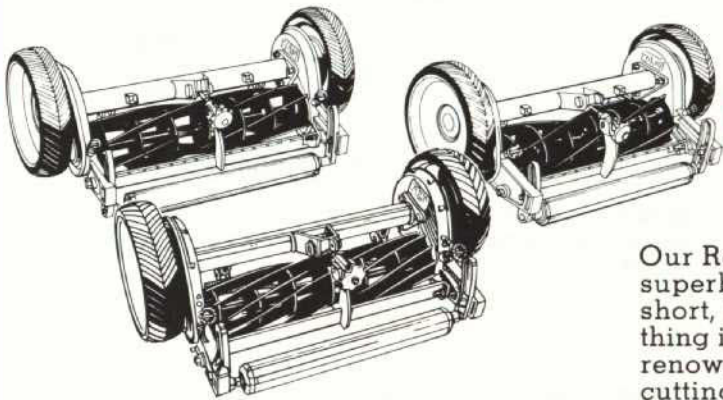


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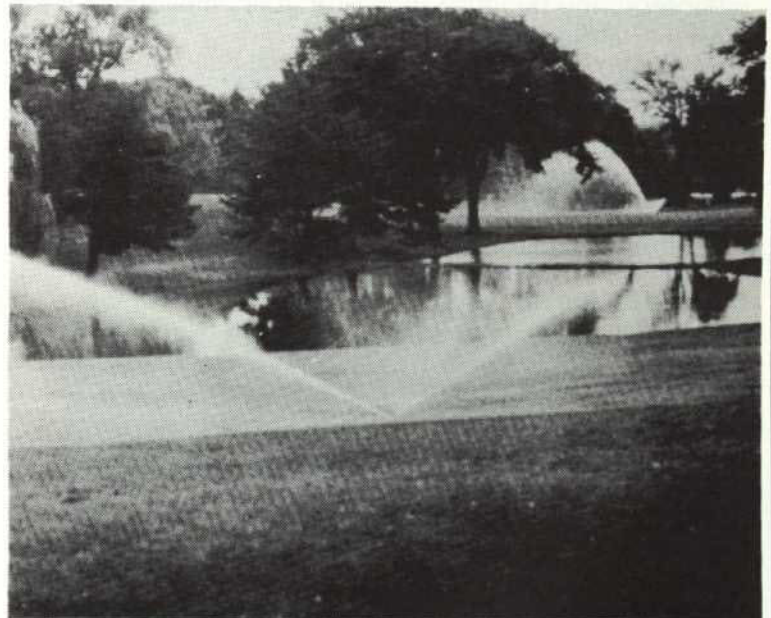
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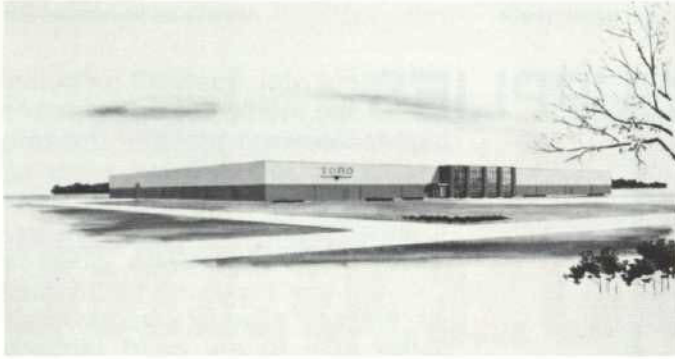




**Made in Wisconsin**

## TORO IN TOMAH

*By Monroe S. Miller*



Architect's sketch of the Toro plant in Tomah. Except for the change in the company logo, that is what it looks like today.



David T. McLaughlin, president of Toro in 1974, holds a rendering of the Toro plant at the Tomah site of construction during groundbreaking ceremonies.

Tomah, Wisconsin: population — 7,200. Typical rural Wisconsin community. Clean streets and pleasant homes, grocery stores, fuel suppliers and feed mills. Home of Frank King, the cartoonist who created the funny paper favorite "Gasoline Alley." A small town with its roots in American agriculture. Yet it is the unlikely home of one of the most modern manufacturing facilities in the turfgrass industry — Toro in Tomah.

