

# MOBILE ASSET TRACKING PROTECTS EQUIPMENT THROUGH IMPROVED ASSET RECOVERY

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**Summary**

The theft of construction equipment in the US has become a big business. As the value of equipment continues to rise and the need for equipment exists, thieves will continue to provide stolen equipment to unsuspecting buyers. Current methods employed by equipment owners lack the ability to quickly and effectively recover stolen property. With the advancements in mobile asset tracking, equipment owners and operators are better equipped to secure their equipment while realizing the operational power and benefits of actively managing assets.

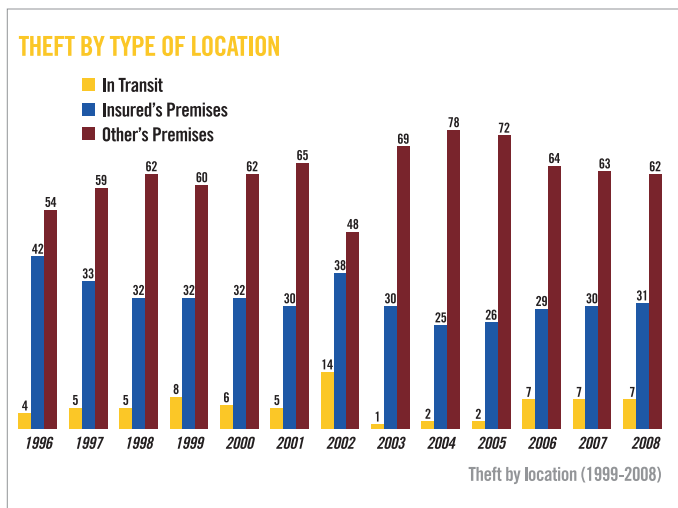
**Equipment Theft in the Construction Industry**

Protecting construction equipment at multiple locations has become more of a priority for companies that own, lease and rent equipment – regardless of size and type. Equipment Today magazine published an article in November 2008 stating that a 2008 Cygnus Research study commissioned by the National Insurance Crime Bureau (NICB) and others showed that 71 percent of equipment owners surveyed had been a victim of theft, with 29 percent experiencing five or more incidents.<sup>1</sup>

that are often targets of theft are: smaller and easily moved; of higher value, thus worth the risk of stealing; are in high demand; and are easily sold without detection – often times through eBay and craigslist.

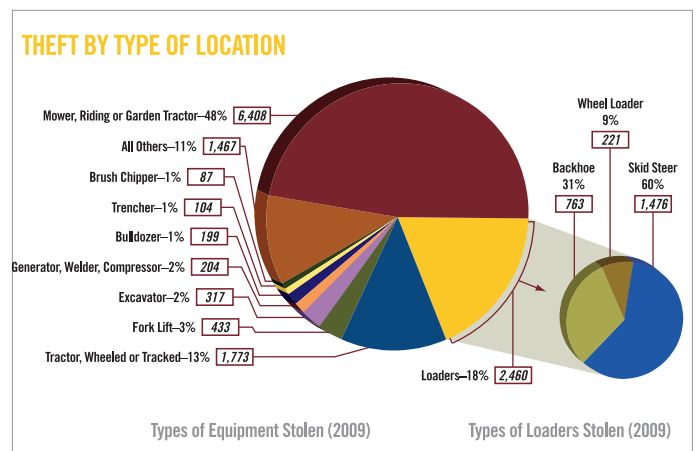
According to the 2009 Equipment Theft Report, published June 1, 2010 by National Equipment Register (NER) and the NICB, 13,452 pieces of equipment – ranging from riding mowers to excavators – were reported stolen in the US.<sup>2</sup> Of the top-five types of equipment stolen, loaders (backhoe, wheeled/tracked and skid steer) and forklifts ranked among the top targets of theft, accounting for 2,460 reported thefts (18 percent).

Equipment owners and insurers pay hundreds of millions of dollars a year to replace stolen equipment. Of the 13,452 reports of stolen machines compiled by the NICB in 2009, just 2,428 pieces of equipment, or approximately 18 percent, were recovered. This low recovery rate has led to an increase in the costs incurred by owners and insurers due to equipment theft, with annual estimates varying from \$300 million to \$1 billion, with most estimates in the range of \$400 million.<sup>3</sup> These figures exclude losses from business interruption, such as short-term rental costs, project-delay penalties, insurance costs (premiums, co-pays, etc.) and wasted workforce and management time.



\*Courtesy of National Equipment Register, 2009.

Considered a “low risk, high reward” opportunity, construction equipment is believed to be targeted by thieves because it is often poorly secured, is easily accessed due to open cab designs, often employs “one key fits all” ignition systems and, due to the lack of title and registration mandates, regularly do not have standardized vehicle identification numbers or serial numbers. Machines



\*Courtesy of National Equipment Register, 2009.

1. “Focus on Equipment Theft Recovery.” Equipment Today, November 2009.  
 2. 2009 Equipment Theft Report, National Equipment Register and National Insurance Crime Bureau (2009), pg 11.  
 3. 2009 Equipment Theft Report, National Equipment Register and National Insurance Crime Bureau (2009), pg 15.

## Current Equipment Security

Many owners and renters of construction equipment have taken precautions to reduce the risks of equipment theft. One popular method to thwart the theft and resale of stolen equipment is the use of keyless starting systems.

