

Test Results on Western Express Facility

Starting with a single 2007 Freightliner Columbia flatbed tractor, a total of six similar 2006 and 2007 model tractors have been treated with the Deturbulator. The tractors are operated by Western Express, Inc., Nashville, TN for hauling flatbeds nationwide. The loads range from steel pipes to large air-conditioning equipment, which extend above the cab roofline. Monthly fuel consumption and mileage data was downloaded remotely from each tractor by Western Express. Currently, their flatbed fleet consists of 580 tractors. Historically, the average mpg of their flatbed fleet trails the average mpg of the van-trailer haulers by 0.20 to 0.27 mpg (about 4%).

The first Deturbulator treated flatbed tractor indicated a 12.7% increase in mpg hauling similar loads of pipes over similar terrain as shown in Table 1.

Table 1

Fuel Economy of freightliner Columbia Flatbed Tractor				
	Dates	Gallons	Miles	Av MPG
Without Deturbulator	5/6/08-5/12/08	744.63	3554	4.77
With Deturbulator	6/11/08-6/17/08	747.75	4022	5.38
12.7% improvement in MPG due to Deturbulator				

Two more tractors were then treated. Table 1 shows 3-truck-averaged mpg comparisons between treated and untreated conditions. Since treatments were on different months for each truck, the untreated months are different. The average mpg of the entire Western Express flatbed fleet also changes from month to month due to seasonal effects. Hence these were subtracted to yield an increase of 0.43 mpg or 7.82% in the 3-truck averaged fuel economy.

Table 3 shows the effect of adding three more trucks, treated at a later date to this group. The 6-truck average mpg still increased by 0.40 mpg or 7.43%. Once again seasonal variations in overall flatbed fleet mpg have been subtracted.

For additional check on Deturbulator mileage enhancement, the group consisting of trucks 5160, 5166 and 5650 was analyzed separately since all three were treated within three days, end of August. Table-4 shows 9.12% or 0.49 mpg increase in the 3-truck averaged fuel mileage.

Hence the estimate of 7.43% increase in mpg due to the Deturbulator can be considered safe for the Western Express flatbed fleet. Fuel savings and payback period for a typical Western Express flatbed tractor the Deturbulator are shown below:

ESTIMATES OF FUEL SAVINGS AND PAYBACK OF DETURBULATOR TREATMENT								
mpg	Av mpg of 6	Fuel that	Actual	Fuel saved	Fuel Cost	Fuel Cost	Deturb	Payback
Seasonal	trucks in Sept	would be	fuel	6-trucks	Saved	Saved	Cost	(Weeks)
adjust	if left	used if	used by	(Gals)	6-trucks	per truck	per truck	
factor	untreated	(Gals)	test trucks	(Gals)	(\$)	\$ per unit	\$ per unit	
1.003533569	5.46	11020.43	10284.40	736.03	2208.09	368.01	400	4.3
						\$3.00/gal		

Table-2

Western Express Deturbulator Treated Truck Data Summary

<i>BEFORE TREATMENT</i>										Deturb Apply Date
TRUCK#	Model	Fuel-gals	Start ODO	End ODO	Miles	mpg	Division	Dispatch	Month	
5062	FRHT 06	888.8	382,226	387,431	5,205	5.86	500	BRASE	June	7/8/2008
5565	FRHT 07	1,674.30	276,466	284,740	8,274	4.94	500	WILP	June	7/8/2008
6115	FRHT 07	2,575.4	158,920	173,431	14,511	5.63	8	ROBJE	March	6/11/2008
Av 3-truck		5138.5			27990	5.45				

<i>AFTER DETURBULATOR TREATMENT</i>										Deturb Apply Date
TRUCK#	Model	Fuel-gals	Start ODO	End ODO	Miles	mpg	Division	Dispatch	Month	
5062	FRHT 06	1,902.4	387,431	398,716	11,285	5.93	500	BRASE	July	7/8/2008
5565	FRHT 07	1,483.5	285,037	293,405	8,368	5.64	500	WILP	July	7/8/2008
6115	FRHT 07	2,513.0	212,856	228,100	15,244	6.07	8	ROBJE	July	6/11/2008
Av 3-truck		5898.9			34897	5.92				

CHANGE IN OVERALL FLATBED FLEET MILEAGE DUE TO SEASONAL FACTORS

# Units	Fuel gals	Miles	MPG	Avg. Mile/Unit	Month
543	944,835.0	5,355,901	5.67	9,864	July
541	955,316.0	5,402,668	5.66	9,986	June
530	946,652.0	5,325,737	5.63	10,049	March
			0.04	mpg change between March and July due to seasonal factors	

IMPROVEMENT	0.47 mpg increase	0.43 mpg increase after adjusting for seasonal factors
(3-truck Averaged):	8.61 % mpg increase	7.82 % mpg increase after adjusting for seasonal factors



Deturbulators

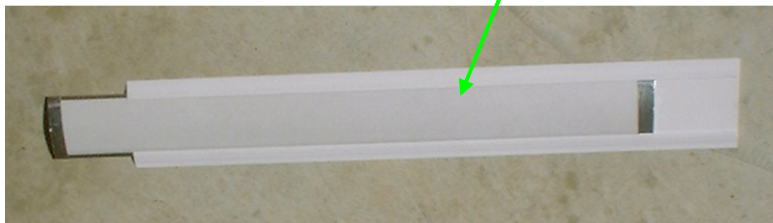


Table 3

Western Express Deturbulator Treated Truck Data Summary

BEFORE TREATMENT											Deturb	Flatbed	(Truck mpg) minus
TRUCK#	Model	Fuel-gals	Start ODO	End ODO	Miles	mpg	Division	Dispatch	Month	Apply	Fleet	(Fleet mpg)	
6115	FRHT 07	2,354.5	187,720	201,350	13,630	5.79	8	ROBJE	May	6/11/2008	5.77		0.02
5062	FRHT 06	888.8	382,226	387,431	5,205	5.86	500	BRASE	June	7/8/2008	5.66		0.20
5565	FRHT 07	1,674.30	276,466	284,740	8,274	4.94	500	WILP	June	7/8/2008	5.66		(0.72)
5150	FRHT 06	1,306.6	332,066	338,736	6,670	5.10	500	BRASE	July	8/26/2008	5.67		(0.57)
5166	FRHT 06	1,434.2	352,775	360,869	8,094	5.64	500	SHAP	July	8/27/2008	5.67		(0.03)
5650	FRHT 07	1,531.8	244,889	253,043	8,154	5.32	500	ARNC	July	8/28/2008	5.67		(0.35)
					6-truck average mpg	5.44							
		9,190.2			50,027	5.44							

AFTER DETURBULATOR TREATMENT											Deturb	Flatbed	(Truck mpg) minus	(mpg treated) minus
TRUCK#	Model	Fuel-gals	Start ODO	End ODO	Miles	mpg	Division	Dispatch	Month	Apply	Fleet	(Fleet mpg)	(mpg Untreated)	
6115	FRHT 07	2,513.0	212,856	228,100	15,244	6.07	8	ROBJE	July	6/11/2008	5.67	0.40	0.38	
5062	FRHT 06	1,574.3	398,716	408,173	9,457	6.01	500	BRASE	Aug	7/8/2008	5.69	0.32	0.12	
5565	FRHT 07	1,370.5	294,370	301,811	7,441	5.43	500	WILP	Aug	7/8/2008	5.69	(0.26)	0.46	
5150	FRHT 06	2,036.1	350,110	361,769	11,659	5.73	500	KNOJ	Sept	8/26/2008	5.68	0.05	0.61	
5166	FRHT 06	1,684.4	367,635	377,227	9,592	5.69	500	KNOJ	Sept	8/27/2008	5.68	0.01	0.04	
5650	FRHT 07	1,106.1	264,064	270,868	6,804	6.15	500	ARNC	Sept	8/28/2008	5.68	0.47	0.82	
					6-truck average mpg	5.85								
		10,284.4			60,197	5.85								

Average mpg increase	0.40
Ave % mpg increase	7.43

Table 4

Average Mileage increase for trucks 5150, 5166 and 5650	
(Deturbulator treated August 26, 27 and 28 2008)	
July	5.36 Average mpg of trucks (5150, 5166, 5650) -0.31 3-truck Av mpg minus fleet mpg for month
Aug	5.38 Average mpg of trucks (5150, 5166, 5650) -0.31 3-truck Av mpg minus fleet mpg for month
Sept	5.86 Average mpg of trucks (5150, 5166, 5650) 0.18 3-truck Av mpg minus fleet mpg for month
0.18-(-0.31)=	0.49 mpg increase compared to Aug or July
0.49/5.38 =	0.091179 or 9.12 % increase in mpg