can rely on to produce a successful stadium, field system and maintenance program that fit together and work together from the time of design to the time the final mowing patterns are completed.

Stephen H. Guise — sports turf manager for Valley Crest Inc. in Calabasas, California — is an elected member of STMA's Technical Review Committee, is the president-elect of STMA, and separately contributes to the ASTM Committee on Natural Turf and Artificial Playing Surfaces (F.08.52).

Dave Hanson is a certified professional agronomist and vice-president of Environmental Care Inc. in San Jose, California, where he serves as manager of technical support for lawn and landscape operations and special projects and as regional manager for Northern California operations.

Diamond Pro Infield Conditioner.



Diamond Pro has teamed up with Rosenblatt Stadium, home of the College World Series and the Omaha Royals.

Diamond Pro Professional Groundskeeping Products have been chosen by many professional teams, schools and municipalities across the nation. We monitor every step of the manufacturing process to ensure that our products have the long-lasting quality you require for a playing field.

Try our entire line of Diamond Pro Professional Groundskeeping Products: Infield Conditioner, Mound/Home Plate Clay, Marking Dust and Pro-Lite. For convenience and savings, our Infield Conditioner can be purchased in bulk!

New, in time for the baseball season!

Diamond Pro's Infield Conditioner and Mound/Home Plate Clay are packaged in durable, weather resistant polyethylene bags.



1-800-228-2987, Fax 1-800-640-6735

Earthen Technologies, 1341 West Mockingbird Lane
Dallas, Texas 75247, <http://www.earthentech.com>

Call 1(800) 817-1889 use **Fast Fax # 1170597**
and/or Circle 117 on Postage Free Card

Q: Want to be outstanding in your field?

A: Thomas Bros. Grass... Excellence in turfgrass for over a quarter century.

For the location nearest you call
Toll Free 888- NEW GRASS
6 3 9 4 7 2 7
www.thomasbros.com

Call 1(800) 817-1889 use **Fast Fax # 1170597**
and/or Circle 118 on Postage Free Card

May 1997 25



With the temperature below 10 degrees, the crew started laying sod minutes after the first heated trucks of sod arrived from Maryland. Photos courtesy: Jack Kidwell.

Sod & Squad Work Miracle at Lambeau Field

By Jerry May

A phone call at half time of a cold, rainy NFL playoff game last January set off a chain reaction that grabbed the attention of practically every pro football fan in the country for the next eight days.

An NFL representative and the Green Bay Packers grounds supervisor called to ask Jack Kidwell, a Virginia sod grower and installer, if he could completely refurbish and resod Lambeau Field over the next week in time for the NFC championship game on Sunday, January 12.

"My stomach turned about six times when I heard the question," says Kidwell, of Duraturf Service Corporation in Richmond. "First, I was out of bluegrass, and so were all the other Virginia growers I know. But I was sure I knew where some high quality turf was available, so I said yes. Looking back, I guess all and all we pulled off a small miracle."

The NFL knows Kidwell well and probably knew they would be in good hands. Kidwell's firms have had the NFL's nod to sod the Redskin's RFK Stadium for the last 15 years. In December, Duraturf repaired Pro Player Park (formerly Joe Robbie Stadium) in Miami. It also repaired

the center of Lambeau for the Packers-Minnesota game in December. The repair held great, but when the Packers and 49ers met in a rain storm on January 4, they turned the rest of the field into a pigpen.

By late that Sunday afternoon, the contract details with the NFL had been hashed out by phone and fax. And so the saga that was picked up by scores of newspapers and television stations from coast to coast began. For a solid week, Duraturf managers, harvest crew, installation people, and more than two dozen truck drivers and their 18-wheelers would be totally immersed in a time-sensitive, difficult job made even harder by extreme winter conditions of the far north. If anything of consequence went awry, the whole project could end in disaster.

A Critical Path

Kidwell and his managers spent Sunday night lay-

ing out a critical path chart, contacting employees and giving them their assignments for Monday morning.

As in many states, Wisconsin's Department of Agriculture restricts the importation of living flora that hasn't been given a clean bill of health. Japanese beetles are the main villains Wisconsin wants to keep out. Kidwell started the time-consuming approval process; the sod was certified for entry at the last minute.

The sod that would ultimately find



Finishing up the job in a driving snow storm, workers move a tarp in as the last strip of sod is pulled up and rolled.

continued on page 28

HTTP://WWW.AIP.COM

Plug

COMPREHENSIVE LINKS TO INDUSTRY WEBSITES

ASSOCIATION INFORMATION

LIVE MODERATED DISCUSSION FORUMS

REFERENCE MATERIALS

GREEN-NET "YELLOW PAGES"

EXCLUSIVE EDITORIAL

EDITORIAL ARCHIVES

**The Green
Industry's
Comprehensive
Website**

GREEN NET

<http://www.aip.com>



When workers discovered low areas after stripping the old sod, sand was brought in (background left) and spread evenly before the new sod was laid.



By late Wednesday night, two-thirds of the field was sodded, but a snow storm was yet to come. Frost areas on the perimeter show the failure of the warming cables.

its way to Lambeau Field came from a grower in Maryland. Kidwell says, "I knew Summit Hall grew high quality bluegrass and had plenty to spare."