Keyless starting systems replace the equipment key either with a keypad or a key card. Several manufacturers, such as John Deere, produce equipment with a keypad that requires the operator to enter a personal PIN number to start and operate the machine. Other vendors provide transponder key cards with radio frequency identification (RFID) capabilities to start machinery.

Less advanced methods of security include: customized paint schemes; etching, die stamping or steel punching a unit's Product Identification Number (PIN) or other serial numbers on the equipment; equipment registration with NER; and expensive work site security, including lighting, fencing, video monitoring, manned security and equipment anchoring.

While keyless operations, equipment registration and heightened site security might help in the reduction of equipment theft, these precautions cannot provide much assistance in the recovery of stolen equipment.

## Mobile Asset Tracking

In recent years, aftermarket vendors have worked to provide extra security to equipment owners and renters and provide solutions tailored to the equipment of this industry. Providing technology that is small, rugged and easily hidden has become the industry standard. Today, solution providers have four different platforms to deliver asset location, both before and after the theft of a piece of equipment.

### *Global Location System (GLS)*

Unlike GPS, which requires onboard calculations to report location, GLS uses a ground-based computer to decipher data delivered via a satellite link and deliver information to the end user via the Internet. GLS terminals communicate data quicker than GPS terminals, requiring a brief operating window to transmit a signal to an operations center to calculate its location. GPS terminals require longer operating windows, waiting to receive satellite signals, calculating, location and transmitting coordinates from an

onboard computer in the terminal. This reduced computing power allows GLS terminals to operate longer on the same batteries in comparison to GPS terminals. GLS terminals can be easily attached to equipment, often times without the need for special tools, and can often utilize sensors to monitor engine hours.

### *Global Positioning System (GPS)*

A GPS receiver calculates its position by precisely timing the signals sent by GPS satellites and calculates its position via an onboard computer. The mobile terminal's location is then transmitted to the end user using a satellite or cellular signal, depending on the design of the terminal. Like GLS terminals, GPS terminals can be easily attached to equipment, often times without the need for special tools, and can often utilize sensors to monitor engine hours. However, due to the fact that location calculations are completed by the terminal itself, GPS terminals consume more power than GLS terminals. Additionally, if the GPS terminal is set to deliver location via a cellular signal, reporting may be intermittent based on location and cellular coverage.

### *General Packet Radio Service (GPRS)*

GPRS is a non-voice, value added, high-speed, packet-switching technology for GSM (Global System for Mobile Communications) networks. It makes sending and receiving small bursts of data, as well as large volumes of data over a cellular network possible. GPRS facilitates instant connections whereby information can be sent or received immediately as the need arises. GPRS service can often times decrease the incremental cost to provide data services, however is subject to radio coverage.

### *Radio-Frequency Identification (RFID)*

RFID uses small transponders, or "tags," to track the location of a piece of equipment using two parts: transponder and receiver. The transponder stores data and emits a radio signal that is tracked by the receiver. RFID tags have the advantage of not requiring an external antenna, like that of GLS, GPS and GPRS, allowing for the tag to be easily hidden. Nevertheless, RFID tags do have their drawbacks. As the oldest of the four technologies, RFID technology relies on frequency towers to transmit data. If the tag is in a remote location with poor frequency coverage, data cannot be transmitted.

## Benefits of Mobile Asset Tracking Beyond Security

Mobile asset tracking provides many benefits when it comes to asset security. The ability to locate lost or stolen assets provides a return on investment that pays for itself, sometimes with the recovery of just one asset. On the other hand, mobile asset tracking provides asset owners and operators with the real-time remote asset tracking needed to make highly informed decisions regarding equipment use.

Mobile asset tracking, when utilized, can help owners, operators and renters of construction equipment diagnosis problems, increase billing accuracy, prevent breakdowns, reduce unnecessary maintenance, enable operational improvements, extend equipment life and reduce overall operating costs. For companies operating in California, mobile asset tracking can assist in reporting run-time hours for portable engines in compliance with the California Air Resources Board's (CARB) Portable Engine Registration Program (PERP).

## Conclusion

The ability to track and recover stolen equipment can have a major impact on a company's bottom line. NER estimates that the average estimated value of a stolen piece of equipment is \$30,000 – <sup>4</sup> excluding costs associated with short-term rental charges, project-delay penalties, insurance costs (premiums, co-pays, etc.) and wasted workforce and management time. With some equipment owners reporting five or more incidents of theft, those operators could have saved more than \$150,000, plus additional expenses, by recovering stolen assets using mobile asset tracking technology. Additionally, if each unrecovered piece of equipment stolen in the US in 2009 was equipped with mobile asset tracking technology and recovered (11,024), assets owners could have saved over \$330 million dollars in equipment value alone.

Mobile asset tracking has a direct impact on the tracking and recovery of stolen equipment for companies that own, lease and rent construction equipment. With advancements in tracking technology, companies can now harness the power of information to increase operational efficiencies, reduce costs and optimize the use of equipment in addition to protecting their investments.

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4. 2009 Equipment Theft Report, National Equipment Register and National Insurance Crime Bureau (2009), pg 15.

## About SkyBitz

SkyBitz<sup>®</sup>, a leader in remote asset tracking and information management solutions, provides GLS, GPS and GPRS mobile terminals that deliver a reliable, easy-to-use information management solution that provides reliable visibility to assets anytime, anywhere. Combined with the easy-to-use SkyBitz InSight Web service, equipment managers can see, control and manage data using fully customizable reports without the need of complex integrations or software installations.

For more information about SkyBitz, visit us online at [www.skybitz.com](http://www.skybitz.com).

