

# Surveillance Systems 101

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**S**urveillance plays a unique role in the timber industry. Our work includes several hands-off processes, oftentimes with different suppliers and different management as wood moves through the fiber supply chain. This exposes the timber to possible theft and fraud. Complicating the problem, most of the hand-offs are done in remote locations, which can only add to the temptation. Your first step is to consider the entire fiber supply chain and your role in the process. Once you have fixed your position in the chain, you can then assess your company's exposure to potential theft and fraud. Focus on areas where you have little control or oversight for the work and where there is a transition from one process to another. Those areas should be monitored for red flags. If you do not have control over much of the process, or you have some glaring exposures, perhaps surveillance is right for you.

## The Five Ws of Surveillance Systems

Each business has common elements to consider in selecting a surveillance system depending on the size of the operation, the location, and even the budget available. At the same time, each is unique in its processes, exposures, and level of control. The five Ws help you think through the decision about whether to include a surveillance system as part of your own theft deterrence program. If there is a decision that some type of surveillance is appropriate, the five Ws will also direct you through the decision process to ensure you have the right level of equipment and technology to bring the greatest value for your investment.

Asking these questions up front can save headaches and regret later on. Too little or too much are both poor decisions.

### Why?

Why have surveillance cameras? By first defining the purpose for having a surveillance system and identifying how it fits into your total security program you will be better prepared to select the right equipment for the job. Remember that you are looking to establish a security culture that includes prevention as well as detection. Cameras can support both. A well-thought out and comprehensive solution considers cameras as an independent source of information and a

tool that communicates that you are serious about theft and will take action if needed. If cameras are the only element of your program, you ultimately create a "gotcha" mentality that can undermine your efforts to build a supportive climate for honesty.

### Where?

Consider the following questions when trying to decide what areas to monitor:

- Does your operation dictate a need for surveillance at remote locations, e.g., contractors and gates, or in the wood yard or scale house?
- Do you want the cameras visible as a deterrent or hidden to provide an independent source of information?
- Where is the best placement to ensure activity is adequately monitored?
- Where cameras may be placed dictates the appropriate power sources.

### Who?

In addition to where on your property you place surveillance, asking yourself who the appropriate person or persons to do the monitoring, as well as for whom you are actually monitoring is also an important one:

- Who will deploy the system? Employees or independent contrac-



there's a problem as part of a systematic approach to fraud prevention?

### **What?**

Consider factors such as ease of installation, sensors vs 24-hour recording, repeatability, power utilization, serviceability, and system flexibility when deciding what kinds of surveillance equipment to install. Once the other Ws are answered, you will be better able to address these questions:

- What type of documentation capabilities will be needed? Consider factors such as Evidence Integrity (Watermark), night vision abilities to ensure clarity 24 hours per day, archival requirements, and ease of footage review.
- What is the right amount of money to spend? Determine your budget considerations and overall program and plan equipment needs appropriate to your situation. Consider budgets for surveillance systems to range from \$1000 to \$10,000, with a wide variety of options in between. Buy only what you need to support your program or outsource your camera surveillance audits to qualified individuals.

Answering these questions allows you to think through your own security needs so you can make a thoughtful and planned decision about how surveillance fits into the total picture. It is a decision you might have to consider periodically as you strive to continuously update and improve your fraud and theft prevention efforts. Once you've established your needs, you can begin evaluating the wide variety of equipment that is available and select what is right for you and your budget.

### **Time to Buy**

If you have made the decision to move

forward and purchase a system, the next steps are to consider how much is the right amount to spend on the system (always an appropriate consideration) and what the options are within a given price range. This discussion is focused on the remote surveillance systems deployed in the woods to monitor vandalism, illegal trash dumping, and log hauling patterns. And for the purposes of this discussion, a camera surveillance system includes a power source, camera, camera monitor, recording device, waterproof enclosures, and connectors. As with most things, there are low-end systems and high-end systems.

