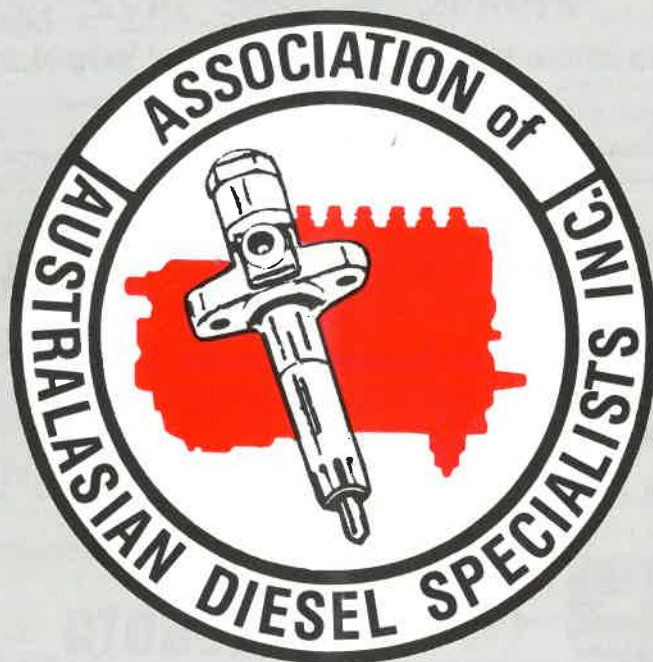


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DIESEL TORQUE



**Official Magazine of the Association of
Australasian Diesel Specialists Inc.**

EDITION THIRTY-NINE

SEPTEMBER, 1994



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EDITORIAL

It has been said that "Life was not meant to be easy" and for the last twelve years or so AADS management of conventions, national committee, executive committee, training and technical committee meetings and business in general was in the hands of executive officer Lance Hosking, and life was fairly easy. With the sad and untimely death of Lance in August we have been brought back to earth very suddenly and all members of this association will have to give something of themselves to temporarily fill the void that Lance so capably filled, with the help of his loving wife Mary.

We are extremely fortunate that even during his illness Lance still had the association foremost in his mind and his forward planning for the Melbourne convention has ensured that it will be a success just as if he was still with us. It takes a very special person to think so much of his work, family and friends as Lance did in the last weeks of his life.

It is now up to all members to pay tribute to this man and his efforts on our behalf by attending the Melbourne convention. This can be our way of showing appreciation of Lance to Mary who is continuing on working for us all and she will as usual be at the Melbourne convention caring for our needs.

When asked to describe her life with Lance, Mary replied "just perfect". Mary, the work Lance did for all of us in AADS was also "just perfect".

AADS Executive Committee

President.....Stuart Walton
Vice President F.I.E.....Kevin Cripps
Vice President T/CBert Sievers
TreasurerDoug Riley
Secretary.....Don Holgate
Registered Office AADS Inc:
P.O. Box 215, Oaklands Park 5046,
Sth Australia.
EditorMick Rankin

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Diesel Specialists Inc.

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

PRESIDENT'S REPORT

It is hard to express in words my feelings and those of all our members on the sudden and sad death of our executive officer Lance Hosking.

Lance, one of the most unselfish men I have met, will be remembered by all our members for the outstanding effort he and his wife Mary put into taking the AADS up to the very professional organisation it is today. It was pleasing indeed to see members from all states of Australia attend Lance's very moving funeral in Adelaide.

A memorial trophy in Lance's honour has already been proposed and funds promised from R M Diesel. The current executive committee will deliberate on the form this memorial trophy will take and advise you all in due course.

My thanks to a number of members for their support in rallying round to keep our wheels turning during this sad period.

In brief, the rules committee are making considerable progress and will soon be in a position to inform you of the forthcoming programme.

The 1995 convention will certainly be our best yet with many top class speakers including our old friend Mike Rayne. Mick Rankin will be providing more details elsewhere in this edition.

I am not inclined to go into any more detail on our activities at this time as a mark of respect for Lance.

Our hearts go out to Mary who I know can gain some comfort from knowing that Lance has left an indelible mark on our industry.

S.N. Walton
PRESIDENT ADS INC.

TREASURERS REPORT

We are all very saddened by the passing of my friend and our executive officer Mr Lance Hosking.

The big boots he created will be awfully hard to fill.

I greatly value the work he did, both for me, and the association and I know his fiscal and organisational skills will be sadly missed.

We all offer our condolences to Mary.

Nearly all our fees have come in early this year and our financial position is greatly improved.

At the recent executive meeting in Perth lengthy discussions were held with Mr Rankin on the finances we have allocated for future training (\$100 training levy).

Mr Rankin has been given the job of using the cooperative services of Mr Don Blankesby to finalise a budget and a model for this program.

I am happy to see that the progress towards a top shelf convention in Melbourne has been well ahead of schedule, due to the efforts of an inspired Victorian executive and the assistance of the late Lance Hosking.

