

GREEN INDUSTRY SHOWCASE

Lightning detection system spots dangers at 25 miles

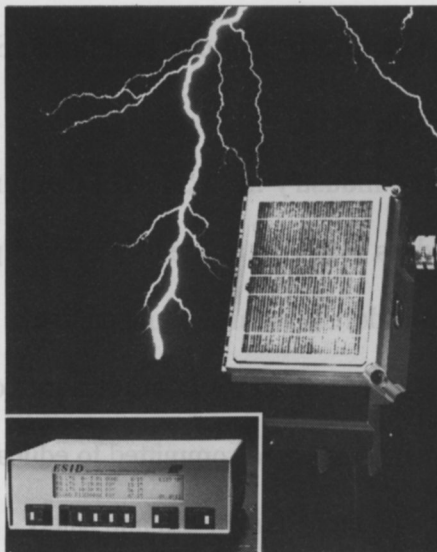
The 1992 Masters Tournament was the first in-practice testing ground for a new technology developed to detect and range lightning within 25 miles of a golf course.

The patented technology was developed by Lightning Location and Protection (LLP), which was recently purchased by the Toro Company's Irrigation Division.

The system, called the Electrical Storm Identification Device (ESID), was first put into public practice at the Masters in Augusta. Midway through the third round of Saturday's play, the sign-boards carried warnings of threatening weather nearby. About 30 minutes later, with no rain in sight and the skies uniformly overcast, the lightning sirens began to sound.

Neither the spectators nor the television commentators could understand the reason for the sirens; it seemed like just another cloudy day. But within 20 minutes, the rains came, complete with thunder and lightning.

Play was suspended with the detection of one flash of lightning, which struck 14



miles away from the course. Twenty minutes later, the big rains came and 26 flashes were seen in a span of 15 minutes.

The ESID also indicates when it is safe to resume play.

Toro and Lightning Location and Protection have entered into a joint agreement, under which the Irrigation Division will market and sell the ESID units manufactured by LLP.

ESID is described as a rugged, solar-powered, omni-directional short-range thunderstorm sensor.

It "looks" for electrical and optical energy emitted by lightning. Detection and analysis hardware is installed at ground level or on a rooftop. The system's "internal logic" system contains algorithms with which the ESID identifies the unique wave-form signature characteristic of lightning. These algorithms coincidence the energy pulses, or determine the time-relationship, and therefore the common source of both pulses. This final step ensures the reliability of a lightning report.

ESID estimates the range of cloud-to-ground lightning.

The unit indicates that lightning is either overhead; 0-5 miles out; 5-10 miles out; or 10-25 miles out.

This information is especially valuable when considering that cloud-to-ground lightning can move laterally a distance of 10 miles.

Circle No. 191 on Reader Inquiry Card

SHOWCASE PRODUCT REVIEW

Heavy duty sweeper mounts to lighter tractor frames

Sweepster, Inc. has introduced the new Model M18 sweeper for lawn and garden tractors.

The M18 mounts to most popular lawn and garden tractors with a minimum of 10 hp. The mechanical sweeper is driven by the tractor's front or mid-PTO, by a constant-velocity drive shaft.

Standard features include: 18-inch wide sectional brush available in polypropylene, wire or 1/2 poly-1/2 wire; manual angle change; electric brush lift and rear casters. Options include: side-mounted brush casters to prevent turf scalping during thatch



removal and storage stands which mount in place of side casters.

Jim Koch, Sweepster Product Manager, says the sweeper's weight might make some question its sturdiness.

"Just because this sweeper weighs less doesn't mean it's not heavy duty," says Koch. "We've incorporated the technology from our larger brooms into the M18. The heavy-duty center gearbox was custom-designed for this special application and extensively tested to ensure a durable low maintenance driveline."

Parallel linkage mounting and rear casters allow the brush head to oscillate sideways and up and down along contours.

Circle No. 192 on Reader Inquiry Card