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ON-BOARD SCALES PUT YOU 'WEIGH' AHEAD

GETTING FREIGHT LOADED EFFICIENTLY IS ABSOLUTELY THE NAME OF THE GAME IN THE INDUSTRY TODAY.

The efficient loading of freight takes on new importance in these days of new driver hours and higher fuel prices. You absolutely have to get a truck loaded in the shortest time possible, loaded correctly and loaded to the maximum.

Doing so will eliminate out-of-route mileage, not to mention the time taken to check the weight to make sure the load is legal both on gross weight and on axle loadings. And this is not just the case for bulk loads, where every pound counts as revenue dollars. It is equally important for freight in a 53-foot van where you must scale the maximum load offered but no more.

Even when a truck is grossed out under 80,000 pounds, the combination can be fined for axle spreads in many jurisdictions because the trailer kingpin to axle dimension is too long.

One solution is to measure weight on a combination's axles in real time using on-board weighing. And while that has been possible with aftermarket on-board scales, several announcements lately have moved on-board weighing into prime time.

Steve Sturgess
Senior Editor

These all center around Air-Weigh, the major supplier of on-board scales with around 95% of the business. Others include the more expensive load-cell and strain gauge technologies or the simple and much less accurate suspension air gauge.

The first event that propelled Air-Weigh into the limelight recently, was the company's announcement of an in-dash two-inch round gauge. Designated the AW5800, this unit not only put an LCD digital gauge in the dash, the redesign took the expensive, fully encapsulate ECU off the frame rail and moved it to the much more hospitable location up behind the dash. So as well as integrating the display into the dash, the unit was priced more competitively – a bonus for the customer.

This new in-dash display has all the functionality of the previous on-dash head unit and can easily be accommodated in a regular gauge position. As such, it is a ready replacement for the old tandem suspension air pressure gauge that for years has been a driver's guide to the weight on the fifth wheel.

Another boost to the Air-Weigh scale use comes in the form of an air-ride announcement for the Hendrickson walking beam, the newly introduced AR2. This is a factory, air suspended walking beam like Canadian supplier Raydan's successful air-ride conversion for the Hendrickson, which has been available for a number of years.

With the AR2 comes the benefit of Hendrickson-supplied improved air ride for its legendary vocational suspension, along with the ability to add Air-Weigh's very accurate weighing. This allows vocational users – who are often the biggest winners in weight management solutions – inexpensive weighing through air pressure. Otherwise, they may have had to invest in the more expensive strain-gauge and load-cell technology.

The Air-Weigh option has been well accepted by trailer manufacturers and customers for some time now. The technology has been widely available as an option from most trailer brands. And at most truck shows, virtually every trailer exhibit features an Air-Weigh scale.

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But the ready acceptance of the Air-Weigh load management system has now moved into high gear with the announcement that Freightliner will offer the Air-Weigh AW5800 as a data-book option. That means you can now spec a Freightliner, Sterling or Western Star with an on-board scale as a factory option, greatly simplifying its installation and making it part of the truck finance agreement.

And there are several other truck manufacturers in the option approval process, so look for load management to become a widely available tool.

Given a payback of less than a year, the specification of a load management tool should be a no brainer: It actually returns money over most of the life of the truck. And it boosts resale value, too. For example, if a check-weigh is a common practice, where scales may charge around $9 for a check weigh, experience shows that the real cost (when out-of-route miles, fuel and time are factored in) runs around $20-$30.

THAT MEANS YOU CAN NOW SPEC A FREIGHTLINER, STERLING OR WESTERN STAR WITH AN ON-BOARD SCALE AS A FACTORY OPTION.

So the few pennies the option puts on the price of a truck will be saved in as little as one week every month. Thereafter, the scale is making money. For a return on investment for each individual's operation, there is an ROI calculator at *www.air-weigh.com/benefits*.

Return On Investment

How does the real-time scale offer such a fast payback? There are several reasons that can be quantified in hard savings, such as the elimination of check weighing. Then there's the opportunity to maximize revenue if the vocation pays by the hundredweight.

But there are also the less tangible savings on overweight or over-dimension tickets. And there's a soft payback that can only be guessed at: How much value can you put on a driver's comfort and contentment? The ability to scale a truck's weight by gross and by axle and to know that everything is legal takes a monkey off the driver's back.

Other soft benefits include not having to return to the loading point to drop off excess freight – especially when that check weigh is at the end of the day and the next opportunity to offload is the following morning.

And there is the driver's ability to refuse extra pallets that somehow get added to the shipment to put the truck overweight and the driver under an obligation to run around the scales.

According to Peter Powell, Air-Weigh's vice president of marketing, when properly used, the scales are accurate to within 300 pounds of the weight obtained at a certified scale.

In fact, says Powell, with practice and familiarity, most drivers can even get more accurate than that. They are not legal for trade, in that the weight shown cannot be used for billing purposes, but there are many cases Powell will point to where the Air-Weigh information – which can be printed from some of the scales – is accepted by the shipper and receiver as an accurate weight.

Powell said users have told him that in some portable-scale sites, the inspectors will wave on an Air-Weigh equipped vehicle based on

the evidence of the dashboard gauge rather than go to the trouble of setting the vehicle on the portables.

In hauling bulk materials, the scales have an even faster payback – especially when a truck is operating out of a pit that observes the 2,000-pound rule. This says a truck cannot go back around to the loading deck if the weight is within 2,000 pounds of the gross weight. That can be bad news because the last ton might be the profit on the haul.