At 5:30 Monday morning, harvesters and other equipment set out from southern Virginia for Maryland followed by loads of tubes and pallets. Just three hours later, Duraturf had

confirmations for 28 heated tractor-trailers to transport 600 tons of sod nonstop to Green Bay, 1,000 miles away.

"Installers who do important, time-sensitive jobs have to be sure of transport. We've developed a relationship over the years with a handful of select trucking firms. We know we can rely

on them and vice versa. I couldn't have said yes to the Lambeau project otherwise," Kidwell says.

At 8 Monday night, barely 24 hours after the NFL's call, the first three truck loads of roll sod set out for Green Bay. Kidwell himself took off for Green Bay minutes later.

TURF INSTALLATIONS



INSTALLED CLEVELAND INDIANS IN 42" AND 48" ROLLS



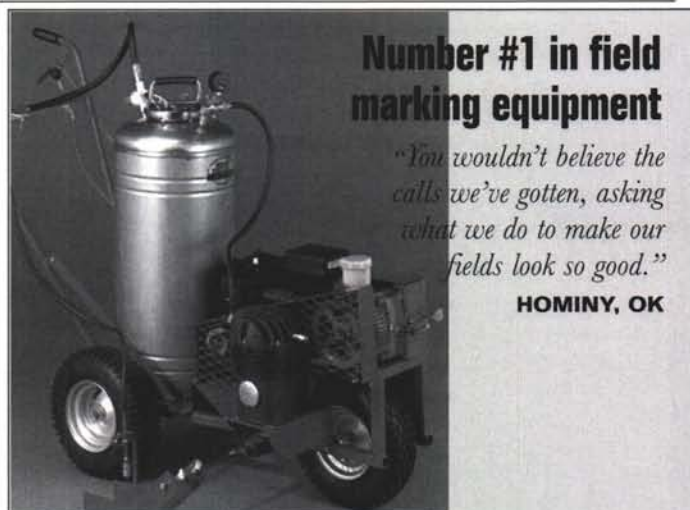
STRIPPED JACOBS FIELD CLEVELAND INDIANS

Who do the professionals call when they need a field repaired or a new installation? More often than not **CYGNET TURF**. Our customer list reads like a "WHO'S WHO" of the sports industry. For fewer, tighter seams, stability and performance, when you are ready to install give **CYGNET** a call. You can use our quality sand-based sportsturf (bluegrass or bermuda) or yours.



Phone: (419) 354-1112
Farm: (419) 655-2020
Fax: (419) 352-1244

Call 1(800) 817-1889 use **Fast Fax # 1200597**
and/or Circle 120 on Postage Free Card



Number #1 in field marking equipment

"You wouldn't believe the calls we've gotten, asking what we do to make our fields look so good."

HOMINY, OK

Outstanding features:

- 36 years of service
- Stainless steel tanks, heavy-duty welded frames
- Large pneumatic wheels
- Same-day order processing
- Equipment & parts in stock

Manufactured by
Laurie Carlson & Assoc., LTD
P.O. Box 35, Waunakee, WI 53597
(608) 849-4770 or 849-5166

Call 1-800-844-5002



Circle 121 on Postage Free Card

Ghosts and Gremlins

Lambeau boasts glorious ghosts, but also lays claim to a nightmare — a nonexistent drainage system. Thus the quagmire the Packers and 49ers stirred up the Saturday of the fateful phone call.

Before new turf could go down, the old sloppy turf had to be stripped off, loaded and hauled away. That job was half done by Tuesday evening. The surface was then leveled and prepared to accept the new sod. The first trucks from Maryland were scheduled to arrive early Wednesday. Ten o'clock came, but no trucks. The NFL contact on-site reported that the New York office was alarmed that the field was being stripped while there was no new sod to replace it.

Weather-delayed trucks finally began arriving at noon one after one, and the shipper confirmed by satellite that six more loads were nearby. The first glitch — but panic was averted.

Duraturf began installing the new bluegrass immediately. With the temperature between 2 and 8 degrees and wind chill well below zero, cables and fuel lines froze. Other temporary equipment failures added to tensions. Work continued through Wednesday and into Thursday. The goal was to have the entire playing surface resodded by 6 Thursday evening. But at 6 that morning, half an inch of snow had fallen, and the weather was getting worse. Because of the lack of drainage, the new sod had to be kept dry. As installation proceeded, massive tarps were extended to protect the part just laid. Moving in the big tarps caused more delays, but with a major snow storm in progress, they were essential to the success of the project.

Forty years of experience has taught Kidwell that good sod properly installed would not budge and would provide outstanding footing for the players. Also, the new sod was cut extra thick, 1 5/8 inches, to withstand the Packers-Panthers onslaught.

Perfect installation was imperative. Installing machines unrolled the sod as close as physically possible to the last row laid. Then to ensure a nearly seamless field, 8 to 10 workers lined up, impaled the newest row with sod hooks and on cue — "Ready? Pull!" — tugged a 3- to 4-foot section to virtually bond it to the neighboring row.

