

Turf goes 'Space Age'

GPS isn't just for golf courses anymore.
Find out how it will streamline your operations

BY GREGG BRENINGMEYER

Remember when all you had was a citizen band radio to communicate with crews and a hand calculator to price out jobs? All that is changing as the Space Age comes down to Earth. Advances in technology have made cell phones commonplace, while personal computers store business data and calculate job specs at the speed of light. The next phase of change will unfold in navigation technology, mapping from space and machine diagnostics.

Relics of Cold War thinking

Research on satellite navigation began in the 1960s, dreamed up by Cold Warriors. For the commander of a Polaris submarine to launch a nuclear-tipped missile accurately, he had to know his sub's precise location. In 1968, the United States launched 23 Navy Transit satellites — the first navigation satellites — to pinpoint submarine positions anywhere on or under the seas.

The U.S. Air Force pursued a similar idea with the Global Positioning System (GPS). The idea was to place 24 satellites in orbit, which is what the United States did in 1995 at a cost of \$10 billion. These Navstar satellites weigh 210 lbs., look down from a height of 12,000 miles and circle the world every 12 hours. To determine an exact location, readings are needed from four satellites: three for triangulation and one to fix altitude above sea level.

Down to turf

Now that civilians have access to Navstar satellites and GPS, all kinds of interesting projects that can solve chronic problems in the lawn care industry are under development. Here are just a few of the ideas on the drawing board at places like John Deere Special Technologies, a subsidiary of Deere and Company:

1 *You know the exact location of your large mowing machines.* The key word is "embedded." A GPS terminal can be embedded in the engine area of a machine so it can't be removed or disabled easily. The terminal can read coded signals from four Navstar satellites and determine its precise location. A computer screen will show the exact location of every major piece of equipment overlaid on a map of your community so you, as manager, know where every crew is working. You have the "big picture" right in front of you.

2 *You know if something is missing and how to find it.* If a wide-area front mower disappears from your inventory, you can track it down without using bloodhounds. Just snap on your "big picture" screen to locate machines. In the evening, all your machines except one are shown clustered around the shop. And there, on your screen, will be the missing machine at the corner of Main St. and Elm Ave. Send the cops to retrieve your stolen mower.

3 *You can collect important data about crew routes and mowing times.* Connect the GPS to your personal computer, log in and find out all kinds of information about routes that crews take to job sites, time it takes to mow and trim each job and the use of trailers. All this knowledge stored in your computer can be evaluated by smart software, or expert programs that can give you tips on how to load trailers more efficiently and create routes that help crews cover more jobs in a day. The result is increased productivity and improved profitability. Someday, a system such as this will help you price jobs more effectively to counter competition and increase your income.

4 *You can eliminate downtime.* In the not-too-distant future, on-board sensors will monitor key components and high-wear parts to detect telltale signs of fatigue. Engineers currently use stress gauges when testing components for durability, so the next step is logical — build sensors into a machine so that it can diagnose its own problems.



GPS will change the way you allow monitor operations. Better data will help you increase productivity and limit equipment downtime.

But don't stop there — design the machine so it even orders its own parts. For example, when a sensor notices wear on a belt, it can send a message to a dealer who can then deliver the part to you with information about how to install it. Better yet, the dealer can send a mobile service unit to your machine and make the preventative maintenance repair on the spot. The dealer can find the machine through GPS.

5 *You can map jobs from the sky to price more accurately.* It's said that the CIA has spy satellites that can read a newspaper headline from space. Landsat satellites have been mapping the surface of the world for years. Someday, you'll have access to that kind of technology and be able to use satellites to map each job

continued on page 34

continued from page 33

site and determine mowing areas and trimming work precisely. This kind of information will help you price jobs more profitably and determine time-at-job more precisely for higher-volume scheduling.

6 You can spray material with the precision of an eyedropper. Spray units guided by GPS and mapping satellites that monitor soil and plant conditions can help you meet government regulations and document every job.

7 You can make full use of your assets with a total management system. With

satellites tracking movement from space and software keeping track of your costs and revenues, you can sit in front of your "big picture" computer screen and make



Portable GPS units communicate with satellites, giving you constant data for managing.

key decisions with more facts at your fingertips. You can ask the right questions about equipment inventory, parts storage, preventative maintenance and equipment replacement, profitability of each job, overall profitability, cash flow, wages, taxes and insurance. Plus, you can make the important decisions with a sense of confidence.

That's the promise of satellites integrated with computers. The Space Age comes down to turf by giving you more information to help you make tough business decisions with confidence.

— The author is manager of commercial mowing for John Deere, Raleigh, NC.

Crew out unloading sod?
No Problem!

SALES • RENTALS SERVICE



- Two-Way Radios
- Nextel Phones
- Offices Worldwide
- Largest Inventory

Call Nationwide Toll-Free
1-800-527-1670

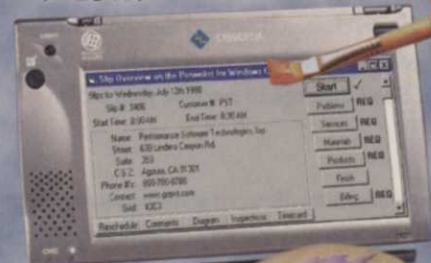
BEARCOM
Wireless Worldwide

www.bearcom.com

040400-3

Circle 118

It is here!
"Route Rite"® 32



- Web enabled!
- Customizable set ups!
- Integrates with "Pen Writer"™ for CE
- Exports to other popular accounting software or use ours
- Mix & match software modules!
- 32 bit speed with "Quick View" features!
- Upgrade as you grow!
- Totally integrated!
- Bar code enabled!
- World Class Support!
- Rent or Purchase!

Create your own Routing Software Masterpiece

The all new 32bit Visual Basic upgrade to "Route Rite"®, our traditional Desktop Routing & Accounting Software, since 1991. The performance designed "Route Rite"® 32 is also designed to seamlessly integrate with the "Pen Writer"™ hand held software for Windows CE devices. This most advanced programming masterpiece has a unique "Quick View" design for maximum speed in servicing your customers, while maintaining maximum profits. Let our products help you achieve paperless & post less operation of your routing business.

PERFORMANCE SOFTWARE TECHNOLOGIES, INC.
www.gopst.com 800 788 0788

Circle 119