

FREE Information

sportsTurf

→ Fill out this card & MAIL or FAX it to 856-786-4415

FREE PRODUCT INFORMATION

Please forward more information about the following products.

Check one:A ☐ Current NeedB ☐ Future NeedC ☐ Have Sales Rep Call

101	110	119	128	137	146	155	164	173	182	191	200
102	111	120	129	138	147	156	165	174	183	192	201
103	112	121	130	139	148	157	166	175	184	193	202
104	113	122	131	140	149	158	167	176	185	194	203
105	114	123	132	141	150	159	168	177	186	195	204
106	115	124	133	142	151	160	169	178	187	196	205
107	116	125	134	143	152	161	170	179	188	197	206
108	117	126	135	144	153	162	171	180	189	198	207
109	118	127	136	145	154	163	172	181	190	199	208

Visit our Web site at www.greenindustry.com/service<http://www.heftree.com>

Marvin Pruners & Saws
<http://www.pruner.com>

<http://www.transamerica.com><http://www.vermeer.com><http://www.wechapps.com>

Irrigation Station

<http://www.irrigationstation.com><http://www.planthealthcare.com><http://www.westcoastturf.com><http://www.rotarycorp.com><http://www.weathermatic.com>



Modular turf evolves to the next level

Michigan State University will be first to grow turf from seed instead of installing sod in modules when it installs modular turf in Spartan Stadium next summer

In the beginning there was sports turf. It was the first and best sports field surface. Then came indoor stadiums and synthetic fields. Sports facility managers searched for a way to combine the best of modern stadiums with the benefits of real turf. Then came modular turf that allowed a natural turf surface to be installed in most any stadium.

Trey Rogers, Ph.D., and the staff of the Robert W. Hancock Turf Research Station at Michigan State University (MSU) have been involved with modular turf since its beginning. Rogers, professor of turf management at Michigan State, was part of the team that installed the first high-profile modular turf field for the men's World Cup Soccer matches at the Pontiac Silverdome in 1993.

World Cup rules specify that all matches must be played on real grass. Using modular turf to install grass inside a domed stadium allowed Detroit to win a bid for a World Cup match that it would otherwise have lost, making history in the process.

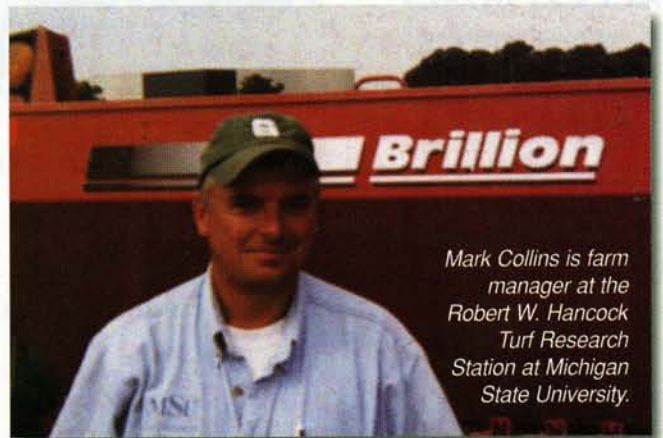
Modular turf offers many advantages:

- **Transportability.** Modular turf can be moved in and out of any venue, in part or whole. Facilities can now function with a turf field and hard surface floor, as needed for different events. This allows for more event days per year and supports multipurpose uses that would damage a traditional turf field.
- **Turf replacement.** Modules containing worn or damaged turf can be removed and replaced with ones containing mature turf ready for play.
- **Re-sodding cost savings.** Worn turf is removed, nurtured back to health, and replaced rather than discarded.
- **Mature sod ready for play at installation.** Modular turf systems can be prepared before a facility is finished. When construction is complete, mature turf is installed, ready for play immediately.
- **Quick conversion to natural turf.** Modular turf can be laid directly on a synthetic sports surface allowing for a fast conversion to natural turf.

