

ISSUE 103: SEPTEMBER 2010

DIESEL TORQUE

OFFICIAL MAGAZINE OF THE ASSOCIATION OF AUSTRALASIAN DIESEL SPECIALISTS INC. (AADS)

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Technical information contained in this magazine is obtained from sources deemed reliable with in the industry. However, AADS accepts no responsibility for the accuracy of this information.

President's Report



Winter is starting to move on although I am sure that in New Zealand we will get one or two more cold snaps during September. We are starting to work on the Convention in South Australia. I was asked to attend a

function held in South Australia by Destination South Australia. This was to show off what the State has to offer and I am happy that we can put together a great program for all to attend. We want to make sure we have a great turn out in Adelaide.

As I write this report, I am thinking about Fiji, because tomorrow Shona and I will be on the plane and off to Fiji for a few days. While I am there I will be looking at a number of things – purely for the good of my fellow members. Shona may not be happy but I am sure she will get over it.

The team have been working on the Apprentice Training and also training for the older chaps in the industry. By the next *Diesel Torque* we should have this all together and ready to roll out for the members.

I have still been working in the rules and they are back with our solicitors hopefully for the last time. I am keen to get these out to all the members so you can have a look and get the postal voting completed.

During September it is the New Zealand Branch Conference in Dunedin. By the numbers that have completed their rego forms it looks like we are going to have a great weekend, thanks to Dave and his team.

I would like to thank Steve Johnston for his report in the last *Diesel Torque* on the Conference in Melbourne. Thanks for your efforts Steve it is great to see one of our members taking the time to put thoughts together for us all to share.

I look forward to seeing you all again in Adelaide.

Mike Hurley
President, AADS Inc.

Treasurer's Report



Members should have received their invoice for the 2010/2011 membership subscriptions which are now due – if you haven't received your invoice please contact Marilena at the Secretariat on 02 9431 8685 or

aads@apcaust.com.au as soon as possible to confirm your contact details and obtain another copy. Many members have already paid their subs – thank you to all those who have paid. Please don't forget to identify yourself when making a payment to make sure the payment is allocated against the correct member!!

I am pleased to include a copy of the Financial Report for our 2010 Conference which was held at the Novotel St Kilda from 28-30 May. You will see that we actually made a profit of around \$6000 for the event. This is a great achievement under the prevailing economic conditions and this being the first offering in our new alternate year format without a trade exhibition. We had budgeted to break even on the event and the outcome is testament to the level of support we received from both members and the sponsors – thank to all of these participants!! Please don't hesitate to contact me if you have any questions concerning the financial report.

Don't forget to view the AADS website regularly www.aads.com.au. The more you use it and comment and ask for content and changes the better it will become!! Most importantly, please check your membership contact details on the website to make sure they are correct and always up-to-date. You have paid for the website and it is a valuable e-marketing tool for your business – make the most of it!!!

Remember:
"The few who do are the envy of the many who only watch." – Jim Rohn.

Please do not hesitate to contact me if you have any questions about the AADS finances.

Bruce Moffat
National Treasurer, AADS Inc.

AADS 2010 Conference

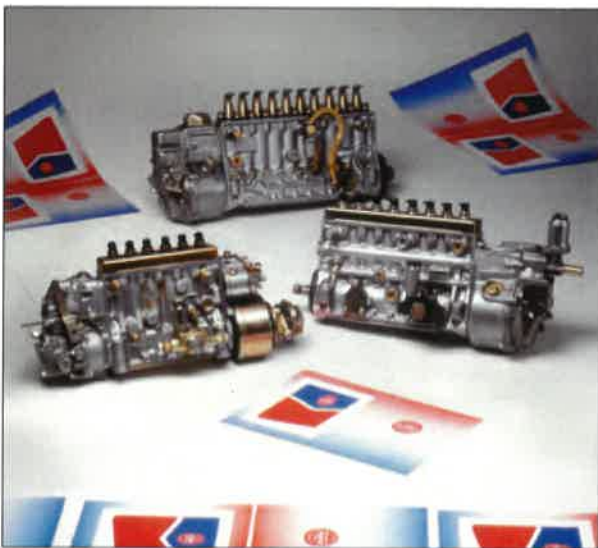
Association of Australasian Diesel Specialists