Well, maybe not so unlikely. Located on I-90 about halfway between Milwaukee and Minneapolis, it is close to Toro's home office. It's also close to the Wisconsin manufacturing facilities of several well known engine companies — Kohler, Briggs & Stratton and Tecumseh — that power much of Toro's equipment. Many of their other suppliers are located in the upper midwest. But most important of all, according to former director of operations at Tomah, Jim Bruha, are the people of Tomah. "Excellent people," Bruha says, "that have made this plant critical to the success of the Toro Company. The workforce here is better than anyone could hope for."

The Tomah Toro plant was not what I expected. You'd never find it by looking for a smokestack; it isn't surrounded by slums, old and rundown buildings or other factories. There is no noise and very little traffic. In fact, if you drive to Tomah you will have to stop and ask for directions. Located on the edge of town in an industrial park, first glimpse is of a very large building with clean and simple lines. It is surrounded by a well maintained grass area. But the pleasant, almost subdued exterior belies all of the activity inside.

And it is a big building. The manufacturing facility covers a total of 225,000 square feet. Of that, 160,000

square feet are dedicated to the manufacturing and 65,000 square feet are used for warehousing. Twenty-four thousand square feet of the warehousing total is off-site.

Toro purchased twenty-five acres in the Tomah Industrial Park in the early 1970's. The park was created in the late 1960's to attract new industry to the Tomah area and is jointly owned by the city of Tomah and the Forward Tomah Development Corporation. The Toro plant is one of their major successes.

Groundbreaking for the new plant was something. The ceremony took place on 7,500 square feet of fresh sod laid in the shape of a map of Wisconsin! Pat Lucey, governor of the state at that time, David McLaughlin, president of The Toro Company then, and Tomah mayor C. E. Bean each hopped on a Toro mower and cut a swath across the Merion Kentucky Bluegrass sod map.

Construction was completed in 1975 at a cost of something over \$3 million. It opened with an initial workforce of only 50, but in early May of 1986 there were 501 hourly employees and 48 who are salaried. I'm still reeling from what I think is a remarkable fact: the Toro plant in Tomah has never ever had a time clock! Never, since day one. That certainly speaks highly of the relationship between labor and management. Jim Bruha has said that there have been only a handful of abuses in the ten and one-half years he'd been there (Jim received a promotion and left the plant for another Toro factory in Minnesota at the end of the first week of May). Timecard cheating is cause for immediate dismissal. The plant is a non-union facility that is currently working two welding shifts and one assembly line shift each





Groundbreaking ceremonies at Tomah, which took place on a sod map of Wisconsin!

day.

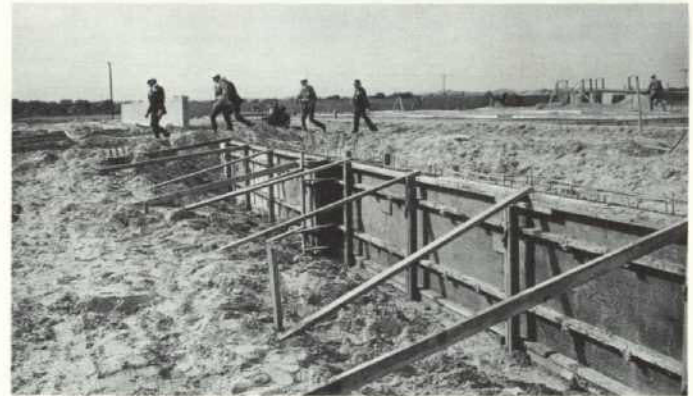
The basic charter of the Tomah plant is assembly, welding and painting. There is no piece/part manufacturing — that is all done in other Toro plants or by subcontractors. In fact, the Tomah plant is a big customer — they purchase parts from 850 different vendors. Complement that statistic with the fact that they have 12,500 unique part numbers in their system. If anything is obvious about this plant, it is the importance of being well organized. And if those numbers do not startle you, how about this one: they average \$9 million per month of parts inventory.

