

The Measure of a Good Delivery, by Carla L. Romita

The Mann Report, November / December 2006

In today's high-priced energy environment, besides worrying about having enough heat, you may wonder if you are getting all the oil you are paying for. If you are dealing with a reputable oil company with many years in business, you need not be unduly concerned. However, because mistakes occasionally happen, there are things you can do to ensure accurately measured oil deliveries.

Many buildings have installed volume gauges on their oil tanks. Tank gauges fall into two categories, manual and electronic. A manual gauge measures the volume of fuel oil contained in the tank in inches. The superintendent or engineer consults a chart to translate the number of inches into the number of gallons of fuel oil in the tank. Problems can arise if the gauge was not properly calibrated upon installation, if it loses calibration, or if the person reading the gauge does not use the exact number of inches shown on the gauge to determine the volume in gallons. For example, if the gauge shows 36 3/8 inches but the superintendent or engineer mistakenly looks up 36 inches on the chart, the difference can be 33 gallons in a 5000 gallon tank.

Electronic tank gauges, which are in demand now and have recently achieved better accuracy, have some drawbacks. This newer type of gauge automatically monitors the tank and sends information electronically to a remote reader. Electronic tank gauges, like manual gauges, must be properly calibrated at the time of installation. Proper gauge calibration for both manual and electronic gauges requires emptying the tank and refilling it while taking measurements at various intervals during the filling process. Electronic monitors tend to lose their calibration after power failures and surges. When this happens, most gauges will revert back to the manufacturer's default calibration, even if the gauge was properly custom-calibrated for the individual tank when it was installed.

Even if no power issues arise, the calibration needs to be verified on a regular schedule to ensure accuracy. The conditions inside a petroleum storage tank are different from tank to tank. Moisture, heat, sediment, and wax build up can all affect the probes and instruments used in electronic gauging systems. Sensors or probes can become coated, and distorted readings may be sent from the monitor. The probes must be periodically cleaned to ensure that they are taking accurate readings.

Custom calibration for the specific tank in each building is required because every tank, just like every building, is slightly different. A 5000 gallon tank in one building is not exactly the same as a 5000 gallon tank in the building next door. When most New York City buildings were converted from coal to oil fired heating equipment, a fuel storage tank had to be custom built. The oil tank was usually placed in the basement in the area where the old coal bins had been located. To construct a 5000 gallon tank, the area required was typically 96" x 13' 4". If the coal storage bin was only 12 feet long, the tank would be custom built to fit that space. Thus, a tank that was originally planned to have a 5000 gallon capacity might now only have a capacity of 4650 gallons. The shape of the tank, as well as its size, changes the actual capacity it can hold. Tanks are cylindrical with slightly convex ends. The degree to which the ends bow outward varies slightly from tank to tank and can result in a tank being slightly smaller or larger than it is reported to be.

Both manual and electronic tank gauges are subject to inaccuracies. How, then, is it possible to ensure that your building is receiving an accurate oil delivery? The simplest way is to have the building superintendent or engineer present during the entire delivery process. He and the truck driver can obtain a "before" reading of the volume of oil in the tank by taking a "stick" reading together and then taking another stick reading together once the fuel delivery is completed. Measuring the tank with a measuring stick both before and after delivery, and comparing the results to the metered volume shown on the truck-imprinted delivery ticket, is the most reliable means of ensuring accuracy. This method is somewhat time consuming, and can be impractical during the coldest winter months when deliveries may come at any hour of the day or night. However, having the superintendent or engineer in attendance, even on an intermittent basis, can help accomplish accurate deliveries.

You should have confidence in your supplier's delivery personnel. Working together with your oil company and reporting any problems promptly so that they can be investigated and resolved is important. Communication is the best way to make sure you are getting every gallon you are paying for.