

# INSPECT your machine like an EXPERT

*When it comes to machine health, operators are the first line of defense. They are the ones working the machines day and night. So at Cat Magazine, we thought it was important to illustrate the importance of daily inspections and how they can significantly decrease unexpected downtime.*

For expert analysis, we spoke with Jeff Payne, a 33-year machine inspection veteran and Fleet Monitoring Center Implementation Manager.

"The biggest thing for me is to uncover small issues before they become large, expensive problems that waste a great deal of time and money. No one wants unproductive machines on site that are in the repair shop," said Jeff. "For example, if a cylinder is leaking oil, not only is it bad for the environment, but as you cycle that cylinder, dirt and dust are pulled back through. Soon that will contaminate your whole hydraulic system. Now, instead of a simple repair, it becomes a complete hydraulic system flush and there is potential damage to multiple system components."

As you can imagine, with 33 years in the industry, Jeff has a wealth of information when it comes to machine inspections and safety. We've summarized much of it here. In fact, he had so much information, we increased this article from two pages to three pages. And, he also gave us a sneak peek at the new Cat® Inspect app (see inset).

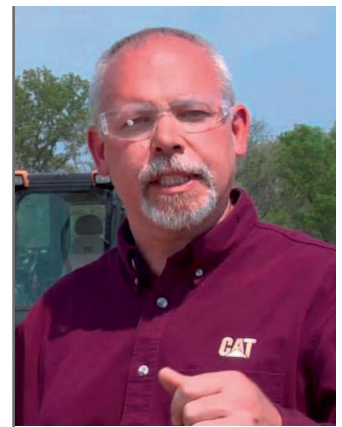
#### NEW INSPECTION TOOL COMING SOON

Caterpillar is busy finalizing a new app for machine inspections. It's called Cat® Inspect. With it, operators will be able to use it with mobile

devices like tablets and smart phones to take pictures and add text during inspections.

"This app is great. Operators can have the appropriate check list right in front of them so they can mark things off or call attention to certain areas as they go through inspections. We use a stoplight way of looking at things. That simply means a green response if it's ok to move on. Yellow means the operator has identified a problem, but that it's something that can be scheduled for the next maintenance interval. A red mark means a particular area needs immediate attention, something that would damage the machine if operation were to continue or something that's a safety concern," said Jeff.

Customers and operators should be on the look for Cat® Inspect later this year. The app will even connect with VisionLink®.



*"I want to know what the machine is saying, and I use a lot of my senses when I do an inspection I am looking, listening and smelling but I stop short of tasting."*

Jeff Payne, machine inspection veteran and Fleet Monitoring Center Implementation Manager.

The Cat Inspect App will be available later this year.





### THREE INSPECTION TYPES:

#### DAILY INSPECTIONS



Before each shift, should take about 10 to 15 minutes. This includes checking the fluids and a four-corner inspection and greasing.

#### A TECHNICAL ANALYSIS 1 (TA-1)

*BETWEEN 250-500 HOURS SERVICE*

A more in-depth visual inspection, which takes 30 minutes to an hour and includes Lower, Mid, Upper and Implements and attachments. Spend more time than a daily and really look the machine over good.

#### THE TECHNICAL ANALYSIS 2 (TA-2)

*AT EVERY 2,000 HOURS*

A very in-depth analysis that requires specialized tools and a skilled inspection person to check areas such as cycle times, system pressures and engine power. A TA2 gets your machine adjusted back to peak operating condition.

### WHAT IS YOUR MACHINE TELLING YOU?

- Operators should also listen to the engine for noises like rattling or thumping
- Look and see if the exhaust system producing white, blue, black or grey smoke
- Operators typically don't notice reduced power until their machine has lost about 20 percent efficiency, usually in the hydraulic system.

Additional details at: [www.cat.com](http://www.cat.com)



#### THE FOUR-CORNER INSPECTION:

Check the electrical system, especially for rubbing or loose wires.



#### FLUIDS:

Fluid level check: this includes fuel, oil, coolant and hydraulic fluid. Low fluid levels can damage machines.



#### FLUIDS:

Make sure there are no puddles of fluid under the machine.



**THE FOUR-CORNER INSPECTION:**  
Look for anything that might be loose, bent, damaged or cracked.

**THE FOUR-CORNER INSPECTION:**  
Check cylinders and hoses for leaks, rubs or abrasions.

**FLUIDS:**  
Everything that requires grease should be greased every 10 hours – or once per shift.

**THE FOUR-CORNER INSPECTION:**  
Inspect cutting edges, teeth and adapters.