Painting is something else the Tomah operation does in a big way. About 23,500 parts are painted each and every day. Painted surfaces covered each year totals 7,500,000 square feet, consuming 83,500 pounds of powder paint and 11,500 gallons of wet paint per year. The welding operation uses 2,500,000 linear feet (470 miles) of welding wire in a year.

Have you ever wondered what pieces of Toro equipment are made in Tomah? The fact is that practically all Toro equipment you've purchased in recent years (and that you will buy in future years) was made in Wisconsin at Tomah. All commercial products, except the 350/450D are assembled in this factory. That means your Greensmasters, Grounds-



Ken Melrose's management philosophy is in evidence throughout Toro, including the Tomah factory.



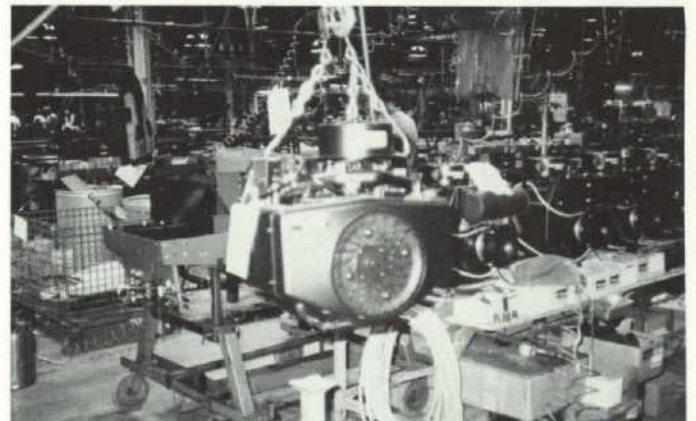
Construction progress at the Toro site in Tomah.

masters, Sand Pros, Parkmasters, Rake-O-Vacs and so on through the commercial lines that we use, were made right here at home! Toro will produce over 100 different models in Tomah during fiscal 1986. In addition to the commercial products, the following are made in Tomah:

- all large two-stage snowthrowers,
- all single-stage electric snowthrowers,
- all electric and gas weed trimmers,
- all front and rear engine riding rotary mowers, except the 725,
- all riding rotaries with baggers,
- all commercial reels, including those used on the 350/450D,
- new electric blowers and air rakes, and
- commercial kits.

At the end of the work day, 40 semi-trucks will have moved in and out of Toro's shipping docks. Their products go either directly to distributors or to their Mayville warehouse in Minneapolis.

For as modern, efficient and hi-tech as this plant is today, they are always looking to the future and planning for it. Major emphasis will be on robotic welding (although robots are currently welding some smaller pieces), E-coat painting system implementation, improved material handling within the plant, and electronic communications. Major sums of



A twin-cylinder Kohler engine, also made in Wisconsin, heads for installation in a Toro mower.





Jim Burha and a number of Toro's Tomah plant employees look at a photo album highlighting Jim's years at the Tomah plant.

money have been invested to move quickly into these improvements. The robotic welding currently done is somewhat limited — remember, there are two welding shifts — but the engineering staff sees these machines doing small, medium and large weldments soon, and at some point in time they will incorporate vision systems. I'm impressed by something significant: the decision making, training and programming for robotics includes employees currently on the welding line and in the booths, those very people likely to lose their jobs to robots. They are not, however, threatened by this inevitability. Their involvement insures them continued work, only in a little different area.

If the Tomah plant is new, relatively speaking, The Toro Company itself certainly is not. Known around the world for so many years as a major turf equipment manufacturer, Toro was founded in 1914 to build engines for a farm tractor producer. Under the name "Toro Motor Company" it kept its agricultural orientation until 1922 when the Golf Course Superintendent at a local country club suggested that Toro design and build a tractor towed gang mower for cutting golf course turf. In three short years Toro turfgrass maintenance equipment was found on major golf courses from coast to coast, as well as in the nation's parks and large estates. They were on their



Toro uses thousands of Milwaukee-made Briggs & Stratton engines.



Toro's employees held a going away party for Director of Operations Jim Bruha.

