



The Perp—detectives arrest a “fence” at Frontier Precision.

Surveying Equipment Theft

>> By Bryan Baker

Too many surveyors have had the painful experience of equipment theft at some point in their career, sometimes more than once. While no part of the U.S. is immune to these thefts, some areas are prone to more thefts than others.

A company security policy is the first step to helping keep your company from becoming a victim. A comprehensive policy should include three major areas: office, vehicle, and jobsite. These are the three primary locations where theft of surveying equipment occurs.

Office break-ins seem to be on the rise. A fleet of surveying trucks parked outside an otherwise overnight vacant office building is a billboard for would-be thieves, advertising that there may be a bunch of expensive equipment, computers, radios, and other tools inside the office, and possibly in the trucks as well.

Trucks are broken into at the office, on the jobsite, and even at restaurants in the middle of the day, usually because



Detectives search the fence's vehicle.

they look the same as many construction company trucks. Company logos on the side of the vehicles and the brightly colored plastic cases advertise expensive equipment. Many thieves are on the lookout for power tools that can easily be pawned at the nearest pawn shop.

It used to be that roadside thefts were usually limited to backsight prism setups. Now with robotic total stations and GPS, tens of thousands of dollars worth of equipment is left unattended on tripods in some very conspicuous locations. As a result, the cost of these thefts to the industry in the form of lost productivity, insurance premiums, and replacement costs is increasing. The good news is, there are a number of ways surveyors can help minimize the risk of loss from theft.

Office

There are many different styles of surveying offices. Regardless of the style, the first and foremost rule is to have a good alarm system. These systems are not very expensive to have installed and maintained. Generally, many insurance companies have a rate reduction that will help offset the monthly fee of these systems. Change the access code on a regular basis and every time there is employee turnover. If practical, limit access to the alarm system.

Store field equipment in a lockable, windowless room that does not have an outside entrance. Many companies have a room similar to this where batteries are

charged or data is downloaded by the field crews.

Office computers are a bit more problematic. Hopefully, the blaring siren of an alarm system will send would-be thieves away before any computers, printers, or plotters are stolen, however, storing a central server in a lockable, windowless closet ensures that even if the office computers are stolen, the data will be safe. (This is assuming, of course, that data is backed up on a regular basis.)

Vehicle

A secure vehicle is essential. Again, a good alarm system is an inexpensive deterrent to most thieves. Vehicle tracking systems are fairly inexpensive and will help only in those cases where the entire vehicle is stolen. Some are now factory installed. There are even some low cost systems used by construction companies for dispatching purposes that could be utilized for theft protection as well as dispatching, and customer billing.

Beyond alarms and tracking systems, the options get a bit more vehicle dependent. The least effective protection is a standard fiberglass or aluminum topper. While inexpensive and stylish, you get what you pay for in terms of equipment protection. Most of these, even when locked, can usually be pried open with a screwdriver. Most are also not integrated with the alarm system. Finally, the big windows on most toppers act like display windows for thieves to select from the variety of equipment housed inside. A

high-quality windowless steel topper with a good locking system offers the best deterrence to roving eyes. Removable magnetic signs that can be taken off at night will minimize the advertising that expensive equipment might be inside the vehicle.

Do not make the mistake in thinking that keeping equipment inside the cab is more secure. Windows are easily smashed and cases quickly grabbed. Take valuable instruments in the office every evening. If crews take trucks home in the evenings, demand that they remove the instruments and take them into their residences. Likewise, instruct crews that travel to take equipment into their hotel rooms at night for security. Many insurance companies will not cover a theft if it occurs overnight from the vehicle at a residence or hotel. Check the fine print on your policy for the specific terms as they relate to this matter.

Jobsite

This is the most difficult location to prevent equipment theft, especially since more and more expensive equipment is left unattended for extended periods of time. There are some inexpensive things that you can do to deter thieves for equipment in the field.

Try to put expensive GPS base stations and robotic total stations in lesser traveled areas.

I often see thousands of dollars worth of equipment sitting beside heavily

traveled roads with no visibility to any company employee. While sometimes there is no avoiding this scenario, most systems, certainly GPS base stations, do not require actually occupying a heavily-traveled control point. Check with your local trainer if you are not familiar with these unknown point techniques. At least with robotic total stations, you have to be within visible range to be using the equipment. Covering a quarter mile or more (even at Olympic speeds) makes it difficult to get a license plate number, much less stop someone from pulling over, gathering up a tripod, throwing it in the back of a truck and speeding away.

