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Japanese Dee-Zol Fleet Testing – Toho Transportation

Bell Performance's multi-purpose additive for diesel fuel, Dee-Zol (DZL), has been manufactured since 1954 and used by tens of thousands of consumers. The additive contains ingredients to improve combustion of fuel, detergency, lubricity (especially important for ultra low sulfur diesel fuels), fuel stability and water control. All of these ingredients are combined in a completely ashless formula which is concentrated to provide exceptional benefits at a treat rate in excess of 1 ounce to 10 gallons of fuel.

The primary question in the mind of many customers when presented with an additive-related opportunity is "will it work for me?" Sometimes it will take a test of the product to show how well the product works for that particular customer. Bell Performance does not guarantee specific results for every consumer because it is well-known that every customer and every truck fleet is different, with different factors of variable controllability (mechanical parameters, environmental parameters, operating parameters) combining to affect emissions and fuel consumption.

Through its Japanese agent, Bell Performance conducted testing of Dee-Zol at multiple depots in the country of Japan. In 2008, Toho Transport agreed to a test period for a subgroup of its vehicles. The purpose of the test was to document the effects of Dee-Zol treatment on its vehicle fuel consumption. The company initially started with five vehicles to be tested over a four month period.

Testing Details:

Customer: Toho Transportation Company

Test Period: April to June 2007

Vehicle Manufacturers: Hino, Isuzu, and Mitsubishi

Vehicles Tested: Five

Testing Protocol:

Toho, as per normal business practice, kept detailed records of driving distances and fuel usage for all of their buses. For the test period, the Dee-Zol additive was added at the recommended treat ratio to each depot's fuel storage tank, at each addition of new fuel to the tank, to ensure both proper mixing of the fuel and additive and to ensure proper dosage of additive for each vehicle (instead of individual drivers being required to add the additive themselves). All trucks at each depot utilized the fuel tanks on-site, instead of relying on roadside commercial establishment and ensuring the validity of the test. In keeping with company standards, the same regular maintenance regimens were followed for each vehicle, including oil changes at regular intervals, proper tire pressure and all recommended preventive maintenance and upkeep followed. Test data was compiled for four months, starting in February 2008 and concluding at the end of May 2008. Fuel usage was compared to baseline testing data compiled for the same months from the previous year.



Testing Results

Feb - May 2008 Testing

Depot		Feb-07			Feb-08			□□□□	
	Vehicle #	KM	Fuel (L)	□□(km/L)	KM	Fuel (L)	□□(km/L)	H20-H19	□□□□□
1	258	506	183.52	2.76	539	141.00	3.82	1.06	38.41%
2	1723	604	104.32	5.79	632	107.50	5.88	0.09	1.55%
3	6491	576	175.42	3.28	928	210.54	4.41	1.13	34.45%
4	3261	1,222	213.71	5.72	1,127	152.00	7.41	1.69	29.55%
5	1779	1,001	192.71	5.19	1,154	165.94	6.95	1.76	33.91%
2 □□		3,909	869.68	4.49	4,380	776.98	5.64	1.15	25.61%
1-Mar					Mar-08			□□□□	
	Vehicle #	KM	Fuel (L)	□□(km/L)	KM	Fuel (L)	□□(Km/L)	H20-H19	□□□□□
1	258	634	181.50	3.49	488	137.54	3.55	0.06	1.72%
2	1723	642	152.51	4.21	614	121.10	5.07	0.86	20.43%
3	6491	641	162.17	3.95	847	226.60	3.74	-0.21	-5.32%
4	3261	846	212.33	3.98	972	151.70	6.41	2.43	61.06%
5	1779	1,046	227.50	4.60	992	163.99	6.05	1.45	31.52%
3 □□		3,809	936.01	4.07	3,913	800.93	4.89	0.82	20.15%
Apr-07					Apr-08			□□□□	
	Vehicle #	KM	Fuel (L)	□□(km/L)	KM	Fuel (L)	□□(Km/L)	H20-H19	□□□□□
1	258	611	178.78	3.42	538	145.00	3.71	0.29	8.48%
2	1723	685	150.39	4.55	637	144.00	4.42	-0.13	-2.86%
3	6491	611	169.40	3.61	1,037	261.20	3.97	0.36	9.97%
4	3261	1,248	192.00	6.50	1,158	156.50	7.40	0.90	13.85%
5	1779	1,080	228.00	4.74	1,109	184.10	6.02	1.28	27.00%
4 □□		4,235	918.57	4.61	4,479	890.8	5.03	0.42	9.11%
May-07					May-08			□□□□	
	Vehicle #	KM	Fuel (L)	□□(km/L)	KM	Fuel (L)	□□(Km/L)	H20-H19	□□□□□
1	258	651	184.94	3.52	515	145.50	3.54	0.02	0.57%
2	1723	760	233.96	3.25	567	146.00	3.88	0.63	19.38%
3	6491	634	211.21	3.00	757	262.70	2.88	-0.12	-4.00%
4	3261	1,319	234.00	5.64	1,278	183.00	6.98	1.34	23.76%
5	1779	1,138	218.20	5.22	1,037	204.49	5.07	-0.15	-2.87%
5 □□		4,502	1,082	4.16	4,154	941.69	4.41	0.25	6.01%
2-5 □□□		16,455	3,809	4.32	16,926	3,410.4	4.96	0.64	14.81%



As with most tests utilizing a pool of multiple vehicles, there was a small amount of variance, with four of twenty resulting yielding negative mileage increases during any one month. Over 50% of the monthly results ranged from **13.65-61.06%** increases.