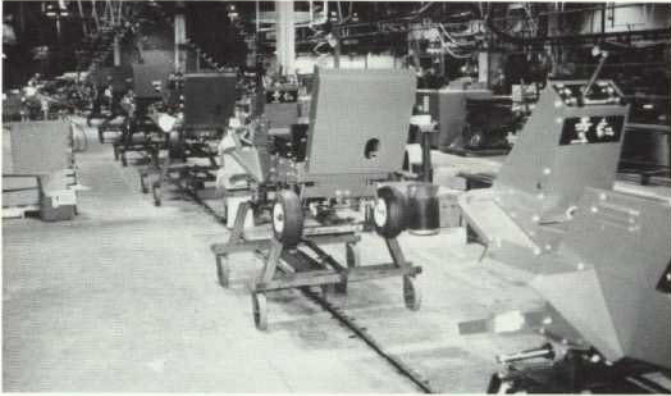
way to becoming the nation's leading independent producer of maintenance and irrigation equipment for turf.

Toro's plant in Tomah is really busy. Business is good for the corporation as a whole. Things are pretty rosy these days. But that wasn't so not so long ago — red ink on the books matched the red paint of their equipment in the 1981-1982 period. You'll remember those years if you worked on a Wisconsin golf course — there wasn't any snow. The lack of snow coupled with Toro's almost unconscious increased dependency on snowblower sales as a larger and larger percent of their gross spelled disaster; they lost \$13 million in 1981 and nearly \$9 million in 1982. President David McLaughlin and nine vice-presidents left the company in 1981. A young vice-president of commercial and turf sales since 1976, Ken Melrose, was promoted to replace McLaughlin. Although youthful, he possessed the courage to make some very difficult decisions. Most dramatic among them was trimming the workforce by more than half. More than 2,200 jobs were cut, management and labor alike. He closed inefficient and unprofitable plants, sold a lawn care company and bought out of a lease for posh, new company headquarters. Melrose, who has admitted he was part of Toro's problem when inventories were

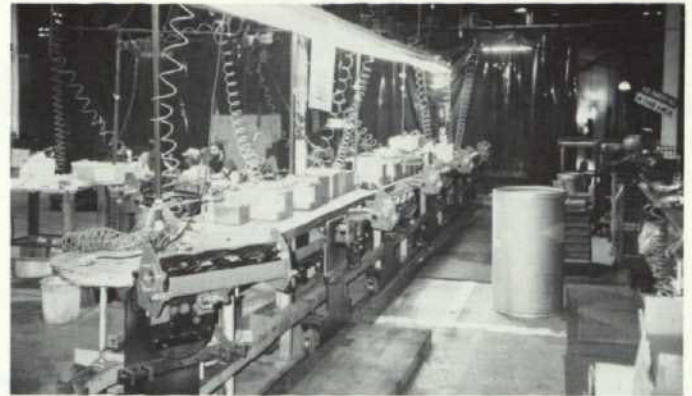


A few of the nearly 24,000 parts painted at Tomah each day headed for the paint booth.





A long line of Groundsmasters in various stages of assembly.



Assembly area for Greensmaster cutting heads.

allowed to grow to such enormous proportions, has been their salvation and the architect of solutions to their troubles. Educated at Princeton, MIT and the University of Chicago, he has increased productivity, frozen wages, required furlough days and instituted strict controls on the company's inventories.