28 - 30 May 2010
Novotel, St Kilda

		2010 BUDGET Based on 135 Delegates				2010 ACTUAL			
		Number	Unit Cost	Gross Cost	GST	Net Cost	Gross Cost	GST	Net Cost
Income:									
Registration Fees		80	650.00	\$ 52,000.00	\$ 4,727.27	\$ 47,272.73	\$ 28,600.00	\$ 2,600.00	\$ 26,000.00
	Early Fee	5	750.00	\$ 3,750.00	\$ 340.91	\$ 3,409.09	\$ 12,750.00	\$ 1,159.09	\$ 11,590.91
	Late Fee	30	150.00	\$ 4,500.00	\$ 409.09	\$ 4,090.91	\$ 3,000.00	\$ 272.73	\$ 2,727.27
	Day Registration	20	400.00	\$ 8,000.00	\$ 727.27	\$ 7,272.73	\$ 7,600.00	\$ 690.91	\$ 6,909.09
	Partner Fee						\$ 975.00	\$ 88.64	\$ 886.36
	Life Members		100.00	\$ -	\$ -	\$ -			
Welcome Function - Guest		20	65.00	\$ 1,300.00	\$ 118.18	\$ 1,181.82	\$ 585.00	\$ 53.18	\$ 531.82
Dinner Tickets - Guest (includes transfer cost)		25	145.00	\$ 3,625.00	\$ 329.55	\$ 3,295.45	\$ 3,232.00	\$ 293.82	\$ 2,938.18
Sponsorship				\$ 25,000.00	\$ 2,272.73	\$ 22,727.27	\$ 33,415.00	\$ 3,037.73	\$ 30,377.27
Exhibition Stands		5	850.00	\$ 4,250.00	\$ 386.36	\$ 3,863.64	\$ 2,200.00	\$ 200.00	\$ 2,000.00
Golf (includes taxi to course)		15	70.00	\$ 1,050.00	\$ 95.45	\$ 954.55	\$ 280.00	\$ 25.45	\$ 254.55
Shopping & Changers Tour of Melbourne		2	110.00	\$ 220.00	\$ 20.00	\$ 200.00	\$ 110.00	\$ 10.00	\$ 100.00
Melbourne Sports Lovers Tour							\$ 198.00	\$ 18.00	\$ 180.00
Accommodation Deposits Received							\$ 24,242.00	\$ -	\$ 24,242.00
Total Income				\$ 103,695.00	\$ 9,426.82	\$ 94,268.18	\$ 117,187.00	\$ 8,449.55	\$ 108,737.45
Expenses:									
Promotion		250	1.10	\$ 275.00	\$ 25.00	\$ 250.00	\$ 2,200.00	\$ 200.00	\$ 2,000.00
	Registration Document Design & Print			\$ 3,000.00	\$ 272.73	\$ 2,727.27	\$ -	\$ -	\$ -
	Registration Mail-Out			\$ 275.00	\$ 25.00	\$ 250.00	\$ -	\$ -	\$ -
Speaker Costs				\$ 4,500.00	\$ 409.09	\$ 4,090.91	\$ 2,680.00	\$ 243.64	\$ 2,436.36
	Entertainment - Social Functions			\$ 5,000.00	\$ 454.55	\$ 4,545.45	\$ 5,036.90	\$ 457.90	\$ 4,579.00
	Speaker Fees			\$ 100.00	\$ 9.09	\$ 90.91	\$ -	\$ -	\$ -
	Travel			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Accommodation per night			\$ 400.00	\$ 36.36	\$ 363.64	\$ 257.25	\$ 23.39	\$ 233.86
	Speaker Gifts			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program Costs		140	4.00	\$ 560.00	\$ 50.91	\$ 509.09	\$ 1,953.00	\$ 177.55	\$ 1,775.45
	Final Program			\$ 2,500.00	\$ 227.27	\$ 2,272.73	\$ 782.10	\$ 71.10	\$ 711.00
	Name Badges & Lanyards	140	10.00	\$ 1,400.00	\$ 127.27	\$ 1,272.73	\$ 1,341.89	\$ 121.99	\$ 1,219.90
	Satchels			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Partner Satchel content			\$ -	\$ -	\$ -	\$ 1,573.00	\$ 143.00	\$ 1,430.00
	Friday Site Tour Coaches			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Food & Beverage		80	65.50	\$ 5,240.00	\$ 476.36	\$ 4,763.64	\$ 5,895.00	\$ 535.91	\$ 5,359.09
	Friday Lunch Only	110	65.50	\$ 7,205.00	\$ 655.00	\$ 6,550.00	\$ 6,520.00	\$ 595.45	\$ 5,924.55
	Conference Package - Saturday	110	65.50	\$ 7,205.00	\$ 655.00	\$ 6,550.00	\$ 6,550.00	\$ 595.45	\$ 5,954.55
	Sunday Champagne Brunch Package	105	63.50	\$ 6,667.50	\$ 606.14	\$ 6,061.36	\$ 7,254.00	\$ 659.45	\$ 6,594.55
	Welcome Function	20	63.50	\$ 1,270.00	\$ 115.45	\$ 1,154.55	\$ -	\$ -	\$ -
	Welcome Function - Guest	105	132.00	\$ 13,860.00	\$ 1,260.00	\$ 12,600.00	\$ 14,323.35	\$ 1,302.12	\$ 13,021.23
	Event Dinner MCG	25	132.00	\$ 3,300.00	\$ 300.00	\$ 3,000.00	\$ -	\$ -	\$ -
	Event Dinner MCG - Guest	3	490.00	\$ 1,470.00	\$ 133.64	\$ 1,336.36	\$ 979.99	\$ 89.09	\$ 890.90
	MCG Transfer Coaches			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Venue Hire (Board Meeting)				\$ 550.00	\$ 50.00	\$ 500.00	\$ 550.00	\$ 50.00	\$ 500.00
Audio Visual				\$ 10,000.00	\$ 909.09	\$ 9,090.91	\$ 4,147.00	\$ 377.00	\$ 3,770.00
	Equipment & Staff			\$ 1,000.00	\$ 90.91	\$ 909.09	\$ 28.78	\$ 2.62	\$ 26.16
Administration				\$ 500.00	\$ 45.45	\$ 454.55	\$ 587.95	\$ 53.45	\$ 534.50
	Postage/Stationery			\$ 1,000.00	\$ 90.91	\$ 909.09	\$ 401.15	\$ 36.47	\$ 364.68
	Photocopying			\$ 2,000.00	\$ 181.82	\$ 1,818.18	\$ 1,319.54	\$ 119.96	\$ 1,199.58
	Fax/Tel/Email			\$ 550.00	\$ 50.00	\$ 500.00	\$ 426.99	\$ 38.82	\$ 388.17
	On-site Secretariat			\$ 550.00	\$ 50.00	\$ 500.00	\$ 550.00	\$ 50.00	\$ 500.00
	Committee Expenses			\$ 550.00	\$ 50.00	\$ 500.00	\$ -	\$ -	\$ -
	Web Site - Online Registration Link			\$ 500.00	\$ 45.45	\$ 454.55	\$ 1,252.35	\$ 113.85	\$ 1,138.50
	Couriers			\$ 1,300.00	\$ 118.18	\$ 1,181.82	\$ 58.61	\$ 5.33	\$ 53.28
	Insurance			\$ 1,000.00	\$ 90.91	\$ 909.09	\$ -	\$ -	\$ -
	Bank Charges & Credit Card Fees			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Social Events		15	70.00	\$ 1,050.00	\$ 95.45	\$ 954.55	\$ 200.00	\$ 18.18	\$ 181.82
	Golf (includes taxi to course)	22	108.00	\$ 2,376.00	\$ 216.00	\$ 2,160.00	\$ 1,617.00	\$ 147.00	\$ 1,470.00
	Shopping & Changers Tour of Melbourne			\$ -	\$ -	\$ -	\$ 178.20	\$ 16.20	\$ 162.00
	Melbourne Sports Lovers Tour			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other		80	55.00	\$ 4,400.00	\$ 400.00	\$ 4,000.00	\$ 11,000.00	\$ 1,000.00	\$ 10,000.00
	Event Management Flat Fee	5	55.00	\$ 275.00	\$ 25.00	\$ 250.00	\$ 4,730.00	\$ 430.00	\$ 4,300.00
	Event Manager - day			\$ 1,500.00	\$ 136.36	\$ 1,363.64	\$ 805.00	\$ 73.18	\$ 731.82
	Contingency			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Accommodation Deposits Paid to Hotel				\$ -	\$ -	\$ -	\$ 24,749.00	\$ -	\$ 24,749.00
Total Expenses				\$ 103,503.50	\$ 9,409.41	\$ 94,094.09	\$ 109,948.04	\$ 7,748.09	\$ 102,199.95
Net Profit				\$ 191.50	\$ 17.41	\$ 174.09	\$ 7,238.96	\$ 701.46	\$ 6,537.50

SPACO DIESEL

A search for Quality. Always.