Most thieves do not know what they are stealing when they take equipment from the roadside. All they know is that it looks expensive, there is nobody around, and they can at least use the car battery that is powering the system.

Putting up a lath and flagging "triangle" around a base can be a surprising visual deterrent. It gives a type of "mine field" illusion to the area. For a few dollars, you can purchase a ground screw used for dog chains, a heavy chain and a padlock. Chain one leg of the tripod to the screw in the ground. This only takes a couple of minutes, and most thieves probably don't know how to get the equipment off the tripod. If you are continuously working on multiple jobsites, purchase multiple screws and leave them in the ground at your control points until you are finished with the project. If done correctly, this can also keep your equipment from blowing over in high winds.

Locking metal tool boxes are another good deterrent but they are heavy and you have to be careful about equipment, especially radio modems overheating during the warm months. Leaving another vehicle in the immediate vicinity is another good deterrent but it can become a victim itself. I know some people that leave the equipment locked in the vehicle with the antenna cables running through a partially rolled-down window.

It is a sad fact that some equipment is stolen by company employees. They know that in many cases a GPS system or robotic total station is worth more than their annual salaries. They may also have connections with other surveyors who are willing to overlook the fact that they are getting too good of a deal. Fabricating a story of theft is very simple for a dishonest employee out in the field

all day without supervision. While it is hard enough to get good help as it is, employers should have a background check performed on all company personnel (not just field crews) as a matter of company policy. This process can cost a couple hundred dollars but can provide red flags to those employees with a history of money problems that might be tempted to steal from their employers.

Equipment

It is crucial to maintain a complete inventory with the serial numbers of all equipment assigned to each field crew. This is also just good business practice. With the exception of cables and batteries, most all surveying equipment has serial numbers on it. Most computerized equipment such as GPS receivers, radio modems, and total stations have a serial number encoded in the internal computer. Manufacturers' serial number tags and company labels are easy to remove or cover over. Engrave or brand your company name and number on the equipment. Photograph all equipment associated with each crew. Make sure your insurance company has copies of these records and is updated on an as-needed basis.

Having a security policy in place using some of these suggestions for your firm will help reduce the chance of being victimized. In the unfortunate event that you are a victim of a theft, provide your local instrument dealers (not just the one you purchased it from, and not just the one that represents that manufacturer) with copies of the information. Most dealers I know are happy to cooperate with you and each other to help retrieve stolen equipment. Most manufacturers can flag a stolen serial number so that if it turns up at another service center, it can be tracked back to the original owner.

Insurance

Check with your local insurance professional regarding coverage for your equipment. After a loss is no time to find out that the fine print you didn't read on your policy excludes your particular circumstances. Ask the agent the hard and direct questions. Ask him to show you the clause that covers your question. Do not accept his word that you are covered for specific instances of loss. If it is not explicitly spelled out in the policy as covered, it is not. You may pay a bit more for some explicit coverages

including valuable equipment, and out of town use. Use a reputable insurance company. Being covered is of little use if the insurance company drags its feet or disputes every aspect of your claim.

Recovery

Recovery of stolen equipment, if it happens at all, can take a very long time. It is much better to try to prevent the theft in the first place. You can also help in the recovery of stolen equipment. If you are approached by a private party to purchase surveying equipment, check with local dealers of that brand of equipment. Have the local dealer inspect the equipment. There will probably be some nominal fee for their time to do this but this gives the dealer access to the serial numbers of the equipment, and makes it possible to run it by the manufacturer and verify the seller's account of the equipment ownership. There are also some telltale signs of stolen systems: incomplete systems such as GPS base stations without any rover equipment, and robotic total stations without the rover accessories. Beware of new equipment and accessories. These might have actually been stolen from an instrument dealer.

Be careful of equipment purchased through online auction companies, as a lot of stolen equipment ends up there. Same rules apply to those purchases. If it is a large purchase, run the funds through www.escrow.com. This allows the purchaser an inspection period after receiving the merchandise without the seller getting his or her hands on the money.

Conclusion

Equipment theft is a growing problem worldwide. Be proactive. Construct a plan to deal with the loss of equipment either through a backup system or with rental equipment. Make it every employee's job to prevent theft and loss and hopefully, you won't be the one returning to your survey truck only to find a pile of broken glass. In the words of our old statesman, Ben Franklin, "An ounce of prevention is worth a pound of cure." 

Bryan Baker is the sales manager for Frontier Precision Inc., a Trimble instrument dealer in Denver. Over the past 20 years he has helped recover more than \$250,000 in stolen survey equipment.