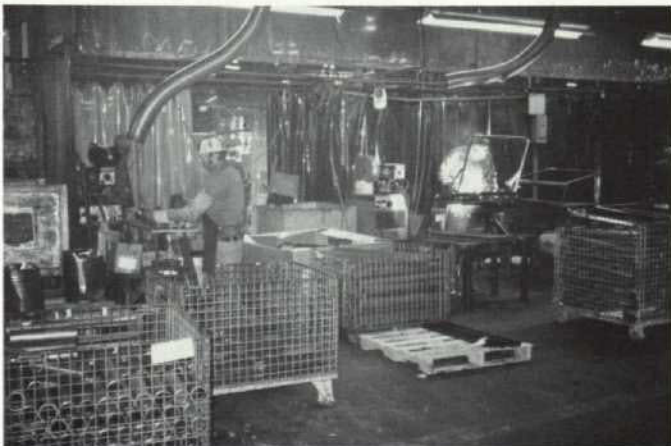
All of those actions were appropriate and tough decisions for Ken Melrose. They show he is a good businessman and are, in fact, the actions that make good stories in the Wall Street Journal, Forbes or Baron's Weekly. But several other things about his management style and philosophy impress me much more than his business acumen. He's a very kind and feeling person, a man I liked the first time I heard him speak and even more after I had a chance to visit with him. It does seem ironic to sense these things about a man who slashed Toro's payroll so drastically. But he was forced into it, and rather than focusing on that, I prefer looking at what he has done with and for those employees remaining with the company.

Ken Melrose decided immediately upon his ascendancy to the presidency that Toro must recapture their reputation for making quality products. My visit

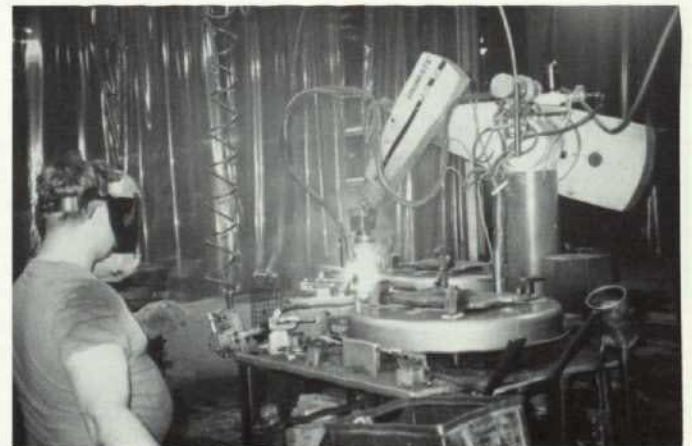
to Tomah confirmed that on the nuts and bolts level, as I watched a fork lift operator snatch a crated mower from a semi and deliver it to a quality control area where it was opened, checked and put through all kinds of tests. In fact, Tomah has some 109 hourly and salaried individuals involved in quality circles. Secondly, he not only maintained but increased expenditures on research and development of new products. All Golf Course Superintendents will benefit from this attitude and decision, as will Toro. It will also place them in a better posture to meet the inevitable assault from Japanese products entering our marketplace.

I am particularly impressed with Melrose's "Pride In Excellence" program. As you walk from Tomah's office area into the plant itself, what you first see is a large banner declaring their support for his philosophy. As he has said, the slogan is intended to keep everyone in the Toro family "visibly focused on our priorities of quality, productivity and innovation." You have to visit their various facilities to realize this isn't an empty or hollow slogan — they all really believe in it.

The most dramatic evidence of management belief in and commitment to the PIE program is their



One of the welding areas which will someday be replaced with robotic welding.



One of the robotic welding units at work on a Toro rotary mower deck in the Tomah plant.





Toro V.P. Ken Larson fastening a cable clamp to a rear bagger mower, as part of management participation in the PIE program.



Toro president Ken Melrose getting instructions on how to torque a wheel and tire assembly. "It's not as easy as it looks!"

participation. There are several ways they are doing this: top management officers working directly, in person, with dealers and distributors in their everyday activities in the turf business; spending time — lots of time — with customers in company programs like the Turf Professionals Club, and; spending a day and a half at one of Toro's plants, like Tomah. I like the last one best! The intention of putting on work clothes and assuming a place on the assembly line is simply to give these management personnel a keener awareness and deeper understanding of the various jobs performed in the manufacturing process. When they were in Tomah, some did work on the assembly line. Others were placed in expediting and receiving operations. And some spent the day as forklift operators. I'd love to have been there. The rules they operated under were simple: work a full shift with no interruption by phone calls; breaks only at scheduled times; "brown bag" lunches and work clothes (no coats and ties). Again, the whole idea was for the decisionmakers to walk in the shoes of a plant employee for a day and understand what he experiences. Who knows, maybe President Melrose or V.P. Larson was taken to task when they discovered leftover fasteners and did not have a clue as to

where they were supposed to be. The management participation program that included Tomah seems to exemplify their PIE program.