COMPONENTS FOR DIESEL FUEL INJECTION PUMPS

Manufactured by R.A.S.E.D. SPA
VIA PADOVA 183 – 20127 MILANO – ITALY
Tel: +39022722161
Fax: +39022567974
Email: info@rased.it
www.spacodiesel.com



Gearing Up for Common Rail



With the ever increasing registrations of diesel vehicles on today's roads, there is a growing opportunity for specialist workshops to equip themselves with the tools and knowledge required to repair common rail systems.

Working with common rail is dangerous and meticulous. Safety and cleanliness are paramount and therefore only specially equipped diesel workshops can perform this work.

To ensure that Bosch remains at the front of diesel servicing, Bosch has introduced the Common Rail Partners Program. This program gives diesel workshops the opportunity to gain access to the specialised equipment, knowledge and support needed, to test and repair Bosch common rail components safely, to Original Equipment specifications.

The Bosch Common Rail Partners Program has been released in Australia, across 17 businesses. To be included in the program, these businesses have made a significant investment in authorised Bosch common rail test and repair equipment. They have also upgraded their workshops to ensure appropriate clean work areas and safety measures are in place, as well as undergoing extensive factory based training.

Whilst offering opportunity and support for specialist diesel workshops wishing to expand their businesses, the program also aims to provide a premium, convenient service for car service workshops as well.

Many car service workshops would have previously had to turn away business, not able to provide a

service for those with common rail diesel vehicles. Those workshops who did accept the business often incurred frustrating, lengthy and costly downtimes, with components having to be sent away for days to be serviced.

The Bosch Common Rail Partners Program now offers workshops a quicker, more affordable, local alternative for expert testing and repairs. This means workshops no longer have to turn away this work and can provide their customers with a quicker, more convenient service, getting them back on the road sooner.

We will continue to monitor the Bosch systems within the market and each business involved in the program will work towards building up exchange stock to support vehicles equipped with Bosch Common Rail systems within their region. This will ensure an even faster turn around of both pumps and injectors to customers.

We look forward to working to expand the program, in order to provide our diesel customers with the very best in common rail component diagnosis and repair.

The Common Rail Partners are listed opposite. Please contact them for any common rail pump and injector parts and servicing needs or issues you may have.

Common Rail Partners

AG DIESEL

135 Westall Road, Clayton VIC
Tel 07 4051 2386

CAIRNS DIESEL SERVICE

118 Scott Street, Cairns QLD
Tel 03 9547 1525

DENCO DIESEL & TURBO

363 Edward Street, Wagga Wagga NSW
Tel 02 6925 3722

DIESEL AUSTRALIA

45 Allgas Street, Slacks Creek QLD
Tel 07 3808 6988

DIESEL CARE,

18 Pechey Street, Toowoomba QLD
Tel 07 4698 9350

DIESEL SPECIALISTS

18 Matheson Street, Virginia QLD
Tel 07 3216 5866

DORANS DIESEL

71 Pilkington Street, Townsville QLD
Tel 07 4779 7944

EMERALD DIESEL

Unit 1,12 Industrial Drive, Emerald QLD
Tel 07 4982 4919

FREMANTLE FUEL INJECTION

27 Strang Crt, South Fremantle WA
Tel 08 9335 4803

HIGHWAY DIESEL

26 Anne Street, Coopers Plains QLD
Tel 07 3277 5244

HI TECH DIESEL

1,418 Churchill Road, Kilburn SA
Tel 08 8359 6088

LISMORE DIESEL SERVICES

93 Alexander Parade, Lismore North NSW
Tel 02 6621 3412

MTQ VIC

240 Hammond Road, Dandenong VIC
Tel 03 9794 2888

MTQ SA

7 Opala Street, Regency Park SA
Tel 08 8243 2688

SYDNEY DIESEL CENTRE

126 Cumberland Highway, Smithfield NSW
Tel 02 9681 7700

UNITED FUEL INJECTION

479 Great Eastern Highway, Redcliffe WA
Tel 08 9479 7400

DIESEL TORQUE

OFFICIAL MAGAZINE OF THE ASSOCIATION OF AUSTRALASIAN DIESEL SPECIALISTS INC. (AADS)

Editorials Required

Diesel Torque is your magazine. Currently most articles are submitted by your respective State Chairmen and members of the National Committee.

We would encourage the members to submit any articles of interest that everyone would enjoy reading. It does not necessarily have to be technical, diesel or turbo oriented. We are looking for articles of interest across the board to all who read our magazine. Write an article of interest, find an article that you think would help others and submit it to your State Chairman for publication.

- All submissions can be sent to the following email address
aads@apcaust.com.au
- All pictures should be sent separate from text, preferably in jpg format and all articles written in Word.
Do not embed images into the word document.

Help yourselves to your own magazine and think how you can contribute to make it something that is of interest to your fellow members. This is your association, make it a success. We look forward to receiving your contribution for the next publication.

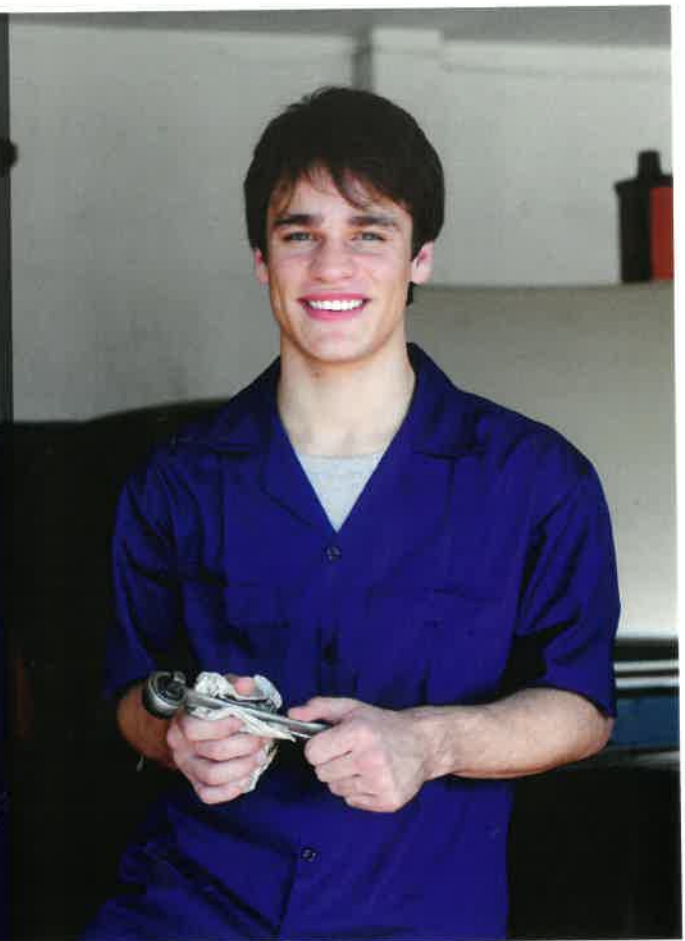
**Help Yourself,
It's Yours.**





Apprentice Training

The AADS Board have approved an apprentice training programme. This will allow us to provide Industry specific training to our apprentices. When Wayne Dunning from Diesel Distributors offered his training facility in Brisbane to train to specific years, i.e.: 1st, 2nd and 3rd year apprentices throughout Australia and New Zealand the board responded by putting forward \$20,000.00 to get a programme up and running.



A sub-committee has been formed to control where it is best to distribute the funds and structure the training curriculum that our apprentices will be taught. The committee is currently looking at what would be a fair costing, appropriate content and how we could reward current apprentices that exceed with a possible prize in their final year. We currently have 12 first year, 5 second year and 9 third year apprentices and I think the numbers reflect that the industry is forced to train. Training in our industry has always been inadequate and we now have an opportunity to use resources that haven't been available in the past.

Members, I welcome you to help the acting committee with your input. If you could please forward any ideas, thoughts and especially what you think the curriculum should include in the respective years contact Gavin Jones via email at gavin@fremantlefuel.com.au.

I thank you for your participation in advance.

Gavin Jones

Western Australian Branch Chair, AADS INC

Subscribe to *Friday Facts*



The Australian Trucking Association publishes a weekly electronic newsletter, *Friday Facts* which brings readers the latest news from the industry, government, products and events. The newsletter is completely free, and you can unsubscribe at any time.

To subscribe, go to www.atatruck.net.au and follow the *Friday Facts* link.

20 August 2010 *Friday Facts* included:

- Check your energy use and register now
- Volvo develops wireless roadside inspections in US
- Coalition promises flexibility in the fatigue laws
- Labor promises M80 ring road upgrade in Melbourne
- Level crossing safety is everyone's responsibility
- Industry events calendar

A problem with a 1981 Mercedes six cylinder truck engine

By Evelyn Johnson

POWERTECH

I have had a very stressful 5 years:

it began when an engine re-conditioner obtained a report from a Mercedes mechanic after the 1981 engine failed.

First the engine failed after four years and 20,000 km no 3 piston seized.

After a full overhaul of the engine, pump, injectors and turbo the engine failed again.

The report from the Mercedes mechanic said that the Bosch injectors were set at the 200 Bar Bosch specifications and they should never have been set at this, as Mercedes say that only Mercedes specification should be used, which was 175 Bar.

Setting the injectors at 200 Bar had caused a tablespoon of fuel on top of every piston and destroyed the engine. After another overhaul and resetting the injectors at Mercedes specs the truck ran like a dream.

There were a lot of other problems with the truck but the engine re-conditioner decided that this was the cause and the courts could not decide.

A well known diesel fuel injection expert in New Zealand ran tests to find the amount of fuel delivered by the injector and it was found that by increasing the pressures this reduced the amount of fuel. Timing was minimal.

The report for the Mercedes mechanic said that it caused the engine to over fuel and destroyed the engine.

Five years down the track and thousands of dollars later the matter has never been solved, despite the fact that Bosch confirm that the setting is 200 Bar.

A little hint

The injectors are under the rocker cover and there was a hole in the intake manifold and no 3 rocker cover. Compressions were below 300 PSI, Timer was faulty (not part of pump) but fuel shop was blamed for all of this.

Interesting how by just setting a set of injectors to Bosch standards which is a world wide standard can cause thousands of dollars in damages and legal fees.



AADS has recently subscribed to the Cellarmaster Community Network, to give members access to great wine at great prices. All the big brands are on offer, together with a number of boutique wines and exclusive labels.

AADS Members get a \$50 discount voucher for wines on the Cellarmasters website plus 5% discount on further orders to already discounted prices.

Check the AADS website for more details on this offer!

A Diesel fault in a Prado

This article is a true description of an AECS technical help desk problem and how it was solved.

Vehicle: 1996 Toyota Prado 3.0Ltr Turbo Diesel

Problem presented to the help desk

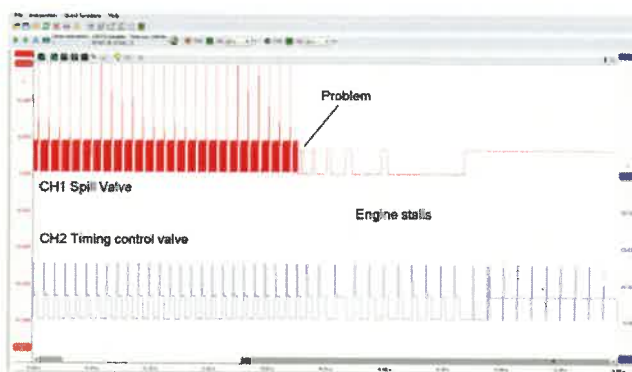
This vehicle had been around several garages and ended up in a workshop that owns the ATS scope and could rely on the back up from the AECS' help desk.

The vehicle starts fine and runs fine but intermittently stalls, sometimes it runs for several minutes and sometimes it stalls immediately after start up.

There are no fault codes present, the vehicle does not have an immobiliser. The previous shops had the fuel filters replaced and even the tank removed plus cleaned. The fuel lines had been blown out as a fuelling problem like Diesel bug was suspected. This was determined by cracking one of the injector lines while running, the diesel stopped coming out when the engine died.....

Measuring

On a Diesel vehicle, you need to have the injection quantity and injection timing correct for it to run, so that always seems to me the best place to start. Best is to measure Spill valve (quantity) over TCV (timing).



ATS scope recording with the new multi-channel software when the problem occurred.

This recording sorts straight away out that there is no lack of fuel coming into the injection pump.

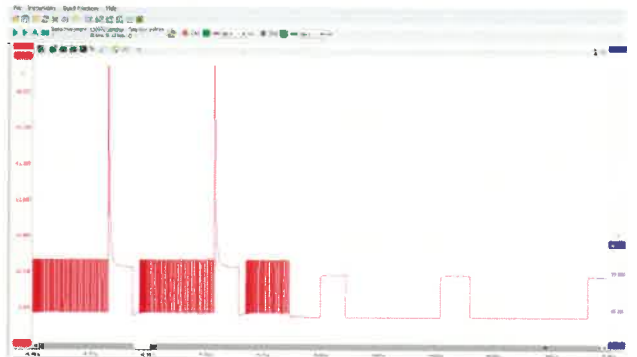
For example, a blocked filter, fuel intake or air leaking in,

reduces the internal pump pressure. The reduced pump pressure retards the injection timing. The ECU will try to compensate by reducing the TCV duty cycle.

In this pattern, the TCV Duty Cycle stays unaffected except a frequency shift.

During our DMS 1-1 training seminar we build this straightforward conclusion making skill.

In the same pattern, you can also see that the Spill valve signal changes dramatically. The current control and inductive spike disappears, just before the engine stalls.

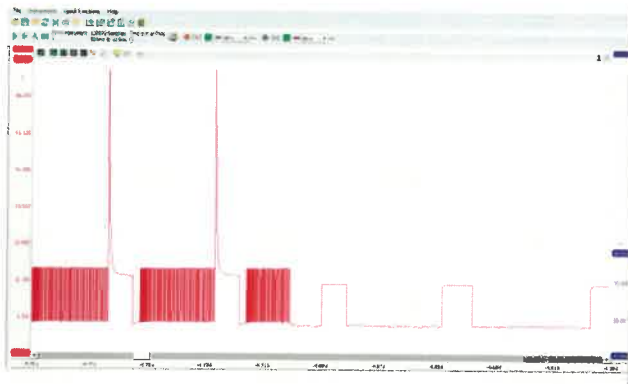


Zoomed in detail on the spill valve pattern.

The current control only appears when the current is high and the inductive spike only appears when a magnetic field collapses. It was clear from this pattern that the current through the spill valve was suddenly reduced, stopping a magnetic field from being built up, leaving the spill valve open. An open spill valve stops Diesel injection immediately, stalling the engine.

Better be sure

To make sure the diagnostician measured the spill valve signal vs the pump shaft sensor. The pump shaft sensor is the key input the ECU needs to activate the spill valve. This measurement was not necessary, but it only involved moving the position of one test probe.



ATS scope recording of Pump shaft sensor vs Spill valve.

The pump shaft signal stayed fine all the way, until the engine had stopped.

Current flow

The current through the spill valve of this vehicle flows through a system relay (11), a spill valve relay (A40), through the Spill valve itself (A248), through the switching circuit in the ECU (25), and then on to earth.

The easiest was to measure on the power supply side of the spill valve (A) vs the signal side (B). This recording was not saved, but revealed a reasonable quality power supply, which did not collapse when the spill valve signal faulted.

For sure

This meant that the diagnostician had found the problem for sure, power supply intact, switched side properly switched to earth, but no current flow. The combination of these facts can only mean one thing, an almost open loop circuit in the spill valve circuit between where the probes are connected.

The external wiring to the valve looked fine so we had to assume it was in the spill valve itself.

After removing the pump and replacing the spill valve (recalibration required), the vehicle ran fine. It has done more than 1000 km's now and is still running fine.

Conclusion

This job was real easy, it did not take more than about 30 minutes to locate the fault. No modern technician should struggle with this.

The AECS skill building seminars are held throughout the country and Australia and are very well attended. We are building up the number of technicians who are obtaining these diagnostic skills steadily, don't get left behind.

It should also be clear that attempting jobs like these without a proper scope like the ATS 5000 makes a good technician look bad.

Choose your equipment, training and support supplier wisely.

for AECS Ltd:

HP Leijen (trainer/research)

Web: www.aecs.net

Email: hpleijen@aecs.net



AADS 2011 Conference

The next Australian Convention of the AADS is scheduled to take place in Adelaide in March 2011. Details will be added to the website as they become available.

2010 Convention in Dunedin

Diesel Torque welcomes any contributions from presenters and attendees of the September 2010 Conference in Dunedin.

Photos and letters/articles can be emailed to aads@apcaust.com.au for submission to the NZ Chairman.

AADS Members in Christchurch

We are pleased to report that the AADS members located in Christchurch and their families are fine following the earthquake. The AADS would be happy to help in any way if needed, and we wish them best of luck in the recovery effort.



PART 2 On the Road

with Ross Worgan, Deselequip, Inverell NSW

In September 2009 myself and 8 other blokes did a bike trip out to south-west Queensland for six days. 6 on bikes and 3 in a back-up truck.



Day 3 continues: Great riding from Hungerford to Thargomindah through remote country – all private property. Lots of rocks and sand, farm tracks and fence lines. Tonight it's hot showers and a barbeque at the caravan park. Only 2 flat tyres today, both on Vince's DR650 Suzuki. He was lucky to have the rest of us looking on – giving him lots of advice – and having a cold one while he changed it.