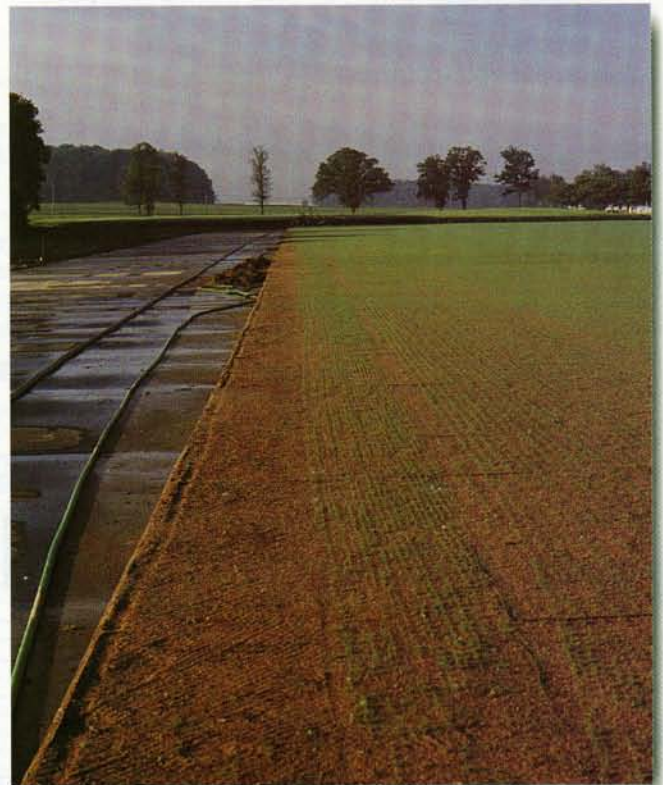
While modular turf has been a dream for decades, it became a reality in 1993.

"For those of us involved, it changed our lives forever. We did something that had never been done before. We pioneered something that will become the standard," says Rogers. "Moving turf in and out of a stadium will be common in 10 years or so."

Now, Rogers and Mark Collins, farm manager at the Hancock turf station, are taking this high-tech sports turf management system to another level as part of a team working on a new modular turf system for Spartan Stadium, where MSU plays Big 10 football.



Mark Collins is farm manager at the Robert W. Hancock Turf Research Station at Michigan State University.



Mark Collins seeded the modular turf using two passes with the Brillion seeder at 90 degrees to each other. Broadcast seeders were used to fill in near the field edges where equipment could not drive. "We could really see the difference between seeding with the Brillion seeder and broadcast," says Collins. "The seeding planted with the Brillion seeder popped up about a week ahead of expectations."



Modules are 46 in. square with channels 22 in. apart on all four sides. These channels can be sealed to create a ventilation system that can draw air down through the turf, provide oxygen to the root zone and provide drainage for irrigation and removal of carbon dioxide.

The new modular field will be the first to be seeded instead of sodded. In all previous modular turf installa-

tions, the field was constructed and used for a sporting event in the same year, making sod the first choice

because it would provide a playable surface faster.

The staff at MSU's nationally recognized turfgrass management program have had the luxury of planning 2 years in advance. The modular turf system is being constructed and seeded this year and will be installed in 2002, in time for the first football game in September.

"Seeding is the number one choice. You get the turf you prefer and establish it the way you want," says John Hilson, project manager, Clark Companies, Delhi, N.Y., a construction company that has worked on every modular turf installation in the United States.

Hilson notes that seeded modules will not have soil layering issues that are common to sod placed on top of soil in the modules. By seeding the turf into the modules, this troublesome management issue is removed from the equation.

Since seeding into modules is new, Collins and his team had to determine the best approach. First, there

AERA-vator®

The multi-purpose tool versatile enough for all sports fields



AE-40E



AE-60



"This is the only multi-faceted aerator on the market today for sports fields. It can fracture the hardest clay and the most compacted turf with ease and leave the surface in near game-ready condition. It's a winner for the progressive groundskeeper." **Floyd Perry**, Grounds Maintenance Services.

First Products, Inc

Email: sales@1stproducts.com

1-800-363-8780

www.1stproducts.com

Circle 110 on Inquiry Card.



Channels in the base of modules run the length and width of the installation. These channels can be sealed to provide a ventilation and irrigation network.



GreenTech ITM modules have channels 22 in. apart on all four sides. The channels allow modules filled with growing turf to be moved via forklift. They also create a drainage network. Irrigation water quickly drains through holes in the bottom of each module to prevent saturation.

the issue of seeding accurately into a 90 percent sand and 10 percent silt and clay root zone. To solve that, the team chose the Brillion Turfmaker II seeder.