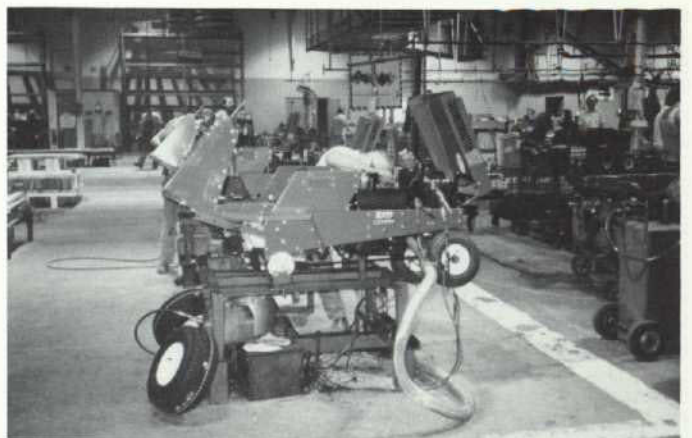
Toro in Tomah — valuable assets to the whole state of Wisconsin and an invaluable ally of the Wisconsin Golf Course Superintendent. Stop by and visit them someday. They are quality people building a quality product and **always** have the welcome mat at their door.



Welding on an assembly for Toro's new Greens Aerator.



The Toro plant in Tomah has its own testing facility. A staff person here is checking specs on the main piece for Toro's new Greens Aerator.



Groundsmaster production.





## TURF PROFESSIONALS MEETING — 1986

A singular event. Once in a lifetime opportunity. Unbelievable. Fantastic! A happening.

Worn out and trite phrases, these are. But all fall short in describing the three and one-half days I spent in Minneapolis as a guest of the Toro Company attending their first ever Turf Professionals Meeting. I'm up to my knees in superlatives trying to explain what a wonderful and educational time it was. It will be a tough act for them, or anyone else, to follow. It approached perfection in its organization and content, and I'm grateful to Ed Devinger for inviting me to participate.

The Toro Turf Professionals Club got off to an inauspicious beginning. It was scheduled for February 1985 and I was ready to go. The weather forecast wasn't real good for the departure day, but it never is for Wisconsin, Minnesota and the rest of the upper midwest in the dead of winter. When I left home for the Dane County airport the snow was just beginning to fall. By the time I got there you could barely see beyond the hood of the car. Flights to and from Minneapolis were cancelled and not long after I arrived, the airport in Madison was also closed. It took me over two hours to make the 15 minute trip back home. By the end of the storm the Twin Cities had received over 20 inches of snow and guys going there for the Toro program were stranded in airports all over the country. For the poor souls who had gotten to Minneapolis it was another two days getting out and back home. The event was cancelled and rescheduled for the first week of **May** 1986. I'm sure the Toro staff was frustrated, but they must have spent the extra time planning for this year's meeting.

What made this such a special occasion? I guess, when I look back in retrospect, it was the

chance to get to know everything and nearly everyone connected with Toro's commercial business. It may have been a greater revelation to me than others because I hadn't been in their facilities in about ten years and had these previous visits as references. In 1973 I was there for a week-long service school. Then, in 1976 while attending the GCSAA Conference in Minneapolis, I took advantage of an offer to tour the plant again. Boy, have things changed! No longer is the Lyndale Avenue plant what we think of as a typical American factory — noisy, dirty and congested. The plant, right in the middle of a residential area, could almost be missed unless you were looking for it. The neat, clean and well-landscaped exterior gives a hint of what to expect on the inside. A lot of the actual manufacturing and assembly that I recall from previous visits is gone. Offices have expanded. Testing, research and development, and engineering are there. Some stamping, boring, welding, reel manufacture and individual piece-making remain. It is a quieter, cleaner and better organized place than the one I recall. The attitude within the walls is upbeat. People are smiling.