Day 4: Lots more off-road from Thargo up to Toompine and back to Yowah. Lots of sandy country, claypans and rocky ridges. Today saw a broken gear lever on Easty's KLR 650 Kawasaki. We used a pair of vice grips and got it into 4th gear and rode for about 15km to a nearby property. Here we were able to use their welder to repair it and get going again. We came across a claypan wide enough to wind the bikes out to about 150kmh. (A real blast). Late lunch at Toompine Pub (pop 3) and from there we headed east to Duck Creek opal field. This is a real outback mining area with no natural water and small huts. Most people leave during the summer. From here it was just two-wheel tracks to Macs (guide) place, about 80km away. Today we were 8 hours in the saddle and covered about 400km. Tea was spaghetti bolognaise (camp oven style) washed down with beer and red wine followed by another fantastic night under the stars.

Day 5: 8.00am start today saw us head off cross country to look at an old steam engine – last used in the 1930s. It is still where it was used to drill its last bore which was 1,300 feet deep. It's demise brought about by more compact and portable DIESEL ENGINES! To drill the bore took 2 men on the percussion rig, and 6 men to bring wood and water for the engine for a period of 8 months. The nearest water was about 30km away. The bore is now capped and water is piped around the property. Fantastic trail riding past tree-lined waterholes along creeks running into the Paroo River. After some searching we were able to cross the Paroo at a shallow but muddy crossing which made for some exciting moments. We finally met the bitumen between Cunnamulla and Charleville, where we met the Ute and had lunch. We then followed dirt roads for a couple of 100kms into Bollon and had tea at the pub and made our last camp by the creek north of the town.

Day 6: B-line for home today. Back to work tomorrow!

It has been a great week camping out every night under the stars with good company, no phones, no hassles, no worries!



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Diesel designs cut health risk

CSIRO researchers are developing technologies to reduce mine workers' exposure to damaging particulates.



When the German chemist Dr Rudolph Diesel first introduced his diesel engine to the world at the end of the 19th century it was considered a major advance to industry.

The engine's high thermal efficiency meant it burnt less fuel than a gasoline engine and, because of the diesel engine's more efficient lubrication abilities, the engines would last longer.

But, as we have learned over the years, emissions from carbon-based products such as the diesel engine also have significant negative effects on human health.

More and more industries, governments and communities are becoming aware of the dangers of particulate material suspended in the air.

Carbon soot particles from diesel engines allow to form on their surfaces other metals and toxic substances produced by diesel engines such as cancer-causing aldehydes (such as formaldehyde) and polycyclic aromatic hydrocarbons.

According to a report released last year by the Australian Coal Association Research Program (ACARP) 'the significant introduction of diesel engines in underground mining plants since the 1960s has created a hazard in terms of suspended particulates.'

'The extent of this hazard is indicated by NIOSH (National Institute for Occupational Health & Safety in the United States) where exposure levels of diesel emissions were shown to be significantly higher for underground miners than for other occupations,' the report said.

A 92 per cent reduction in diesel exhaust particulate means a safer working environment for miners.

Cutting emissions

A 92 per cent reduction in diesel exhaust particulate means a safer working environment for miners.

This report covers the ACARP research project into using acoustic agglomeration techniques to reduce diesel particulates from coal mine vehicle exhaust by 92 per cent.

Dr Patrick Glynn, a Project Leader with CSIRO Earth Sciences and Resource Engineering, says that despite the expected improvements in emission

performance by new diesel fuel, end-of-pipe emission control may still be required to fully satisfy occupational health safety and environment expectations and future regulation.

Dr Glynn said the goal of the ACARP project was to achieve 'a high removal of 2.5µm (PM 2.5) particulate matter from the exhaust stream.'

'These particles have a propensity to be held in suspension and will only settle by inertial (gravity) means very slowly.

The ultrasonic agglomeration method of removal increases the mass of the diesel particles. A sonic probe-generated sound wave is tuned to increase the energy in a small particle such that it is attracted to other diesel particles. This increases the overall mass of the agglomerated particle, allowing it to be removed by a 'cyclone' using exhaust stream velocity.'

This cyclonic filtration method is similar to the one used in modern vacuum cleaners: the dust-laden air in the outer walls of the cyclone swirls downwards and at the base of the vortex begins to swirl upwards.

The vast majority of the debris separates from the air stream as air reaches the bottom of the swirl, and is deposited in the dirt container. Only a small fraction remains in the air and can be removed by a secondary, cartridge-type filter.

Testing positive

The evaluations were conducted at the Control Technologies International Ltd laboratory at Archerfield, Queensland, on a water brake dynamometer and were split into four stages including bench-evaluation of a diesel engine to measure diesel particulate emissions over the RPM (revolutions per minute) spectrum; and building an electrostatic diesel exhaust filter and two prototype diesel exhaust scrubber ultrasonic filters which were fitted to a mine vehicle for a three month trial period.

The evaluations also involved correlating the fundamental mass-over-time measurement used in this ACARP project with those from a NIOSH diesel particulate exposure-measuring instrument.

This was done to measure diesel particulate loading in real time and the testing was to verify the effectiveness of this instrument against gravimetric (or fundamental) measurement.

Good results

The results have been of significant value to scientists working to improve occupational health and safety for mine workers.

'The reduction of 92 per cent in diesel exhaust particulate achieved by this project is remarkable because there is very little backpressure on the exhaust system that would, using normal micron filters, cause reduced engine output,' Dr Glynn said.

'The outcome of the project at 92 per cent particulate reduction came close to the 95 per cent reduction aimed for at the beginning of the project.'

Since last year's report was submitted the research team has been awarded a second grant for a triple-chamber acoustic agglomerator that will remove up to 99 per cent of diesel particulates. This project is now underway.

This work is part of CSIRO's coal technology research, which is focused on the development of technologies to improve the safety and efficiency of underground coal mining, and accelerate the deployment of low emission coal-based power technologies.

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Fish fillets with warm salad of asparagus and prawns



This is a quick and easy recipe that looks good for a dinner with friends and goes well with a glass of Sauvignon Blanc from our most recent partner, Cellarmasters (see insert on page 9).