I am excited to see key speaker Mike Rayne returning from the U.S.A. to give a key note address. Thanks must go to Lucas for their financial assistance to get him to the Melbourne convention.

While the National Executive was in Perth they attended a local branch divisional meeting and Mr John Nicholls was re-elected to the chair with a new committee. We all hope this may revitalise the W.A. Branch.

The Esplanade Hotel in Fremantle has been selected and confirmed for the 1996 convention. It is a traditional 19th Century Hotel and should give a different feel for the '96 convention. We will look forward to Fremantle in '96.

State chairmen are reminded that for every executive meeting a balanced branch treasurers report is required. **NONE** were received for this meeting.

With the new board structure for A.A.D.S. in March 1995 I have effectively voted myself out of a job, but I must say I have thoroughly

enjoyed my years as the treasurer of A.A.D.S. and now look forward to the challenge of the '96 convention in Perth and '97 convention in Darwin.

Doug Riley
TREASURER AADS INC.

RULES COMMITTEE REPORT

It is hoped that by the time you receive this issue of Diesel Torque most of you will be aware that, at the A.G.M. Last March, a proposal to re-structure the administration of the Association was adopted. However, before any of the proposed changes can be implemented, there are a series of procedures that have to be carried out and these are as follows -

1. a major re-write of the Rules of the Association needs to be done and, after completion, they are to be reviewed and edited before new sets of Rules are printed for distribution to all members,
2. under the Association Incorporation Act, 1984 the re-written Rules must be submitted to each financial member for perusal,
3. all financial voting members have to be given the opportunity to exercise their right to accept or reject the re-written Rules, so a postal ballot shall be conducted under existing Rule 28.6 and
4. before the re-written Rules can be lodged with the Department of Consumer Affairs, at least seventy-five per cent (75%) of the members holding voting rights have to cast a vote in favour of their adoption.

At the time of writing this article (26/8/94) the re-write of the Rules has been completed and the final draft is being edited and reviewed by the Executive and Rules committees. Once this has been completed, the next step will be to print sufficient books of Rules so that all **financial members (that's right financial members only)** can be sent a copy on posting day which is scheduled for the **15th. September, 1994**. It is proposed to also send with each book of Rules a circular briefly explaining where the major changes have been made because not all existing rules have been changed e.g. the rules relating to the

Objects of the Association, Fees & Subscriptions and many others remain as per the existing Rules.

Enclosed with the book of Rules sent to each **financial member holding voting rights** will be a postal ballot paper which must be completed and returned in the envelope provided to the Returning Officer. The deadline for all voting papers to be in the hands of the Returning Officer has been set at **5 p.m. on Friday, 21st. October, 1994.**

The final step is that, after the votes have been counted on **Monday, 24th. October, 1994** and provided at least seventy-five per cent (75%) of eligible members have voted in favour of the resolution, the necessary action will be taken to lodge the new Rules with the Department of Consumer Affairs in accordance with the Act and once this has been done then the new Rules will then become effective as from the date of lodgment.

Whilst the time-frame in which all of the above has to be accomplished is a little bit

tight, it is essential that it be adhered to very strictly otherwise the proposed re-structuring will not be in place before our next A.G.M. in Melbourne during March, 1995 as was anticipated last March. I do believe, however, that with the co-operation of all members concerned the necessary deadlines can be met. So let's see some good old commitment from the grass roots of the Association to put into place the changes that are designed to provide you with direct representation on the proposed Board of Management via the chairman of your local Branch (of course this will only happen if you attend your local meetings and let your chairman know about any gripes you have about the running of the Association).

If you are a financial member and don't receive a copy of the Rules by the end of September then immediately contact your local chairman who will arrange to have one sent to you.

Yours in service,
Keith Jurgs
(Chairman of the Rules Committee)

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VICTORIAN/TASMANIAN BRANCH REPORT

A great deal of behind the scenes work has been ongoing by the Victorian executive to ensure a very interesting and informative national convention is presented in Melbourne in March 1995.

We urge every AADS member to start planning now to attend this particular convention and benefit from the experience.

The next Victorian/Tasmanian meeting has been set down for Friday, 11th November, 1994 and will be held at The World Congress Centre, corner Flinders and Spencer Streets, Melbourne, commencing at 6.30 pm. Following a buffet meal, an interesting guest speaker will address the meeting.

The meeting will receive an update on the programme and plans relating to the 95 Melbourne convention and we would still welcome any comments or suggestions from any member which will enhance and improve the 95 Melbourne convention. We ask as many Victorian/Tasmanian members as possible to attend this meeting on Friday, 11th November. We all gain from your attendance and support at our meetings.

Terry Brain
SECRETARY/TREASURER VIC./TAS. BRANCH
AADS INC.

QLD BRANCH REPORT

Queensland meeting was well attended once again with 28 delegates and 2 marketing members present. The State Chairman, