IMPROVING ACCURACY AND PRODUCTIVITY FOR WHEEL LOADERS- VOLVO LOAD ASSIST

Part 2: On-Board Weighing
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In part one of this Load Assist series — the Volvo program that provides real-time data to wheel loader operators — I explained the differences between the 1% and 2% accuracy modes for operators. Now, we'll focus on On-Board Weighing, which is essentially the scale that ensures machines shift the optimal load.

Operators love it for its simplicity — the data is displayed on one of the largest in-cab screens in the industry, making it easy to see from the seat. The rearview camera is also popular. It can be displayed in split-screen or full view to ensure added safety for applications where there's a lot of people or equipment around.

On-Board Weighing is incredibly easy to use. The examples below explain its primary benefit, and I've included a few scenarios highlighting some of its most-

used features:

On-Board Weighing

In part one, I described the quick process for calibrating your Volvo wheel loaders, with and without a known weight. Now you're ready for a full day of loading. Let's say you have a truck come in with a target of 23 tons. Your operator can fill his bucket and dynamically weigh it — he doesn't have to be stationary — and as he drives up to tip the load into the truck, it'll lock in the weight. This means the operator can see on the Co-Pilot display the exact weight of the load he's about to dump. If he unloads 12 tons on the first pass, the next bucket needs to weigh 11 tons. He can grab the second load, tip off any overage and reweigh it at exactly 11 tons, then dump it in before the truck heads off for the scale. Most operations use the On-Board Weighing app to ensure the load is accurate before they send their trucks down

to the scales. This is important since the scale weight is what's used for billing and invoicing purposes.

With Load Assist, you have two work modes to choose from depending on the type of job you're doing. Project mode allows you to monitor and control the total load of multiple trucks, and Trip mode is ideal for loading single trucks, crushers or other stationary equipment.

Project mode

Suppose a highway contractor needs 60,000 tons of sand and 40,000 tons of gravel delivered to a concrete batching plant. If you have nine trucks delivering to this customer, you can use Project mode to set up a work order.

1. First, you set the target at 60,000 tons of sand and 40,000 tons of gravel.
2. Then, you add the names of each of your nine trucks. This makes it especially easy if your trucks have different weight restrictions.
3. Next, you set up the material you're delivering (sand and gravel). This gives you the ability to monitor and track the material that's being delivered by each truck. The operator in the cab can also monitor what he's loading during the day.

Project mode allows you to go in at the end of the day and export data from a flash drive: the different projects, the different trucks, the different material that was delivered or sold during the day. With Project mode, you'll see every truck load, when a particular operator started loading his truck, when he finished, what material he took, what the truck name was, etc. You can monitor a project and know exactly when you're ready for the next stage based on the data — it doesn't matter if you're 6 miles away or 600.

Trip mode

You can basically load as many trucks as you want in Trip mode. You can set up different trucks with different targets and work to hit it: 23 tons, for example. Then you just reset it and go again. It's incredibly simple to use. In Trip mode, no data is stored — you're essentially weighing the load every time you take a trip with material in the bucket and dump it to control the weight going to the scale.

Both modes help you prevent overloading or underloading. Overloading is unsafe and risks fines. Underloading means trucks have to come back for additional loads to hit the target. If your typical daily run is 300 trucks and you're underloading by 10%, now you need 330 trucks to hit your target. You'll burn more fuel, and with longer hours, you may have to give your operators overtime to manage your productivity. Inaccurate loads really affect the efficiency of a site.

Look at the numbers

If your limit is 23 tons, but you're only delivering 22 tons, you're one ton off. If you did 20 loads a day, you're now off by 20 tons. Multiply that by 300 work days, and you're off by 6,000 tons. At $5/ton, for example, that's $30,000 you could be losing every year by underloading.

WHAT UNDERLOADING COULD BE COSTING YOU

23 Ton Truck Limit
22 Tons Delivered per Pass

= -1 Ton per Load in Lost Productivity
x 20 Loads per Day

= -20 Tons per Day in Lost Productivity
x 300 Work Days per Year

= -6,000 Tons per Year
@ $5/ton (estimate)

= **$30,000 in Lost Productivity per Year**

From accurate loads in quarry, aggregates and road building to separating and weighing loads of precious metals in scrap rehandling or even weighing logs before processing, Load Assist gives you the best potential to maximize your profits in any loading application. If you're used to manually managing this type of data, Load Assist allows you to download the data on a USB and plug it into your ERP system for easy reporting. While you can't invoice customers from the data, it does give you valuable insights to what's occurring at your sites for possible enhancements. Another advantage is the data is stored on the machine rather than requiring someone to take the information and manually record it on paper.

VOLVO

Volvo Construction Equipment
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