"We have worked with Brillion seeders at the research station for years. They are known for accurate seed metering and for creating a quality seed bed," says Collins. "We were very confident that we would get a high quality stand."

Second, there was the challenge of getting seeding equipment onto and off of the modules, which are 12 inches tall when installed. To solve this problem, the team built ramps that allowed equipment to drive safely on and off the modules.

The first time the John Deere 5200 tractor and the pull-type 12-foot Brillion seeder were driven on the modules, the weight was too much, sinking the equipment into the sandy

soil. A switch to low-pressure turf tires on the tractor and a smaller 6-ft., three-point-hitch-mounted Turfmaker Junior seeder allowed the equipment to stay on the surface.

In addition, the unusually wet weather complicated the schedule, delaying the seeding date 2 weeks to May 25, nearly a month later than optimum turf seeding time in central Michigan. On seeding day, the weather was overcast and cool, and a fine rain started to fall just as seeding began. After three hours, the process was completed successfully.

"The seeder worked great in the sandy soil," says Collins. "We got excellent seed-to-soil contact which shortened our germination time dramatically. Seeding in the grooves from the seeder popped right up in 10 days."

Collins seeded 93,000 sq. ft. at a rate of 1.3 pounds per 1,000. The Brillion seeder made two passes at 90 degrees to each other and broadcast seeders were used to fill in near the otherwise unreachable field edges.

KY bluegrass planted

"We studied all our options to death," Rogers says. "In our situation Kentucky bluegrass is the best choice." Color, cool tolerance, durability, and texture are important attributes of Kentucky bluegrass, but most important was rhizomatous growth to respond to traffic and abuse.

The two primary reasons for using nine varieties of Kentucky bluegrass were, 1) the diversity allows the turf to better cope with any pests or environmental challenges and, 2) the turfgrass group works with many seed companies and wanted to include as many different varieties as possible.

It's no surprise that an experienced team tackled this project given the new elements of seeding instead of sodding the modular turf. Rogers worked with Hilson and the Clark Companies in the Silverdome in 1993, and they are using GreenTech ITM modules. GreenTech designed and supplied modules for Millennium soccer stadium in Cardiff, Wales; the New York Giants football and New York/New Jersey MetroStars soccer fields in the Meadowlands, NJ; and just announced it is installing its system in Lane Stadium at Virginia Tech for the upcoming football season.

"Our system allows you to transport turf in a self-contained living environment," says Chris Scott, chief executive officer of GreenTech, Inc., Richmond, VA. "Our modules look like a combination flower pot and warehouse pallet."

The GreenTech modules are plastic, measure 46 in. square and have channels every 22 in. on all four sides. Modules are installed on a blacktop surface with a 1-percent grade from field center to the sidelines. The channels allow modules to be moved by forklift but they have another purpose.

The modular turf system at MSU was seeded with a Brillion TurfMaker Junior, 6-ft., three-point-hitch-mounted seeder. The Brillion seeder is known for precise seed metering and overall durability. Nine varieties of Kentucky bluegrass were seeded in four passes with a total seeding rate of 1.3 pounds of seed per 1,000 sq. ft.

When a modular field is installed, the channels provide a crosshatch

network of air ducts beneath the growing medium. One obvious benefit of the duct network is to drain water away. Irrigation water filters through modules, into the ducts and off the field without any backup or saturation.

This network also can be sealed and used to circulate air under the turf.

"I can move air through the root zone using one blower in one corner of the field," says Hilson. "This system seals well enough to give me uniform pressure and uniform flow throughout."

He says using air for heating and cooling is more uniform than radiant heat. By controlling the turf temperature, the growing season can be extended indefinitely. The air ducts also provide the opportunity to remove carbon dioxide from the root zone to promote better growth. The system allows for supplemental oxygen or soil treatments like fumigants or vapor fertilizers to be applied to the field.

Thanks to favorable weather and fast germination, the modular turf installation at MSU shows an excellent stand. The turf will be maintained at 1.25 to 1.5 inches throughout the growing season. Installation at Spartan Stadium is planned for June 2002 for which sportsTURF will provide a detailed report.

Richard Dunn from Charleston/Orwig, Inc., provided this story; they represent Brillion Farm Equipment.

