

Part One.

Test Results from
Queensland University
of Technology.

Part Two.

Independent Tests from the United States.



SCHOOL OF MECHANICAL, MANUFACTURING AND MEDICAL ENGINEERING

CLIENT:

**SUPERIOR MAINTENANCE TECHNOLOGY
PO. BOX 70
ALLORA QLD 4362**

PROFESSIONAL TESTING SERVICES

Title:

**REPORT No: 05017 - 08
SAMPLES TEST
SUPERIOR MAINTENANCE TECHNOLOGY
MARCH 2006**

THIS REPORT MUST NOT BE PUBLISHED EXCEPT IN FULL, UNLESS PERMISSION FOR THE PUBLICATION OF APPROVED ABSTRACT HAS BEEN OBTAINED IN WRITING FROM THE DEAN OF THE FACULTY OF BUILD ENVIRONMENT AND ENGINEERING, QUEENSLAND UNIVERSITY OF TECHNOLOGY.

TESTING SERVICES REPORT NO: 05017 -08
DATE OF TEST: MARCH, 2006
CLIENT: SUPERIOR MAINTENANCE TECHNOLOGY
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ALLORA, QLD 4362
CONTACT: PETER CORDEN
TELEPHONE: (07) 4697 3040
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E-MAIL: smt22@bigpond.com

METHOD: Samples as supplied tested to standard
ASTM D3233 Falex Pin and Vee Block

SAMPLE IDENTIFICATION

SAMPLE (4) SHELL SPIRAX 85 W 140 + 10% SMT II

RESULT

FALEX PIN AND VEE BLOCK
ASTM D3233

SAMPLE (4) SHELL SPIRAX 85 W 140 + 10% SMT II

4500 lbf

D. McIntosh

Testing Officer

SCHOOL OF MECHANICAL, MANUFACTURING AND MEDICAL ENGINEERING

RESULTS:

GEAR OILS

FALEX PIN & VEE-BLOCK ASTM D3233-B

ALL ADDITIVES BLENDED BY VOLUME

SHELL SPIRAX 85 W 140 GEAR OIL	3000 lbf
SHELL SPIRAX 85 W 140 GEAR OIL blended with ROIL GOLD METAL CONDITIONER at 20 : 1	3500 lbf
SHELL SPIRAX 85 W 140 GEAR OIL blended with ROIL GOLD METAL CONDITIONER at 14 : 1	4500+ lbf
SHELL SPIRAX 85 W 140 GEAR OIL blended with BI-TRON 2-4-6 METAL TREATMENT at 100ml : 12ml	3750 lbf
MOLYBOND G 2800 GEAR OIL	2250 lbf
BP GR XP 220 GEAR OIL	1500 lbf



D. McIntosh
Testing Officer
SCHOOL OF MECHANICAL MANUFACTURING AND MEDICAL ENGINEERING

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PAGE 4 OF 6 PAGES
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Faculty of Built Environment and Engineering
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Anti-Friction Testing

