Airtab® Tractors and Flatbeds

Does the back of a tractor look like the back of a trailer? From an aerodynamic standpoint, the answer is yes. Although their appearances differ somewhat because of the presence of side and roof fairings, a fully faired tractor bobtailing or hauling a flat bed and the back of a dry van or reefer trailer are aerodynamic equivalents. That is, they both create base pressure drag.

BASE PRESSURE DRAG is an aerodynamic term that describes the "suction" or low PRESSURE area (which creates DRAG) that occurs at the BASE area (or at the back of) any bluff bodied object traveling at speed. A "bluff body" is another aerodynamic term that describes any square backed object. The backs of tractors, straight trucks, dry vans, reefers etc are perfect examples of bluff bodies.

Consider the tractor with no trailer. The back of the tractor creates a base pressure drag component. So what aerodynamic changes occur when you hook up to an empty flatbed trailer? Nothing really. The tractor will continue to generate fuel robbing base pressure drag at the rear of the cab with the empty trailer attached.

If you place a load on the flatbed trailer does the base pressure drag at the back of tractor go away? Probably not. It depends on what the load is and how close you place it to the back of the tractor. If the load is anything past 18 inches from the trailing edges of the side extenders, the base drag is still present. The rule of thumb for the tractor-trailer gap with a tractor and dry van is for every 10 inches of gap area over 30 inches you loose 1/10 MPG. Weight permitting, the position of the load on the flatbed should be considered as the same as the tractor / trailer gap with a dry van. In fact, the reason fairings and side extenders came into existence is because a tractor hauling a box van with a huge gap, aerodynamically speaking, was really 2 vehicles being pulled by 1 motor. Tractor streamlining and gap adjustments have only gone part way to address drag in this area. Flatbed haulers should review the solution to base drag at Airtab.com .

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