

THE EQUIPMENT EVOLUTION

WEEDS TREES & TURF marks its 25th birthday this year. Last month, we looked at the progress of the chemical industry since 1962. Now, we look at mowers—where we've been and where we're going.

by Heide Aungst, associate editor

It's a story that could begin with "once upon a time..."

The tale of the first lawn mower begins 157 years ago with a man named Edwin Budding, in the far-away land of Stroud in Gloucestershire, England.

Budding was an engineer in charge of installing machines that sheared the nap off cloth. Those machines gave him the idea for using the same principle to cut grass.

Legend has it that Budding tested his machine only at night, fearful of what his neighbors might think.

He developed a mower with a cutting width of 21 inches. The patent specification, signed on Oct. 5, 1830, states, "Country gentlemen may find using my machine themselves an amusing, useful and healthy exercise."

Two years later, Ransomes started manufacturing it under license.

Within 20 years, Ransomes had manufactured 1,500 machines, improving upon the original concept.

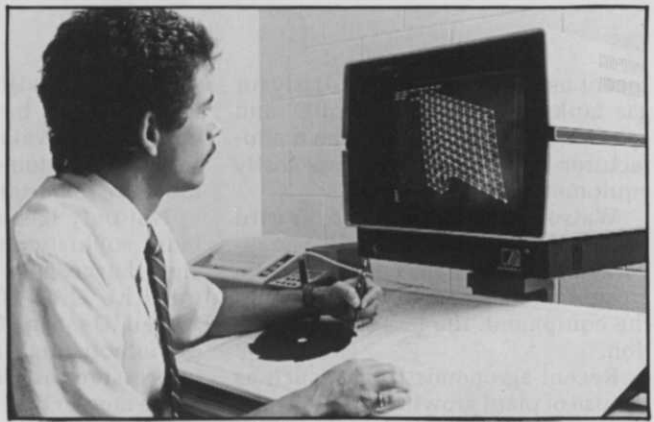
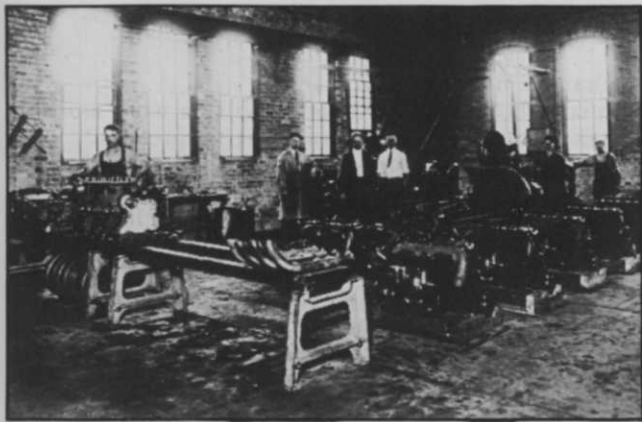
In fact, James Edward Ransome, grandson of the founder, is credited with inventing the first motor mower in 1902.

So that's how it all began...

But Ransomes, which remains the leading mower manufacturer in Europe, didn't open operations in the United States until 1978, when it



The mower has evolved over the years from a hand push type to today's equipment with sophisticated engines, hydraulics and new synthetic materials.



Manufacturing was slow at a Toro factory in the early 1900s (left). CAD/CAM (right) has revolutionized the mower industry.

bought out the old Wisconsin Marine Co. "We have made great inroads in the U.S., but we're still third," says Dick Lehman, executive vice-president of Ransomes.

Dominant force

The companies dominating mower manufacturing in the United States are Toro and Jacobsen. Each has a lengthy history of its own.

Toro was founded in the early 1900s as the Bull Tractor Co., but turned to turf in 1922 when a golf course superintendent suggested the company design a tractor-towed gang mower for fairway maintenance.

Jacobsen got its start in 1921 by manufacturing a mower that covered four acres a day.

Although about 100 companies manufacture mowers today, Jacobsen and Toro are the strongholds with bragging rights on numerous mower innovations.

For example, Toro invented the first electric starting mower and the first rotary mower with a bagging attachment. In 1969, Jacobsen was first in the market with a triplex, power-driven, hydraulic-drive greens-mower.

But who invented what isn't as important as the general evolution of the

mower. People who have observed the progress first-hand say that within the last quarter-century the modern mower has evolved.

Modern mower

Dr. Jim Watson, vice-president of Toro, had already been with the company a decade when WEEDS AND TURF hit the market in 1962. (It became WEEDS TREES & TURF in '64).

"We had just begun to get into the consumer end," Watson recalls. "It was about 65 percent reel, 35 percent rotary. The switch came in the early '60s. Today, the consumer market is 100 percent rotary."

The golf course market, Watson says, saved close to 75 percent in labor costs by switching from walk-behinds to triplex mowers in the late '60s. "The triplex was developed because of an increase in play and a decrease in the time the superintendent had to get the job done with all the people out there," Watson explains.