We also visited two other Toro facilities during our stay. The trip to Tomah inspired the "Made In Wisconsin" feature for this issue. The other operation we spent time in was their parts warehouse. I'm incapable of describing the scope and size of this aspect of the company — physical size, inventory and commitment. You really have to see it to believe it — words would lead you to accuse me of exaggeration. What Dick Hartgarten, Dayle Mason and Dan Sabie have set up in this enormous, cavernous parts depot is impressive. They took time to explain goals and accomplishments of their parts

business — audit procedures, fill rates, ship times and back order response time. They also have developed a direct ship and emergency order program that will please any Golf Course Superintendent depending on Toro for parts. Distributor participation options are available and they have indeed responded to the rise of the "will fit" businesses. Pricing policy, I'm convinced, is a concern they have recognized and responded to.

The agenda included opportunities to meet and mix with Toro executives, including Ken Melrose, their very young (mid-forties) president. John Szafranski, vice-president of the commercial division (formerly the turf division) and his boss, Ken Larson, led the way with Melrose in bringing Toro back from their bad years in the 1980 — 1982 period. Henry Tetzlaff, an engineer and the director of new commercial products, told of his staff of 38 engineers and designers, 30 technical and mechanical draftsmen, and spent time explaining Dana Lonn's operation of the CAE, CAD and CAM computers (computer aided engineering, design and manufacturing). Dana is out front in the use of computers in developing better products for turf maintenance — a real whiz kid!

Dr. Jim Watson was with us on a couple of occasions. He is a key person for Toro, I think, because of the depth of his understanding of the needs of the golf turf industry. Pleasant, easy-to-talk-to and very much down to earth, the good professor is. We all enjoyed time for some one-on-one conversation with him. And an old friend of Wisconsin Golf Course Superintendents, Bob Emmerich, who has been moved into a top management position, was there. He's commuting from his home in Milwaukee.

Maybe I'm saving the best until last. Rich Dillon, Toro's director of sales for the commercial division, was a most gracious host and made all of us feel comfortable and welcome. More than anyone else, he made this meeting something special. I also got to meet and know Lee Holtz and Tom Dooley, gentlemen who work with



the Wisconsin golf course marketplace.

The group was not a large one — I think there were 31 Golf Course Superintendents in attendance. But every part of America was represented and I met some very interesting guys. In fact, I've no doubt ten years from now a couple of us will still be corresponding.

This is going to sound so hokey and corny you'll doubt its impact. I did, until I sensed it was a real attitude and feeling pervasive throughout the company. Ken Melrose brought it with his promotion to president and calls it "Pride In Excellence." You see the acronym everywhere. Outstanding work by an employee may get him, literally, a pie served up by the company president! But the attitude is what matters, and I saw this sincere pride everywhere, from the tidiness of the facilities to the smile on the faces of many hourly employees in the factories. It gave me a good feeling and I know they have a good thing going as a result of the PIE program.

Late in the afternoon of the last day we had a chance to listen to Dr. Don White, turfgrass specialist at the University of Minnesota. Don, who is an honorary member of the WGCSA and scheduled to address our meeting in Waupaca this summer, presented a lecture on his *Poa annua* breeding program, a research project that makes him the Don Quixote of the turfgrass academic community! It is very interesting work he's involved with and his slides showed some clear progress in his project.

I'm leaving out too much of what transpired — space limitations imposed by a stern editor! The meeting was memorable and so worthwhile for the reasons noted here, and many more besides. But I would be remiss if I did not mention the wonderfully lavish treatment we received — something few of us seldom had experienced. The rooms at the Bloomington Marriott were spacious and comfortable. The food was too good and there was too much of it. The camaraderie was evident almost immediately. And we travelled to Tomah on Amtrak — the first time in nearly thirty years I'd ridden on a train. The schedule was always on time, audio and visual materials were excellent, and the Toro logo

golf shirt fit! These people did everything right.

I envy the Wisconsin Golf Course Superintendent Ed Dev-

inger selects for next year's meeting. He's going to be one lucky guy!