SMT 2

Timken OK Load, EP-ASTM-D-2782

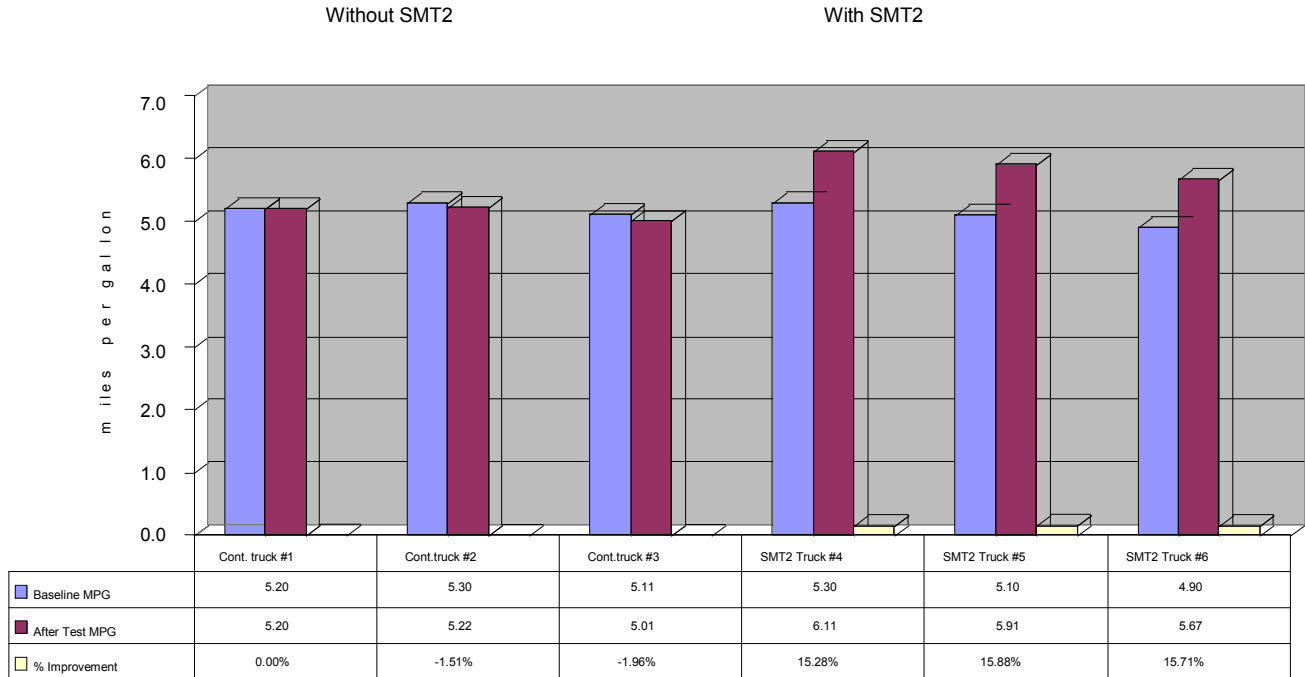
Timken Falex Film Strength, EP (PSI)-ASTM-D-2783

+Timken Ok Load, EP-ASTM-D-2782		Timken Falex Film Strength, EP (PSI)- ASTM-D-2783	
Product Name	Lbs	Product Name	PSI
Amsoil Synthetic SC Series Gear Oil	75	Amsoil Synthetic SC Series Gear Oil	131,250
#203A Moly EP Industrial Machine Lube	65	#203A Moly EP Industrial Machine Lube	113,750
Brad Penn EP, Industrial Gear Oils	65	Brad Penn EP, Industrial Gear Oils	113,750
Chevron Open Gear Lubricants	45	Chevron Open Gear Lubricants	78,750
Citgo EP Oils	70	Citgo EP Oils	122,500
Exxon SPARTAN synthetic EP Industrial Gear Oils	60	Exxon SPARTAN synthetic EP Industrial Gear Oils	105,000
Forsythe Misting Oils	75	Forsythe Misting Oils	131,250
Lyondel Lubricants - Pennant NL Oils	60	Lyondel Lubricants - Pennant NL Oils	105,000
Mobilgear SHC Series Oils - Synthetic Heavy Duty Industrial Gear Lubricants	60	Mobilgear SHC Series Oils - Synthetic Heavy Duty Industrial Gear Lubricants	105,000
Mystik Power Lubricants - EP Gear Lubricants	60	Mystik Power Lubricants - EP Gear Lubricants	105,000
Pennzoil - Super Maxol EP Gear Oil	75	Pennzoil - Super Maxol EP Gear Oil	131,250
Royal Purple - PARA-SYN/Paper Machine Premium Para-Synthetic Paper Machine Oil	100	Royal Purple - PARA-SYN/Paper Machine Premium Para-Synthetic Paper Machine Oil	175,000
Shell Oil Company - OMALA Oils	32	Shell Oil Company - OMALA Oils	56,000
TS Moly Lubricants TS-319 SAE 250 Industrial Gear Lube	60	TS Moly Lubricants TS-319 SAE 250 Industrial Gear Lube	105,000
SMT ^{2TM} Anti-Friction Additive	138	SMT ^{2TM} Anti-Friction Additive	250,000

SAE J1321 Fuel Consumption Test Results

Joint TMC/SAE test developed specifically to meet the needs of the trucking industry

Mobile Test with 3 Control Vehicles & 3 Vehicles w/SMT



Each truck ran a baseline segment, using the same oils and fuels for 10 trips of the same route. Conditions were consistent, including the pressure; tread depth, using the air conditioning and electric fan. Control trucks and test trucks ran the same route 10 times with concurrent times and mileage segments to make testing procedures precise. This test was done using gallons of fuel used for a specific mileage period, not weights of fuels used in a 20 minute run session. Testing was also done on two stationary pieces of equipment to determine value in generators and compression applications.