INGREDIENTS (for 4 people)

- 4 fish fillets
- 2 bunches of asparagus
- 1 red onion
- 200g cooked prawns without tails
- ¼ cup olive oil
- Juice of 1 lemon
- Salt and pepper
- Fresh coriander or parsley to serve

PROCEDURE

- Prepare a vinaigrette with the oil and lemon juice in a screw top jar, set aside.
- Lightly stew the asparagus in a pan for a few minutes until tender. Add the sliced onion and the prawns during the last minute of cooking to warm up.
- In the meanwhile, grill the fish fillets. Barramundi or any other white fish works well for this dish.
- Lay the asparagus and prawns mixture in the middle of the plates, sprinkle with half of the vinaigrette.
- Lay the fish fillet on top of the warm salad, season with salt and pepper and the rest of the vinaigrette.
- Add chopped herbs and serve.

Branch Updates



Neil Quick NSW Chairman



I have nothing new to report since our last Diesel Torque magazine and hope everyone is progressing fine with their business in this economy at the moment. Our next state meeting is in Tamworth (the heart of country & western music) with this been a voting year for the committee and an AGM. I encourage any body that would like to stand for a position to think seriously about that commitment as it is not as bad as people think and to my liking a rewarding and enjoyable position to be in. The date for the meeting is 23rd October, 2010 and we hope to have a full and exciting program for not only the members but their partners as well, so please do encourage them along. I hope to see as many as possible there and to enjoy the opportunity to let your hair down, chill out and mix with good company. Cheers

Paddy the Irishman died in a fire and was burnt pretty badly. So the morgue needed someone to identify the body. His two best friends, Seamus and Sean (also Irishmen), were sent for. Seamus went in and the mortician pulled back the sheet.

Seamus said 'Yup, he's burnt pretty bad. Roll him over.'

So the mortician rolled him over.

Seamus looked and said 'Nope, it ain't Paddy.'

The mortician thought that was rather strange and then he brought Sean in to identify the body.

Sean took a look at him and said, 'Yup, he's burnt real bad, roll him over.'

The mortician rolled him over and Sean looked down and said, 'No, it ain't Paddy.'

The mortician asked, 'How can you tell?'

Sean said, 'Well, Paddy had two arseholes.'

'What, he had two arseholes???' said the mortician.

'Yup, everyone knew he had two arseholes. Every time we went into town, folks would say, 'Here comes Paddy with them two arseholes....!'



David Kite NZ Chairman

The year is rapidly disappearing and the Conference is nearly upon us. I'm looking forward to catching up with everyone at

the Conference. The Conference is going to have lots of entertainment and will be a good time to catch up with others and about the Industry and where it is heading, maybe even solve a few problems

The AADS has been out there working hard to sell the Diesel Industry. A Big Thank-You to Wayne Dunning and Mike Hurley for the press release in the Motor Industry. I have also put a advertisement in to do a followup to help sell the AADS and its members.

Some Business's are experiencing an increase in fuel leaks again, all good for business , keep up the good work Oil Companies!.

Also, anyone who has apprentices , could you please contact me as I am trying to work on something between MITO & AADS for the off job training that is allocated. I would like to catch up with employers to see how the apprenticeships are doing as the AADS invest a bit of money in the MITO scene.

Once again I look forward to seeing you in Dunedin to discuss up and coming events.



Walter Vrbancic

QLD Chairman

Hi everyone, I hope that you are all well and enjoyed the last conference, I was unable to attend due to family commitments. We are nearing the end of the year and Christmas is just around the corner, it seems to go faster every year. It has been a mixed year for us with business being good at times and then slowing down again. Fortunately this year has been better than the previous one.

The elections that are coming up haven't helped as they seem to slow business noticeably and customers seem to like to wait and see before they spend. This year with the GFC you probably all have had to rethink the way you carry out business and streamline everything. We have done this and it has made us look at how we are currently doing our jobs and where we can improve our services to our customers. Nothing makes you look harder than hardship. It has given us a boost in business and confidence and it would be good advice for everyone to look at themselves.

This year is an election year for state committee's. Please consider this a worthwhile and rewarding experience and nominate someone or yourself for the positions that will be vacated in November. I will not be standing for any position as I have now done it for 7 years and need to step down.

Our next meeting will be at the new Novotel at the Brisbane airport, it is convenient for all the out of town members. The date will be 13th or 20th November and will be confirmed shortly with details for booking a room.

Until next time.

Graeme Wilkinson

VIC/TAS Chairman



There has not been a great deal of Branch activity since the convention in May. It was great to catch up with the VIC/TAS members that attended the convention and also interstate members that I have not seen for some time. My staff had a very enjoyable time also. If any VIC/TAS members have suggestions for or would like to host a meeting please contact me. At this point in time we have not made any plans for our next meeting.