Call
Chris Dziubla
for Classified Rates and
Information
(630) 295-9617

Why the Switch?

Why are baseball parks around the league switching to Pro Mound® packing clay?

For all-star performance on the pitcher's mound...and in the batter's box!

For the best performance on the mound and in the batter's box, you can't beat Pro Mound. A unique blue gumbo packing clay, Pro Mound bonds to form a solid subsurface that allows players to dig in and establish footing without leaving large holes. It performs all year long – season after season.

It's time you made the switch!

Call (800) 648-1166

For information and samples of our Pro's Choice® products.



Circle 111 on Inquiry Card.

Turfgrass from the bottom up

by Floyd Perry

These photos were taken in Seminole County, FL, on a practice field that was 100% native sand. The playing surface was extremely sparse, with more than 70% weak turf, high stress blow out areas, and weeds.

This progressive groundskeeper cut Bermuda sod sections from another section of the athletic facility and placed them in the low and worn areas. In the extremely low areas, an 89% sand/clay mix was dropped and leveled to cover the newly placed sod sections. In bare but level ground areas, a 50/50 blend of sand/peat was smoothed out to blend with the existing surface.

To blend all the materials along with the existing and new Bermuda turf, a RotaDairon was used to bring the mix to an on-grade surface level.



Get Serious With STMA

Application for Membership



The Sports Turf Managers Association (STMA) is an organization of professionals representing all segments of the sports turf industry. Our members work to combine the science of growing turfgrasses and the art of maintaining both natural and artificial athletic field materials to produce safe and aesthetically pleasing playing surfaces.

STMA provides members with a variety of benefits, including: educational opportunities; support for sports turf research; facilities tours; a national awards program; certification program; job hotline; website: www.sportsturfmanager.com; access to the STMA National Conference & Exhibition; complimentary subscriptions to Sports Turf Manager and sportsTURF Magazine; and MUCH more!

If you're serious about the sports turf industry, then it's time to become a member of STMA. Join today!

Member Information

Name _____
 Title _____
 Employer _____
 Type of Business _____
 Address _____
 City/state/zip _____
 Phone _____ Fax _____
 E-mail Address _____
 Signature _____
 Referred by _____
 (ST00)

Membership Category (please check one)

<input type="checkbox"/> I - Professional Facilities Sports Turf s Managers	\$ 85
<input type="checkbox"/> II - Four-year Colleges and Universities Facilities Sports Turf Managers	\$ 85
<input type="checkbox"/> III - Other Schools Facilities Sports Turf Managers	\$ 85
<input type="checkbox"/> IV - Parks & Rec. Facilities Sports Turf Managers	\$ 85
<input type="checkbox"/> V - Commercial (US or International)	\$ 295
<input type="checkbox"/> Va - Additional (from same Commercial Co.)	\$ 50
<input type="checkbox"/> VI - Student (w/valid ID) (non-voting)	\$ 20
<input type="checkbox"/> VII - International (other than commercial) (must be in US dollars)	\$ 85
<input type="checkbox"/> VIII - Research, Teaching & Cooperative Extension Personnel	\$ 85
<input type="checkbox"/> Chapter Dues (Call Headquarters for amount)	\$ _____
Total amount enclosed	\$ _____

Please enclose payment in U.S. dollars (check, money order, Master Card, Visa, Discover or American Express) and send to:

Sports Turf Managers Association, PO Box 3480, Omaha, NE 68103-0480

For more information, contact STMA Headquarters at
 phone: 800/323-3875, 712/366-2669, fax: 712/366-9119 or e-mail: SportsTMgr@aol.com

"Promoting Better and Safer Sports Turf Areas"

After two irrigation cycles, one light 1,500-lb. rolling, one biostimulant fertilizer application and 2 weeks of brilliant Florida sunshine, the Bermuda turf was filling in and laterally running together. Once the new stolons and rhizomes regained strength and began to fill in, a selected weed spray formula was applied.

This process was accomplished at five different high school facilities and met with extremely positive results during May and June, the prime Bermuda growing months. The process was adjusted by using washed sand on fields that had an extremely heavy sub-soil base. By blending both sand and clay together, the RotaDairon created quality root moisture, and a soil blend that allowed water to move vertically. The Bermuda plant filled in from the bottom up and created a 4- to 6-inch root structure.