Data:	Control Trucks			Test Trucks with SMT2		
	Truck 1	Truck 2	Truck 3	Truck 4	Truck 5	Truck 6
Type	Mack	Mack	Mack	Mack	Mack	Mack
Engine	E7-460	E7-460	E7-460	E7-460	E7-460	E7-460
Transmission	FRO14210B	FRO14210B	FRO14210B	FRO14210B	FRO14210B	FRO14210B
Rear Axle	Mack	Mack	Mack	Mack	Mack	Mack
Ratio	3.86	3.86	3.86	3.86	3.86	3.86
Tyre Size Truck	275/80R22.5	275/80R22.5	275/80R22.5	275/80R22.5	275/80R22.5	275/80R22.5
Tire Tread Depth	22/32	22/32	22/32	22/32	22/32	22/32
Miles before Test	468212	465721	467830	472345	461333	451229
Miles after Test	486212	483721	485839	490345	479344	469263
Tyre Air Pressure	MAX	MAX	MAX	MAX	MAX	MAX
Engine Oil	Delo 400	Delo 400	Delo 400	Delo 400	Delo 400	Delo 400
Gear Oil	Citgo 85w140	Citgo 85w140	Citgo 85w140	Citgo 85w140	Citgo 85w140	Citgo 85w140
Diesel Fuel	Flying J # 2	Flying J # 2	Flying J # 2	Flying J # 2	Flying J # 2	Flying J # 2
Trailer	48" Great Dane	48" Great Dane	48" Great Dane	48" Great Dane	48" Great Dane	48" Great Dane
Trailer Tyres	24.5"	24.5"	24.5"	24.5"	24.5"	24.5"
Tread Depth	21/32	21/32	19/32	18/32	21/32	22/32
Route	SLC to LV	SLC to LV	SLC to LV	SLC to LV	SLC to LV	SLC to LV
Drivers Weight	182 lbs	264 lbs	224 lbs	233 lbs	194 lbs	287 lbs
Total Weight	82,344 lbs	82,421 lbs	82,398 lbs	82,425 lbs	82,388 lbs	82,487 lbs
MPG before Test	5.20	5.30	5.11	5.30	5.10	4.90
SMT2 Treatment	None	none	none	1 gallon	1 gallon	1 gallon
MPG after Test	5.20	5.22	5.01	6.11	5.91	5.67
Increase/Decrease % in MPG	0.0%	-1.7%	-2.0%	15.3%	15.8%	15.7%

LubeTrak
This changes everything

SMT2 Case Study for "Wear Metals"

Date 7/2002 thru 12/2002

Unit: Cat 3406 Engine in Peterbuilt Truck

Unit: Eaton Front Diff/Spicer Gear Set

	Unit	Model	Sample	Component Miles	Oil time in miles	Oil type	SAE	LAB NO	Al	Cr	Cu	Fe	Pb	Sn	Si	Na	Oxidation	TBN	Soot	Condition / Abnormal wear metals
Baseline	549	OTR	Engine	554610	25915	Pennzoil	15w40	77233	4	5	22	123	9	0	6	10	0.070	6.2	0.8	
SMT2	549	OTR	Engine	586385	31775	Pennzoil SMT2@7%	15w40	1547	3	2	9	47	9	0	6	0	0.02	7.9	0.4	Normal Op Range
Baseline	549	OTR	Front Axle	554610	20841	Pennzoil	80w90	56033	1	4	13	1164	1	0	13	0	1.9	NA	NA	Normal, But close to limit, note Fe Count
SMT2	549	OTR	Front Axle	586385	31775	Pennzoil SMT2@10%	80w90	1546	1	4	10	109	0	0	19	0	0.2	NA	NA	Normal

Note: Even with more miles on the oil, the SMT2 test showed positive increase in TBN (detergent) allowing the oil to do its job at a longer more in-depth rate.

Note: We noticed a significant reduction in wear metals, especially the Fe (Iron) parts per million. This is proving to our lab analyst that this is treating the metal, not the oil.

Note: The oxidation numbers in the Front Axle showed us that the oil is running much cooler with the SMT2 than without. Allowing the oil and metal to stay cooler during operation.

For more information call: LubeTrak @ 1-866-582-3872 Brent Winberg

SMT Superior Maintenance Technology

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