Air-Weigh has a cute trick for ensuring the co-operation of the loader in such a situation. There's a pigtail on the ECU that can be connected to a signal light to indicate when the scale is nearing its preset limit. By positioning the signal lamp where the loader can see it, the dump body can be filled to its legal capacity every time, speeding the turnaround for the truck and for the loader as well.

End dump trailer operators can avail themselves of an option that senses the load on the suspension and also the load on the lifting cylinder. A driver merely lifts an end-dump a couple of inches so the ram is pressurized and the load measuring is enabled.

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Other vocations where the scales offer significant savings include flatbed operations, where the placement of machinery on a trailer is critical. Having a crane wait on standby while a driver heads for a check-weigh is a huge expense – and unnecessary when the driver can see the axle weights as the load is positioned.

Premier Transportation and Warehousing specializes in the transport of paper mill machinery. Their rigs can haul equipment and paper rolls across the country aboard a 157-foot, 13-axle tractor trailer configuration that can carry up to 160,000 pounds distributed legally over the axles.

"We spare no expense in facilities and technology, ensuring our equipment and vehicles are maintained to peak performance so we can provide the best service possible to our clients," said Phillip Keller, vice president of Premier's southeast region, based in Charlotte, N.C. Since 1997, an important part of the company's commitment to time and money saving technology has been installing on-board scales on the fleet's 60 trucks and trailers.

"Based on how much the load weighs, we are required to buy permits for each state we travel through," Keller said. "On-board scales have enabled our dispatchers to obtain permits quicker and to maintain respect and rapport with the various state departments of transportation we work with on a day-to-day basis.

"By knowing how much a load weighs at the loading site, we buy only the amount of permitting required for the job. At the same time, our drivers avoid unnecessary stress and wasted time associated with trying to find an in-

ground scale in a location that will accommodate a 157-foot trailer carrying an oversized load. We've totally eliminated the stand-by crane and operator costs associated with having to use commercial scales. Plus our drivers are only securing the load once, so it's safer and a much better job experience for them."

Livestock haulers and others loading at farms and other sites off the beaten track know the value of real-time load information.

"We haul cattle and hogs, so one of our biggest problems was overloading, because once they're on the truck, you can't take them back off until you get them to their destination," says Pat Hoffman, of Hoffman Trucking, Sherwood Park, AB. "With scales on our International and Kenworth tractors pulling a pair of Merritt livestock trailers, the drivers can weigh as they load." Similarly, Mark Heppner of Heppner and Sons in Meadow Lake, Sask. says, "With a special permit from Saskatchewan to haul logs out of the north, we can gross 62,500 kgs over six axles, but we've got to be sure we're never overweight."

And in general commodities, building materials and bulk, getting the load right first time is a big plus for the drivers.

"On-board scales save our drivers up to two hours a load because they know exactly how much they weigh and how the weight is distributed before they ever get on the highway," said Ray Halsey, owner of WHW Inc., a Billings, Mont.-based fleet that hauls bulk agricultural commodities, cement and caustic chemicals throughout the Pacific Northwest. Oftentimes Halsey's WHW drivers load at small companies in remote sites. In one particular case, they routinely drove 30 miles back and forth over state lines just to find a scale. "With on-board scales, our drivers load up and they are gone," said Halsey, whose fleet includes 13 Peterbilt tractors that pull Beall dry bulk trailers and stainless tankers.

"It builds a driver's confidence because they always know exactly how much weight is on the drive axles and the trailer.

The suspension air pressure sensor is installed in the existing under-dash air gauge air line and the ComLink ECU is mounted out of the way under the dash.

Scale Operation

The on-board scale reads load from the air pressure in an air suspension. It is a highly accurate version of the tandem air gauge, but it offers a lot more functionality. For one, it is vastly more accurate – able to sense weight changes as small as 30-40 pounds – and it displays weight in 20-pound increments. The Air-Weigh unit also brings trailer weights up to the dashboard display. And, once calibrated – a simple process and one that is automatic for most trailers – the electronics will also calculate the front axle loading and display it as one of the readouts on the dash gauge.

With acceptance of the Hendrickson Airtek air-suspended front axle (optional at Freightliner brands and Mack, and standard on premium Volvos) it is now possible to directly read front-axle weights through Air-Weigh's transducers. This is a particular plus for expedited haulers running two- or three-axle straight trucks.

Trailers equipped with the scale have their own display, but they also communicate with a scale in the tractor. Using its proprietary power-line carrier or doubling over the truck's ABS PLC communications link, the trailer load information is communicated over the tractor-trailer J560 7-pin cable without needing a dedicated wire.

The scale can also work on combinations that don't have weighing on the trailer. Providing a combination is at or under 80,000 pounds, a driver can slide the trailer tandem back and forth until the drive axles scale the legal 34,000 pounds, with 12,000 calculated for the front axle. The weight on the trailer tandem then has to be the remaining 34,000 pounds and – providing the kingpin to axle on the trailer is legal – the whole outfit is good to go without a check weigh.

And Air-Weigh has been developed for multi-axle rigs, including heavy-haul outfits with jeeps and boosters, so the average tractor trailer is simplicity itself for the weight management experts.

Powell talks a lot about weight management. He cites not only the above benefits, but also points to the fact that, with weight information communicated to dispatch, the billing cycle can be shortened. Also, discrepancies between freight offered for tender and the actual weight when picked up can be identified and billed appropriately – with weight documented by truck-to-dispatch communications.

As Powell points out, the business of trucking is hauling freight. The more you know about that freight – especially its weight – the better your business will be. ■

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