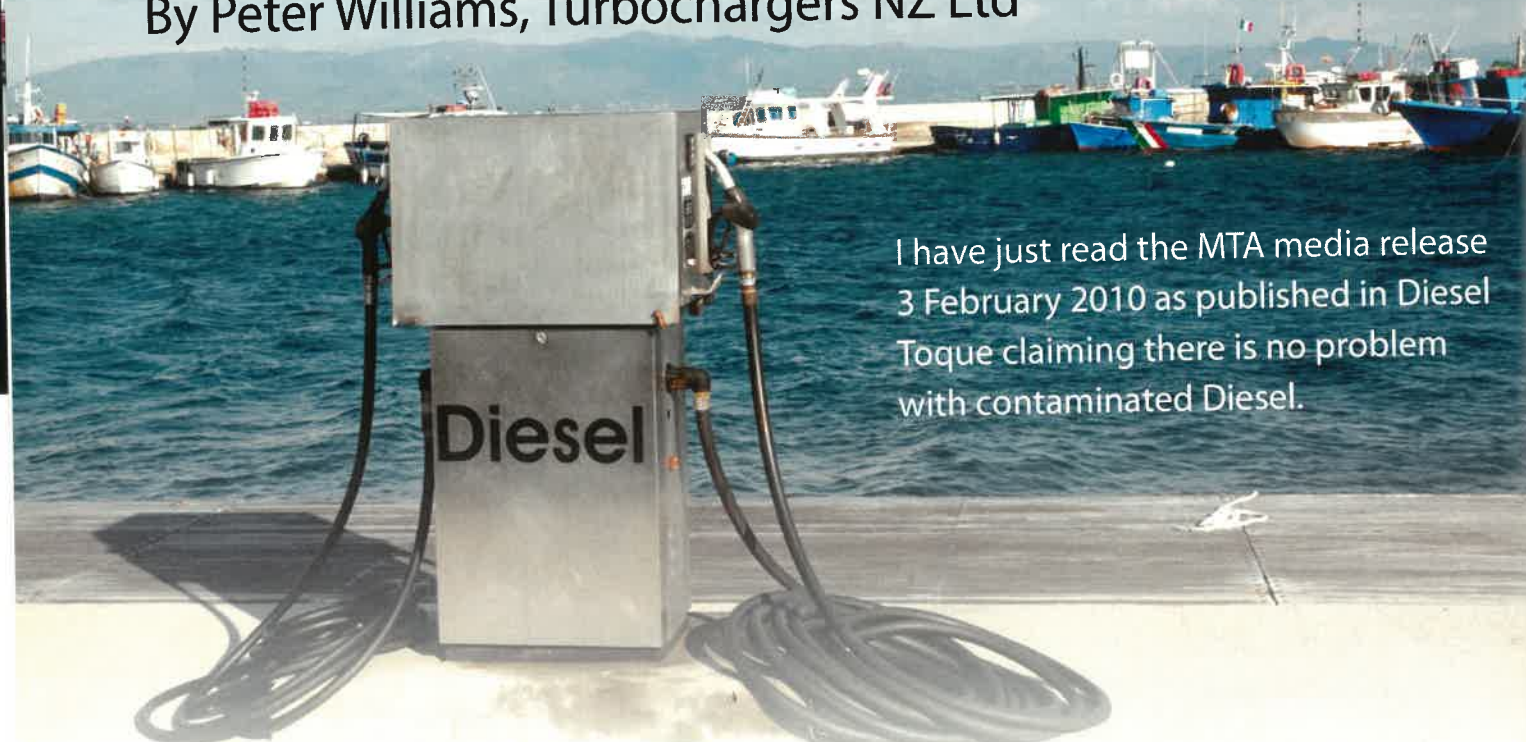
**Branch Committee elections are
upcoming in all States.
Most branches will have their
meeting in November.**

**All members will be invited to vote,
either at their meeting or via post.**



Contaminated Diesel?

By Peter Williams, Turbochargers NZ Ltd



I have just read the MTA media release 3 February 2010 as published in Diesel Torque claiming there is no problem with contaminated Diesel.

Despite the reassurances there does appear to be problems out in the field which may be old issues encountering new technology.

The surveys will naturally focus on areas of high population but these may not be areas where the contamination is occurring. While the majority of vehicles experiencing fuel contamination are fitted with Common rail fuel systems. In fact there may be several factors that may be causing the 'Diesel' issues and I submit the following for your consideration.

Diesel & Heat

A common problem is corrosion found inside fuel systems which has the appearance of water corrosion damage.

In fact this can often be the result of high fuel temperatures causing acid erosion. Diesel exceeding 70°C will become acidic and the acidity will increase with temperature.

The high fuel pressures/temperatures along with the high bypass rate of fuel returning to the tank means that 2-3 hours are operation some modern engines, not fitted with fuel coolers, will have fuel which is acidic and corrosive.

Diesel & Salt

Another marine problem, not commonly experienced in main centres, is injector needle seizure. The close tolerance Piezo Injector may be particularly susceptible to this type of failure.

In New Zealand Diesel fuel is piped from the refinery to the greater Auckland area with little possibility of contamination. While coastal tankers transport fuel to other centres again with little opportunity for contamination because the same product is transported in the same tanks.

However this may not true where chartered tankers are used to bring diesel fuel in from overseas for discharge in the Islands and smaller ports. A ship may have tanks which carried salt water as ballast and/or be washed clean with salt water prior to loading diesel fuel.

Any water remaining in the tanks will be absorbed in the diesel. The water may vaporise off but salt is hydroscopic and will remain in suspension until it passes through the injector where the salt crystallizes causing needle seizure.

There is no doubt that the fuel is a lot better than it used to be but so is engine technology, so is the 'contaminated diesel' issue simply an old problem in modern applications?

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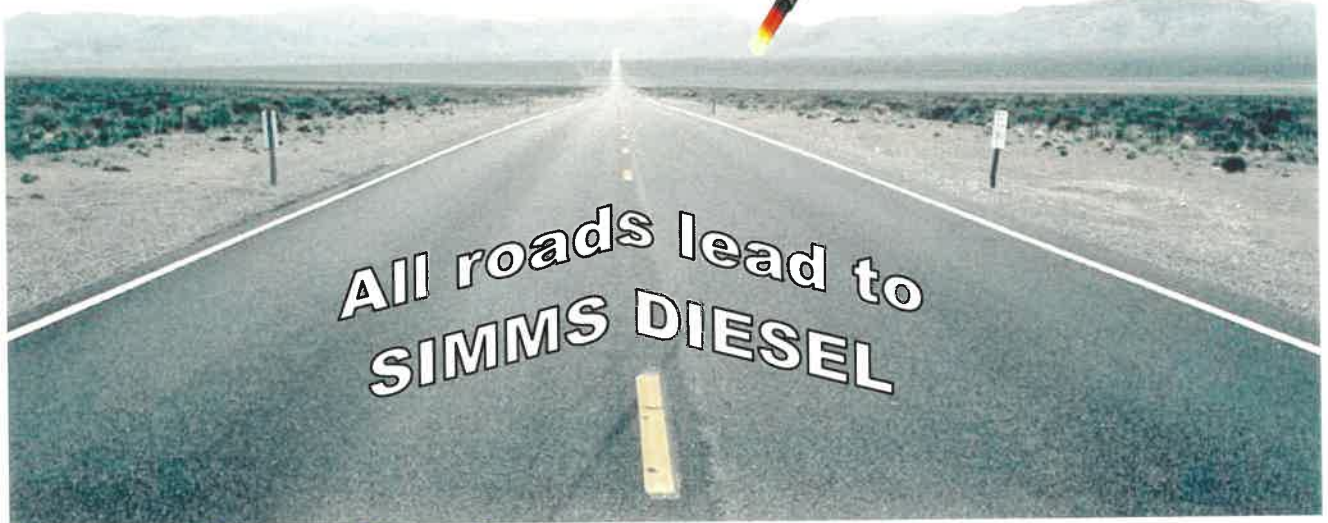
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