Mileage data was also compiled by vehicle:

Vehicle #258				2007			2008			□□□□	
	□□□ □	□□□□ □	□□□ □	KM	Fuel (L)	□□ (km/L)	KM	Fuel (L)	□□ (km/L)	H20- H19	□□□□ □
Feb				506	183.52	2.76	539	141.00	3.82	1.06	38.41%
March'	□□		□□	634	181.50	3.49	488	137.54	3.55	0.06	1.72%
April	□		□□	611	178.78	3.42	538	145.00	3.71	0.29	8.48%
May				651	184.94	3.52	515	145.50	3.54	0.02	0.57%
Feb - May				2,402	728.74	3.30	2,080	569.04	3.66	0.36	10.91%
Vehicle 1723				2007			2008			□□□□	
	□□□ □	□□□□ □	□□□ □	KM	Fuel (L)	□□ (km/L)	KM	Fuel (L)	□□ (km/L)	H20- H19	□□□□ □
Feb				604	104.32	5.79	632	107.50	5.88	0.09	1.55%
March'	□□		□□	642	152.51	4.21	614	121.10	5.07	0.86	20.43%
April	□		□□	685	150.39	4.55	637	144.00	4.42	-0.13	-2.86%
May				760	233.96	3.25	567	146.00	3.88	0.63	19.38%
Feb - May				2,691	641.18	4.20	2,450	518.60	4.72	0.52	12.38%
Vehicle 6491				2007			2008			□□□□	
	□□□ □	□□□□ □	□□□ □	KM	Fuel (L)	□□ (km/L)	KM	Fuel (L)	□□ (km/L)	H20- H19	□□□□ □
Feb				576	175.42	3.28	928	210.54	4.41	1.13	34.45%
March'	□□		□□□	641	162.17	3.95	847	226.60	3.74	-0.21	-5.32%
April	□		□□□	611	169.40	3.61	1,037	261.20	3.97	0.36	9.97%
May				634	211.21	3.00	757	262.70	2.88	-0.12	-4.00%
Feb - May				2,462	718.20	3.43	3,569	961.04	3.71	0.28	8.16%
Vehicle 3261				2007			2008			□□□□	
	□□□ □	□□□□ □	□□□ □	KM	Fuel (L)	□□ (km/L)	KM	Fuel (L)	□□ (km/L)	H20- H19	□□□□ □
Feb				1,222	213.71	5.72	1,127	152.00	7.41	1.69	29.55%
March'	□□		□□□□	846	212.33	3.98	972	151.70	6.41	2.43	61.06%
April	□		□	1,248	192.00	6.50	1,158	156.50	7.40	0.90	13.85%
May				1,319	234.00	5.64	1,278	183.00	6.98	1.34	23.76%
Feb - May				4,635	852.04	5.44	4,535	643.20	7.05	1.61	29.60%
				2007			2008			□□□□	



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Vehicle 1779											
	□□□	□□□□	□□□	KM	Fuel (L)	□□ (km/L)	KM	Fuel (L)	□□ (km/L)	H2O-H19	□□□□
Feb	□	□	□	1,001	192.71	5.19	1,154	165.94	6.95	1.76	33.91%
March'	□□	□□□□	□□	1,046	227.50	4.60	992	163.99	6.05	1.45	31.52%
April	□	□	□□	1,080	228.00	4.74	1,109	184.10	6.02	1.28	27.00%
May				1,138	218.20	5.22	1,037	204.49	5.07	-0.15	-2.87%
Feb - May				4,265	866.41	4.92	4,292	718.52	5.97	1.05	21.34%

Some vehicles experience isolated single-month instances of negative mileage drops. However the majority of the results indicated substantial mileage improvements for all vehicles. The lowest improvement for the four month period was 8.16%, while two of the buses experienced increases exceeding 20%.

Conclusion

The four month trial demonstrated very positive and encouraging results for the Toho management. They recognized that substantial mileage improvements such as those witnesses during their test would save the company huge amounts of money, especially with respect to skyrocketing fuel prices.

The total overall fuel mileage decrease for the five vehicles over 16,900 km of driving was in excess of **14%**.

The company management were so impressed with the fuel mileage savings caused by the use of Dee-Zol, that they agreed to extend the testing and increase the test pool to a total of 51 vehicles at three different depots within their system. This testing commenced in June 2008.