The southern part of the United States has the fortunate luxury of being able to work with Bermuda turf and its physical foot-hardy characteristics. Should your athletic



ic facilities experience the difficulty of maintaining a smooth level-playing surface, a power blender RotaDairon may be the way to work.

"Turf grows by the inch and is killed by the foot," but perhaps as progressive groundskeepers we can

keep ours coming back from the bottom up.

Floyd Perry is president of Grounds Maintenance Services. The company may be contacted at (407) 648-1332 or e-mail grounds@digital.net, or see www.gmsforsportsfields.com.

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

TOLL FREE: 1-800-443-3268

jaydee@theramp.net • www.jaydeeqco.com

Circle 112 on Inquiry Card.

THATCH - MASTER 48" & 60" FINE TURF VERTI-CUT



1. Commercial quality fine turf verti-cut
2. PTO powered - 20 to 30 H.P.
3. Thin (.060) blades do NOT leave grooves
4. Extremely low maintenance
5. Fast

Turf Specialties, Inc.

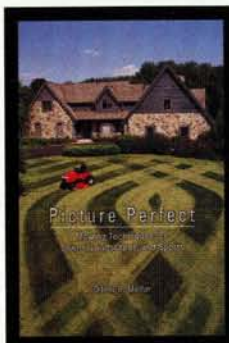
320 Third Street, S.W. • Winter Haven, FL 33880

Telephone: (863) 293-1657

Circle 113 on Inquiry Card.

industrybooks.com BOOKSTORE

offers Sports Turf readers a one-stop shop for all books on the Turf industry and related topics. We promise to provide the best reference materials to help build and maintain your business. If you would like additional information on our titles or would like to suggest a title or subject not shown please contact us toll free at (800) 203-2552 or on-line at www.industrybooks.com.

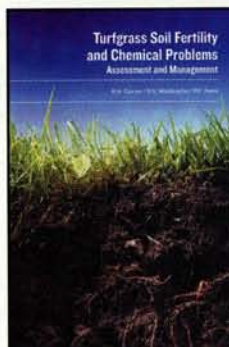


4191 \$34.95

Picture Perfect: Mowing techniques for Lawns, Landscapes, and Sports

By David R. Mellor,

Picture Perfect gives you first-hand, step-by-step guidance on creating your own unique lawn patterns. You'll learn the basic patterns – checkerboard, stripes, diamonds, waves, arches and circles – in simple step-by-step instructions, along with practical advice on equipment selection and use. Picture Perfect teaches the basics of turfgrass management -- everything from grass selection to fertilizers and mowing – to help keep your lawn healthy. Patterns are demonstrated in simple instructions followed by dozens of detailed photographs. 160 pgs.

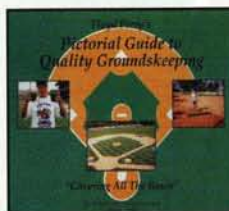


4192 \$95.00

Turfgrass Soil Fertility and Chemical Problems Assessment and Management,

By R.N. Carrow, D.V. Waddington, P.E. Rieke,

Turfgrass Soil Fertility and Chemical Problems is the best single-source, practical management tool that will help you overcome every fertility management challenge you face! 500 pgs.



4008 \$36.60

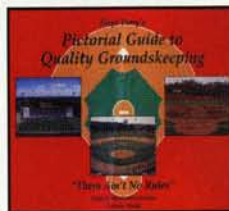
Pictorial Guides to Quality Groundskeeping Book I

by Floyd Perry,

The only textbooks on the market for the grounds supervisor, athletic coach, little league volunteer, or baseball purist. Over 500 photos in each text with many in color.

Book One, "Covering All The Bases"

(100 pgs) covers Mound and Home Plate Repair; Edging, Dragging, Lip Reduction; Water Removal; Homemade Equipment and Tricks of the Trade.



4009 \$36.60

Pictorial Guides to Quality Groundskeeping Book II

Book Two, "There Ain't No Rules"

(108 pgs.) covers Football, Soccer, Softball, Little League, Minor League, College and High School Facilities. Also covers Curbside Appeal; Tricks of the Trade, New Ideas for Easy Maintenance; Professional Research from Higher Learning Centers and much more.