But now at many private clubs, the pendulum is swinging back.

"A number of courses are going back to walking greens," says Roger Thomas, who retired as vice president of marketing for Jacobsen a year ago after 39 years of service. Thomas still consults with the company.

Changes in cultural management have directly led to changes in equipment. Thomas cites the example of closer fairway mowing which requires more sophisticated equipment. Some superintendents are even beginning to mow fairways with triplexes.

Watson points to the development of the Stimpmeter and its use in the last decade. Golfers demand faster greens which makes lower cuts a necessity.

Both men agree that the biggest change in equipment is in the application of hydraulics.

"It was quite an innovation in the industry," Thomas says. "Originally there was a problem with oil leaking, but that didn't take long to solve."

Thomas says the use of hydraulics provides a smoother cut, while putting parts through less wear.

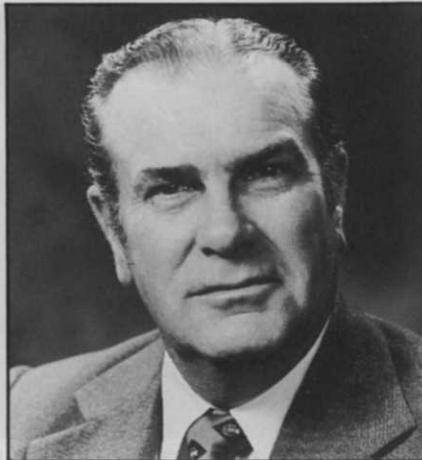
Within the time Ransomes has been in the U.S., Lehman says the biggest change he's observed is lightweight mowing equipment, particularly for fairways.

"Lighter equipment has given us the opportunity to go wider for less money," Thomas says.

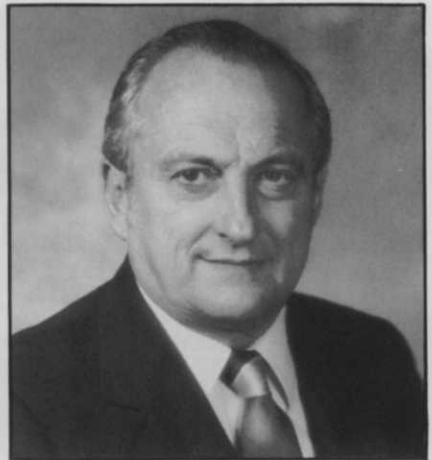
Other specific changes in parts include flotation tires which were developed in the early '70s and the more



Dr. James Watson—lightweight equipment is agronomically beneficial.



Roger Thomas—hydraulics was an innovation in the industry.



Dick Lehman—the market is growing at a six percent rate.

recent use of plastics, particularly for gas tanks. The use of "exotic" and synthetic materials allows the manufacturer to design lighter, less costly equipment.

Watson views the trend toward lightweight, precision, highly maneuverable equipment as beneficial from an agronomic standpoint. The lighter the equipment, the less soil compaction.

Recent agronomic trends, such as the use of plant growth regulators and more native plant materials, won't hurt the equipment industry, Watson says. Manicured turf will remain popular in some areas.

High tech

Computerization and electronics will probably be used more frequently in the mower's controlling system, but high tech has had the most impact on mower design. "Because of high tech, mechanics have to be much more qualified than they used to be," says Rogers.

Not only will mechanics need more training, but with complicated equipment, Watson says, company service to customers will become all the more important.

Not only has equipment become more sophisticated, but so has design. Large mower manufacturers use the CAD/CAM (Computer Aided Design/Computer Aided Manufacturing), a complicated and impressive program which can design a mower down to its most minuscule part.

"It's the wave of the future," Watson says. "The advancements in designing take away from the labor intensive drawing board."

Future shock

Robot lawn mowers...mowers floating on a cushion of air...mowing lawns with lasers...all have been suggested as the answers to future mowing problems. And, despite current research, all three men say that such changes are more than 25 years

away, if at all.

"Robotics will be used more in the manufacturing process," Watson says. "But we have a long way to go before it will be practical as a mower from safety and liability aspects."

"I don't think growth will be as large as during the past 20 years," Lehman says. "The market is still growing at a six to seven percent rate."

Watson does say the use of riding mowers will continue to increase, since it leaves more leisure time for the user.

"When I give a talk on the future of the industry, I say the industry needs to take a look at the equipment currently available, and the equipment 25 years from now will be basically the same," Watson says. **WT&T**

Next month, WT&T looks at the history and future of irrigation seed and golf.



Ransomes has introduced its first all-hydraulic triplex greensmower. The new Greens Triple (above) is out this spring.

In 1969, Jacobsen introduced its Greens King (left), the first power-driven hydraulic drive greensmower.



Jacobsen's TF-60 Triplex (above) represents modern lightweight equipment.

This photo (left) taken in the early '60s shows Toro's Parkmaster, one of the first models to use hydraulics.