### **Comparing Low- and High-End Camera Systems**

Originally, low-end systems consisted primarily of VCR time lapse machines with large batteries to power the system for a five- to seven-day period. Although the technology has been around for a while and there are slicker options now, these legacy systems are still being used by a few companies since they are easily deployed and relatively reliable. However, if you are looking to get started, those systems are no longer available on the market. Low end DVRs (digital video recorders) have taken over the VCR environment in much the same way as digital cameras have replaced film. With these DVR cameras, the image is recorded to a memory card instead of film.

The lowest of the low end surveillance system is a simple set up known as trail cameras or "deer cameras." These units are sold in most outdoor stores. They are relatively inexpensive (\$200 to \$500), not difficult to operate, and the unit includes batteries, camera, and recording medium all in one device. To operate, you mount the entire device with a clear field of view

tors?

- Will there be one person available all the time or will it be passed among different individuals?
- Who is the subject of the surveillance: contractors, employees, vandals, etc.?

### **When?**

When should the cameras be set up? After a vandal strikes? After a tip that you're missing something? After your suspicions are aroused? Or, before



to a tree or a fence post. It will detect motion and capture still images of the activity. Some of these units include cameras that have day/night ability, meaning the camera takes color photos during daylight hours and switches to black and white at night. Some of the systems also provide “infrared lighting” to allow the operator the ability to manually light the area in front of the camera at night. This is helpful if you can actually see what set the camera off in the middle of the night. The downside to these systems is they are one of the more difficult to hide as they need to be close to the action to be effective and the entire unit needs to be mounted on the tree. It may fool deer, but not necessarily intruders.

The next level of system available is any unit with a DVR as the “brains” of the system. These systems normally begin around \$2,300 and range up to \$9,000. Wait, you say, I saw a DVR on the Internet for \$500? Well you may have, but it was not a system that lends itself to being placed outdoors. Low-end DVR systems are normally pixel motion activated and can be programmed to monitor only one aspect of the picture. An example of this would be to have the camera focused on your house and then you program the camera to activate automatically when something moves at the front door. The rest of the picture is ignored. Obviously if the location of the camera is compromised, an intruder may either be deterred from entering or just deterred from entering in the range of the camera’s sight.

The same pixel motion activity is utilized in almost all DVR systems sold today, but as the price increases you gain greater flexibility in programming, lower power requirements, and longer manufacturer warranties. Once footage is captured on the DVR, most systems allow for playback of the

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footage on a computer. One of the more expensive systems available has over 20 programmable menus, can record 24 hours a day, 7 days a week on up to four cameras at once, and during playback the screen provides the user a “motion graph” which details where the action happened during recording. This allows the users to focus on those areas where there is activity and ignore the times when nothing moved in front of the camera. A great time

saver during review!

Now, as with all things, you can customize and accessorize as much as your heart desires with accessories, such as sensors, a range of cameras, and power sources.

#### **Where Can I Learn More?**

There are dozens of considerations for each application. What works well in the woods may not work well in a scale house environment, and vice versa.



Each camera deployment is unique and any number of things can cause your camera to quit operating. So do not be shocked if you retrieve your camera and find you only have footage of you while you were installing the system and nothing else. If you find that happens to you, keep in mind you can

always outsource your camera audits to professionals.

For some of you this discussion was too basic and you want more details. If so, please feel free to contact the author, who can answer your questions or provide additional information.

#### **About the Author**

Aaron Gilland, CFE is the founder and President of Dendro Resource Management, Inc. (DRM), which has been in business since 2001. DRM is a timber audit services company specializing in theft and fraud prevention within the forest industry. Aaron's previous work experience includes employment with Westvaco, Canal Wood Corporation, Canal Industries and Canal Forest Resources, which includes 8 years in wood procurement and 15 years in forestry operations auditing and timber security. He can be reached at (803) 438-6139 or [agilland@dendroresourcecmgt.com](mailto:agilland@dendroresourcecmgt.com). ♦

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