4022 - Pictorial Guides to Quality Groundskeeping 2 book set. \$69.90



4023 \$37.00

Maintain It Easy (Keep It Safe),

by Grounds Maintenance Services,

Learn from hundreds of instructional photos featuring all aspects of softball field groundskeeping. Explains: Lip reduction; setting of multiple bases and pitching plates; dragging equipment and patterns; base line options; unique complex ideas; dugout design; batting cage and hitting station; layout; water removal and much more. Unique field ideas from across the country.

Order Form

☐ 4191 \$34.95 Qty ☐ 4192 \$95.00 Qty ☐ 4008 \$36.60 Qty

☐ 4009 \$36.60 Qty ☐ 4022 \$69.90 Qty ☐ 4023 \$37.00 Qty

Shipping \$3.00 per book Illinois residents please add 8.25% Sales Tax

Check or money order enclosed for \$

Charge my ☐ VISA ☐ MasterCard ☐ American Express
Acct# Exp. Date

Signature

Name

Address (no PO Boxes)

City State Zip

Country

Phone FAX

To be added to our special promotions list,
write your e-mail address here:

It's easy to order
Call 1-800-203-2552 • Fax 847-390-9461

order online at
www.industrybooks.com

or
fill out the order form and mail it to:
Adams Book Guild
250 S. Wacker Drive, Suite 1150
Chicago, IL 60606

ALL SALES FINAL

PAYMENT MUST ACCOMPANY ALL ORDERS

Please allow 4 weeks for delivery

Prices subject to change without notice

Available while supplies last!

FREE Information

sportsTURF

-----> Fill out this card & MAIL or FAX it to 856-786-4415

FREE PRODUCT INFORMATION

Please forward more information about the following products.

Check one:

- A ☐ Current Need
 B ☐ Future Need
 C ☐ Have Sales Rep Call

101 110 119 128 137 146 155 164 173 182 191 200
 102 111 120 129 138 147 156 165 174 183 192 201
 103 112 121 130 139 148 157 166 175 184 193 202
 104 113 122 131 140 149 158 167 176 185 194 203
 105 114 123 132 141 150 159 168 177 186 195 204
 106 115 124 133 142 151 160 169 178 187 196 205
 107 116 125 134 143 152 161 170 179 188 197 206
 108 117 126 135 144 153 162 171 180 189 198 207
 109 118 127 136 145 154 163 172 181 190 199 208

Please print name _____

Title _____

Company name _____

Business type _____

Address _____

City _____

State _____

Zip _____

Phone _____

Fax _____

E-mail address _____

Visit our Web site at www.greenindustry.com/service**Turfgrass Sites**
Assessment and ManagementR.N. Carrow
R.R. Duncan**4151 \$69.95****management,***by Robert Carrow and Ronald Duncan,*

This book will help you identify and pinpoint salinity problems, and gives you tools to implement effective management strategies. 400 pgs.

Turfgrass Diseases
SECOND EDITION

J. M. Vargas, Jr.

4016 \$89.95*by Joseph M. Vargas, Jr.,*

Completely revised and updated to provide the latest information on maintaining a healthy turf and identifying turf diseases. covers cultural, genetic, biological and chemical approaches to turf management and provides practical solutions to everyday problems. 320 pgs.



Order Form

☐ 4089 \$49.95 Qty___ ☐ 4151 \$69.95 Qty___ ☐ 4084 \$74.95 Qty___
☐ 4024 \$105.00 Qty___ ☐ 4016 \$89.95 Qty___

Shipping \$3.00 per book Illinois residents please add 8.25% Sales Tax

Check or money order enclosed for \$_____

Charge my ☐ VISA ☐ MasterCard ☐ American Express
 Acct# _____ Exp. Date _____

Signature _____

Name _____

Address (no PO Boxes) _____

City _____ State _____ Zip _____

Country _____

Phone _____ FAX _____

To be added to our special promotions list,
write your e-mail address here: _____**It's easy to order**

Call 1-800-203-2552 • Fax 847-390-9461

order online at

www.industrybooks.com

or

fill out the order form and mail it to:

Adams Book Guild

250 S. Wacker Drive, Suite 1150

Chicago, IL 60606

ALL SALES FINAL

PAYMENT MUST ACCOMPANY ALL ORDERS

Please allow 4 weeks for delivery

Prices subject to change without notice**Available while supplies last!**