

# For the Trenches

TIPS & NEWS FOR EQUIPMENT OWNERS AND OPERATORS

## Evaluate, Set, Go! The benefits of a machine evaluation

Before you start the season you want to make sure the machines you're counting on the most are ready to deliver for you. A comprehensive machine evaluation includes a



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thorough inspection as well as an estimate on labor and parts for bringing each machine to the level where you need it to be.

A machine evaluation is a comprehensive inspection of the entire machine. A good evaluation should be performed by two people, a certified technician and a parts and service sales representative or PSSR; and, it should cover what's not working as well as what is working well.

What are the benefits of a well-done machine evaluation? It allows you to budget correctly

for maintenance, repairs and parts; it gives you confidence that any machine that passes the evaluation is really going to perform for you during the next season; it's a great decision-making tool when you're asking yourself whether it's worthwhile to repair a machine, or is it time to trade it, or to budget for a new machine for next year. And last but not least, it provides great value as documentation at selling time.

Some equipment owners may assume that machine evaluations are for "the big guys," and that a small municipality, or a contractor with an excavator and dozer, cannot afford one. The question should probably be turned around – can a small municipality, or a two-machine contractor afford to begin a season without knowing with certainty that his equipment is going to perform for him, or without a firm figure in mind for making sure it will – or a reason to ask the town for a new machine to be budgeted?

At the other end of the spectrum, you may wonder why large companies with extensive fleets and in-house service teams don't just let their own technicians do the evaluation. There are many reasons why they don't. Large companies have formal maintenance budgets and they find it very advantageous to have machine evaluations on their rolling stock performed professionally so they can plan accordingly. Chances are their equipment dealer has more knowledge depth and years of experience than their own people do; dealers' technicians are continuously trained by the manufacturer and are kept up to

date on the latest technologies. It can happen that a company's own staff is already busy doing equipment repairs and cannot be taken away to do evaluations. Often, if a company has multiple locations, fleet managers don't have every piece of equipment under their thumb every day and are not getting enough reliable feedback on the details of how a machine is functioning.

In any case, whether your company is small, very large or somewhere in between, nothing beats the value of the confidence that a professionally done comprehensive evaluation will give you – you will know for sure which machines will take you successfully through the season, which ones need work, how urgent that work is and how much it will cost, so you can budget for it or decide that it makes more sense to trade that particular machine.

### What should a good evaluation cover?

The inspection begins with the overall physical condition of the machine. Cab, frame, body, booms, lift arm... everything is carefully looked at to see whether the gauges are working properly, and to identify any leaks, and check for loose joints, cracked booms, and cracked or chafing hoses. In addition, all fluid cavities are sampled and analyzed and also, and this is very important, filters for each system are cut open, inspected for debris and replaced by new ones.

**Machine Evaluation Report**

Report completed by: Brent MacLaughlin and Dave Penney

Date: 10/10/10 Requested by: [Redacted]

Customer Name: [Redacted] Address: [Redacted] City, State: [Redacted] Zip: [Redacted]

Machine Location: [Redacted] Model: 990F Engine Make: Caterpillar Model: 3116

Trails: [Redacted] Address: [Redacted] City, State: [Redacted] Zip: [Redacted]

App: Number: [Redacted] Ser: Number: [Redacted] Ser: Meter: [Redacted]

App: Number: [Redacted] Ser: Number: [Redacted] Ser: Meter: [Redacted]

Owner Equipment Number: [Redacted]

Sample Taken:

**COOLING SYSTEM**

Coolant Level / Visual Condition

Leaks

Coolant Concentration / % of Glycol

Temp. Recorder Label (if equipped)

Belt Drive

Radiator Screen

Radiator Pressure & Cap

Fan & Fan Hub

Fan Belts, Pulley & Belt Tightness

Water Pump

Comments: Radiator - Coolant temperature sensor not working

**TORQUE CONVERTER**

Oil Level / Visual Condition

Leaks

Oil Temp. & Color

Shift & Linkage

Gearbox

Comments

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Next comes an inspection of all systems; powertrain, hydraulics, cooling and electrical, and those tests should be done not just by looking over the machine, but by running it through its cycles, checking cycle times, transmission, hydraulic pressures and temperatures for all systems, against specifications. By the way, this is one of the two reasons why having two people involved in the process makes a difference, since one of them will be running the machine and the other one, monitoring the performance. The other reason? The trained technician is an expert at inspecting, while the role of the PSSR is to take all that information and use it to give you an evaluation as well as an estimate for parts and repair.

Depending on the machine and its condition, a complete evaluation is typically done at your location and it takes four to six hours to perform. Another two to three hours are needed for the PSSR to prepare and present a final report, typically 14-16 pages, accompanied by a line item quote detailing the cost to make repairs and get parts not only for the problems found, but for predictable failures as well.

### Taking action.

Depending on your industry you'll have different seasons, and you should plan your evaluation when it makes sense to your business, either pre-season or post-season. One exception: if your machine is scheduled to get a \$20,000 engine overhaul, it may be a good idea to have a machine evaluation done on it beforehand, to make sure that overhaul is worth doing.

As far as the age of your machine, in general, machines with 6,000 - 8,000 hours are good candidates for an evaluation; it all depends on the application. If you have a secondary machine to back up your primary one, then the primary can probably go longer without needing an evaluation.

After you find out that certain repairs are needed on a machine to get you through the season, you have choices – you can decide to buy the necessary parts, and do the repairs yourself. You can decide to postpone the repairs, making do with other machines, renting maybe. You can choose to replace the machine, trading it for a newer one. Or you can have your dealer handle the repairs. The point is, whatever route you choose you'll take it with confidence.

### In summary, what do you get from a professionally executed machine evaluation?

**Confidence.** You want to be able to count on the reliability and readiness of your equipment. Confirmation is part of a good evaluation!



**Cutting and inspecting the filters is an important, and telling, aspect of the evaluation.**

**Budgeting.** You want to be able to manage repair costs and plan to implement them when it makes the most sense for your operation.

**Decision-making.** Choose if you fix it, when you fix it, who will fix it, or whether you'll trade it and or buy another. ■

**Milton** 

*This article is part of a series of articles designed to help equipment owners and operators lower owning and operating costs. Other article topics include:*

*Emissions • Scheduled Oil Sampling • Parts Options  
Certified Rebuilds • Getting the Most from Your PSSR  
(Parts and Service Sales Representative) • CSAs (Customer  
Service Agreements) • Financing • Safety*

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