

Reprinted from **Real Answers**

Conclusions

Special Edition Four

real QUESTIONS
real ANSWERS

BRIDGESTONE

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Conclusions

After nearly three decades of testing, Bridgestone engineers have concluded there are so many factors affecting large truck fuel economy that it is almost impossible to accurately predict the effect of changing them without thorough real-world testing.

And, as the Technology and Maintenance Council and others have pointed out, some fuel economy methods – that have nothing to do with tires – can accomplish much more than changing tires can.

We've summarized TMC's statements in the chart shown at the right. You'll notice the improvement you can expect varies considerably, and you will no doubt find some methods are easier for you to implement than others.

The chart below, derived from TMC data, shows the top ten controllable fuel economy factors. 

Top 10 Controllable Fuel Economy Factors

RANK		IF YOU USE OR HAVE:	INSTEAD OF:	MPG IMPROVES BY:
1	DRIVERS	Best Drivers	Worst Drivers	Up to 35%
2	SPEED With Poor Aerodynamics	If you go slower by: 5 MPH	No Change	10 - 15%
3	TIRES Deep Lug > Rib	STEER / DRIVE / TRAILER Rib / Rib / Shallow Rib	STEER / DRIVE / TRAILER Rib / Deep Lug / Rib	6 - 14%
4	IDLING With A/C on @ 1000 RPM	Zero Idle Time	50%	7 - 10%
5	TRAILERS	Single Van	Double Van	6 - 10%
6	AERODYNAMICS With Cab Roof Devices	Full Roof Fairing	Nothing	Up to 15%
7		Full Roof Fairing	Raised Roof Sleeper	4 - 10%
8	SPEED With Excellent Aerodynamics	If you go slower by: 5 MPH	No Change	5 - 8%
9	TIRES Lug > Rib	STEER / DRIVE / TRAILER Rib / Rib / Shallow Rib	STEER / DRIVE / TRAILER Rib / Lug / Standard Rib	4 - 9%
10	ENGINES	Cruise Control	No Cruise Control	Up to 6%

Of the fuel economy factors most under your control, driver training is one of the most important.

Factors Affecting Fuel Economy in the Real World

LINE #		IF YOU USE OR HAVE:	INSTEAD OF:	MPG IMPROVES BY:	
1	ENGINES	electronic	mechanical	7 - 15%	
2		recommended RPM at cruise MPH	100 RPM above recommended at cruise MPH	Up to 3%	
3		cruise control	no cruise control	Up to 6%	
4	COOLING FANS	on/off	viscous	1.5 - 5.0%	
5		with on/off types: zero fan on time	100%	7 - 18%	
6		zero fan on time	50%	4 - 9%	
7		zero fan on time	20%	0.5 - 2%	
8		with 2-speed v. 1-speed: 20% time on / 2-speed	20% time on / 1-speed	up to 1%	
9		10% time on / 2-speed	10% time on / 1-speed	up to 0.5%	
10	RADIATOR SHUTTERS	summer / with	summer / without	0.5 - 2.0%	
11		winter / with	winter / without	1.0 - 3.0%	
12	INTAKE/EXHAUST RESTRICTIONS	no intake restriction	25" of water	up to 1%	
13		no exhaust restriction	40" of water	0.3 - 2%	
14	AIR COMPRESSORS	12 - 13 CFM	15 - 17 CFM	up to 0.5%	
15	IDLING*	with A/C on @ 1000 RPM	zero idle time	7 - 10%	
16		zero idle time	25%	3 - 6%	
17		zero idle time	10%	2 - 3%	
18		with engine only @ 700 RPM	zero idle time	3 - 4%	
19		zero idle time	25%	1 - 2%	
20		zero idle time	10%	0.5 - 1%	
21	AERODYNAMICS	trailer gaps	25 inches	35 inches	0.5 - 1%
22			25 inches	45 inches	1 - 2%
23			25 inches	65 inches	2 - 5%
24		cab roof devices	standard deflector	nothing	up to 6%
25			full roof fairing	nothing	up to 15%
26			full roof fairing	raised roof sleeper**	4 - 10%
27		other devices	15-inch cab extenders	nothing	1 - 2%
28			air dam front bumper	standard	up to 3%
29			tractor side skirts	tanks or nothing	up to 3%
30			nothing	bug deflector	up to 1.5%
31	SPEED	if you go slower by:†	1 MPH	no change	1 - 1.5%
32		with excellent aerodynamics	5 MPH	no change	5 - 8%
33		if you go slower by:†	1 MPH	no change	2 - 3%
34		with poor aerodynamics	5 MPH	no change	10 - 15%
35	TIRES	steer / drive / trailer:	rib / rib / rib	rib / lug / rib	2 - 4%
36			rib / lug / rib	rib / deep lug / rib	2 - 5%
37			rib / lug / shallow rib	rib / lug / standard rib	2 - 5%
38			rib / rib / shallow rib	rib / lug / standard rib	4 - 9%
39			rib / rib / shallow rib	rib / deep lug / rib	6 - 14%
40			rib / original tread / original tread	rib / retread / retread	up to 7%
41			worn tires	new tires	5 - 10%
42	WIND		no headwind	5 MPH headwind	5 - 10%
43			no crosswind	5 MPH crosswind	up to 10%
44	TRANSMISSION		direct drive	overdrive	up to 2%
45		transmission/axle lube in summer	synthetic	mineral oil	up to 0.5%
46		transmission/axle lube in winter	synthetic	mineral oil	up to 2%
47	DRIVE AXLE		single drive with tag	tandem drive	2 - 3%
48	WEATHER CONDITIONS		10° warmer air temp. (up to 77°)	no change	1 - 2%
49			summer	winter	8 - 12%
50			summer fuel	winter fuel	up to 3%
51	BREAK-IN PERIOD		truck with 10,000 miles (tires not included)	zero mile truck	2 - 5%
52	ROUTES		flat interstate highway	flat 2-lane highway	4 - 11%
53			flat interstate highway	mountainous interstate	4 - 18%
54			flat interstate highway	suburban route with 50% stop & go	25 - 35%
55			flat interstate highway	urban route with 100% stop & go	45 - 165%
	WEIGHT	if you decrease weight 10,000 lbs (for GVW between 60,000-80,000 lbs)			
56		flat route	10,000 lbs lighter load	heavier load	6 - 10%
57		mountainous route	10,000 lbs lighter load	heavier load	7 - 12%
58	DRIVERS		best drivers	worst drivers	up to 35%
59	TRAILERS		single van	double van	6 - 10%
60			smooth sides	exterior posts	2 - 4%
61		with good tractor aerodynamics	12.5' x 8' van	13.5' x 8.5' van	up to 2%
62		no tractor aerodynamic features	12.5' x 8' van	13.5' x 8.5' van	up to 8%

*See TMC RP1109 for more information.

**When 10 - 14 inches shorter than trailer.

†Between 65 - 70 mph. All based on changes in average speed – typically average speed changes are less than maximum speed changes.