# Rugged Handhelds Revolutionize Scaling Process

By Jim Moore
A case study from Tripod Data Systems

New technology lets you take your entire music library with you on bike rides, and new technology can allow a dispatcher to unlock your car from 1,000 miles away. But how much can new technology improve a process that's been virtually unchanged for centuries?

As it turns out, a lot.

Logging has had the same process at its core for a long time: Find a tree. Cut it down. Cut it up. Build things out of the wood. But critical questions enter into that simple process: Which tree should I harvest to get the best return from this stand of timber? How can I manufacture the logs for the most yield? And, once the timber is cut, how much will someone pay for it?

With so much money at stake, it's not surprising that people on both sides of the transaction are seeking the latest technology to refine the process. And that's why — thanks to the combination of customized software, a rugged handheld computer and a cooperative effort — the 19th century process of log scaling has experienced a 21st century improvement.

*Scalers assess each log, then enter data on dimensions, defects and other criteria using the Ranger handheld.*

*D.R. Systems and NORCAL required a handheld that could survive rugged field conditions.*

**Updating an Old-fashioned Marketplace**

Log scaling is, at its heart, a good old-fashioned marketplace. A seller harvests logs, and buyers decide which ones to buy. But in this case, someone else determines the quality and quantity of the logs delivered. On the West Coast, a series of scaling bureaus serve as the go-between. These nonprofit cooperatives, supported and governed by loggers, landowners and sawmill operators, impartially determine both log quantity and quality. They employ scalers who follow a set of complex rules regarding log dimensions, defects and other factors to assess individual logs. Each day, scalers send the data to their respective bureaus, where information is processed and then sent to sellers and buyers.

**The Old Way**
On an average day, NORCAL — one of the five Northwest scaling bureaus — has roughly 70 scalers gathering and collecting data in the field. Naturally, the more efficiently these scalers can do their work, the better for all involved.

"Up through the '60s and '70s, all the data work was done with paper and pencil," says Rich Holmboe of D.R. Systems, a forestry computer technology vendor. "You'd have guys in 50 or 60 locations filling out reports in the field and mailing them to the bureaus, where there would be 30 clerks key-punching in the data." The process was slow and human error was inevitable. "It was not an ideal process," says Holmboe.

In the 1980s, scalers began using the first rudimentary handheld computers to gather data. But DOS-based platforms were not ideal and the handhelds weren't designed for use in rugged field conditions.

**A Better Way**
Two things happened that revolutionized the scaling process. First, truly ruggedized handhelds hit the market around 2000. Second, a new generation of customizable Windows operating systems became the computer standard.

Soon after, D.R. Systems and NORCAL got together to develop customized, Windows-based software for scaling data collection. The new software streamlines functions and data entry routines, and its Windows foundation allows for upgrades as additional or improved capabilities are developed.

"Going to Windows software offered us the efficiencies of modern programming languages, plus we moved away from a dying, unsupported DOS platform to a more universal one," says Crowell.

The D.R.Systems/NORCAL team engaged in an extensive search for the best rugged handheld to run the new software. "You just can't afford to lose a day's work with that much money at stake," Holmboe says.

After spending 10 months of hands-on time testing different handhelds in all conditions, the team chose an affordable, rugged handheld with several key features, including a screen that is readable both indoors and in direct sunlight and a design that withstands the harsh conditions of data collection in the field.

**The Results**
Six months after implementing the one-two punch of the new software and their rugged handheld, scalers noted an appreciable difference in both gathering and transmitting data.

First, the transition was easy. "Most of our scalers were back to full production on the second day," says Crowell. Since then, he added, "Productivity has doubled for scalers who previously had to do double data entry — for both cubic and Scribner, for instance. And just based on the upgrades to the software and the ease of printing, telecommunications and data entry, productivity has increased 10 to 20 percent."

A big part of the increased efficiency comes from improved data transmission procedures. "What used to take a lot of time is now almost instantaneous," says Holmboe. "Using Ethernet, it takes about 10 seconds."

And so the scaling business continues with the same basic process that it has for hundreds of years—cut, measure, fix a price—but today's technology has made it a far smoother job than it was in the past.

**About Tripod Data Systems**
Tripod Data Systems(TDS) designs and manufactures mobile computing systems for extreme outdoor and industrial environments. The rugged TDS Recon™ and Ranger™ handheld computers help users collect accurate field data and work more productively in public safety, field service, utilities, military and other outdoor or service-related applications. Both TDS handhelds meet military specifications for drops, vibration, immersion and temperature extremes, and with an IP67 rating, they are impervious to water and dust.

TDS is a wholly owned subsidiary of Trimble. TDS is headquartered in Corvallis, Ore., and was founded in 1987. For more information about TDS, visit www.tdsway.com, e-mail handhelds@tdsway.com or call 541-752-9000.

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