It took plenty of muscle but only minutes to "pull up" a 3,000-pound 50-foot sod strip. By dark Thursday, in a

driving snow storm, the playing surface was entirely installed and resting under the tarps.

"At this point, we knew we had the job licked," says Kidwell.

Class Act

Friday morning dawned and it was obviously still January in northern Wisconsin. Before the tarps could be removed to continue work, snow and ice had to be swept off with tractor

brooms and small trucks rigged with rubber blades. After 40 men peeled off the tarp, clean-up crews scoured the playing surface, removing any debris such as dirt left by the roller wheels when the sod was rolled out. Then end zones and out-of-bounds areas were sodded while the field was being lined.

For a few days, sod had become the most famous ground cover in the country. Kidwell says, "The Packers' own-

Q: What do all of these teams have in common?

Oakland A's
 Phoenix Cardinals
 San Diego Chargers
 Los Angeles Dodgers
 University of Texas Longhorns
 California Angels
 San Francisco 49'ers
 San Diego State University Aztecs
 Arizona State University Sun Devils
 San Francisco Giants
 San Diego Padres
 University of Southern California Trojans
 Oakland Raiders

A: They are at "HOME" on West Coast Turf!

**WEST COAST
 TURF**

GROWERS AND
 INSTALLERS OF
 PREMIUM QUALITY
 SOD AND STOLONS

P.O. Box 4563, Palm Desert, CA 92261 (800) 447-1840

ers, which is everyone in Green Bay, made it a story that everyone grabbed onto. Their support and interest were awesome."

That is confirmed by the story of the club selling over 27,000 patches of the old sod for \$10 each in just three hours. The proceeds went to charity. "It goes to prove what a class act Green Bay is," says Kidwell.

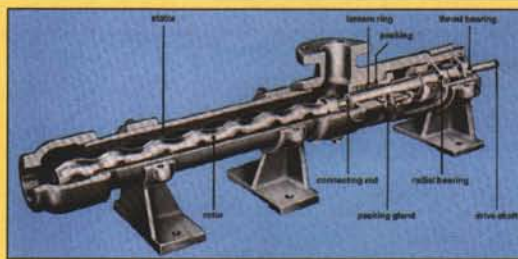
After the NFC championship game, much of the new surface installed during those frantic, frigid days was also stripped, cut and sold to fans. That sale brought in another \$200,000, which will go toward reconstruction of Lambeau's surface. This spring, Lambeau will leap into the 21st century with a state-of-the-art field: drainage, heating tubes and a surface of SportGrass, a combination artificial-natural turf system used in Baltimore that has drawn favorable reviews from NFL players. Kidwell began growing SportGrass last fall, some of which may be destined for Lambeau. It looks like the "sod squad," as the local press dubbed the Virginia crew, may strike again.

Pump for Sprigging

Hydro-stolonization, or "hydro-sprigging," is a method of vegetating prepared soil by applying cut stolons of Bermuda or other warm climate grasses. These "live" stolons or sprigs are combined with water, mulch and fertilizer, then sprayed onto the site. Standard centrifugal pumps are not appropriate for live stolons. The tight clearance at the impeller and wear plate can crush the delicate grass plants.

A progressive cavity pump, or "P.C. pump," is ideal for sprigging. The P.C. pump is made up of a long pump housing containing a rotor and stator that creates pressure, moving a high volume of slurry without risk of damage to the plant. The pump is effective with hoses of 1,000 feet or more.

Since sprigs are very vulnerable, they require the protection of mulch



A P.C. pump consists of a long pump housing containing a rotor and stator that can spray stolons without damaging the plants. Photo courtesy: Finn Corporation.

along with plenty of moisture to survive. For best results, the stolons should be planted immediately after harvesting and be kept cool and moist until application. A strict watering program must be followed after planting, never allowing the stolons to dry out.

The above is reprinted with permission from the Spring 1996 issue of Finn Info, Finn Corporation, Fairfield, Ohio.

Well Groomed



The Cushman® Groom Master is driven to keep sports fields and other recreational turf areas looking great. It comes standard with a rear rake for grooming and offers a variety of accessories so you can use the Groom Master to cultivate, scarify, level, fan and smooth the soil. For the best on-field performance, get the Master. The Cushman Groom Master. Call 1-800-228-4444 for the dealer nearest you.



**RANSOMES
CUSHMAN
RYAN**
For The Best Results

4644 Ransomes Corporation
900 North 21st Street, Lincoln, NE 68501-2409
© Ransomes Corporation 1996. All rights reserved.

Jaydee Drive Liner



The Jaydee Drive Liner is a self-propelled riding line marker. The 35-gallon paint tank carries enough marking material for a complete game field, or several practice fields. The 2-gallon flush tank cleans the discharge lines for work breaks, travel, or overnight. The center or side-mark spray shields are always operator-visible. A nearly zero turning radius reduces or eliminates back-and-turn maneuvers.

Jaydee Equipment Company

202 East Joliet Highway, Box 278
New Lenox, IL 60451-0278

800-443-3268

Circle 124 on Postage Free Card