Monroe S. Miller

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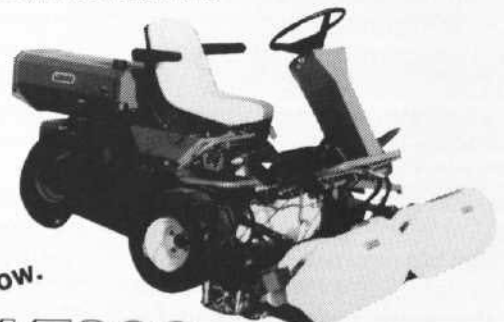
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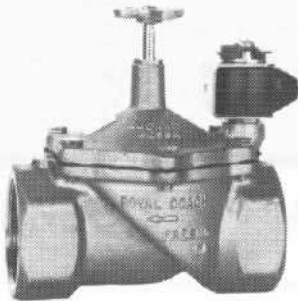
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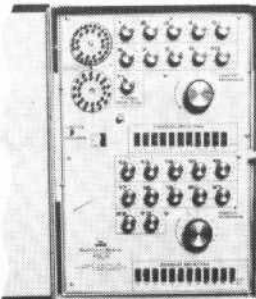


# IRRIGATION EQUIPMENT

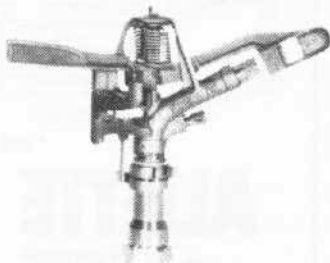
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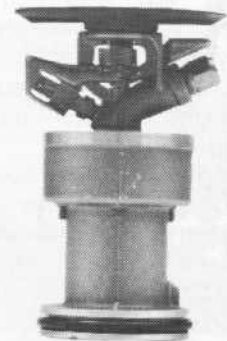
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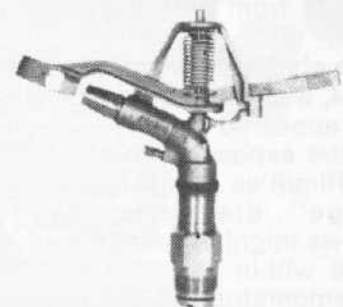
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## Frost Damage Mimics Disease Symptoms

By Dr. Gayle L. Worf

When late spring frosts occur, damage to bentgrass can occur that looks a lot like *Helminthosporium*. And since the damage takes place at about the same time one is looking for leaf spot, mistaken diagnoses are an inevitable consequence.

We had that problem this spring. It was aggravated by the fact that considerable overseeding had taken place a few weeks earlier because of the extensive winter injury that we experienced in southeast Wisconsin this year, and the young bentgrass was just up and becoming established when the unfortunate weather pattern occurred.

You might be interested in the results of a study we did this spring to verify the effects of frost on bentgrass, and to assure ourselves that no pathogens were involved. Jerry Kerchasky was our primary cooperator for this effort. We pulled plugs with a cup cutter, "planted" them in soil to protect the roots from artificially low exposure, then placed them in a growth chamber operating at 23 F. for 0, 4, 8 and 12 hours. No symptoms appeared for several days after the exposure. That's one of the difficulties in making a "frost damage" diagnosis, by the way—we might expect injury to be evident within 24 hours after the low temperature. After three or four days, the tips of many leaf blades assumed a tan-to-red discoloration. There were no distinct spots, but the color is typical of *Helminthosporium* infections.

Mature Penneagle turf was considerably more damaged than Penncross, which showed relatively little discoloration. But seedling Penncross injury was severe! The basic pattern on the young plants was similar to the mature ones, except that the leaf collapse extended further towards the base of

the plants. Individual plants were killed.

Frost injury to *Poa annua* produces distinct white tips on many leaves. Bluegrass behaves similarly, but occasional white bands across leaves also occurs. These

can mimic *Ascochyta* or dollar spot, for example.

We've not completed isolation efforts to confirm that no "secondary" organisms are involved with these symptoms. However, we have confirmed to our satisfaction that frost can, indeed, do real damage to turf when conditions are right for it.

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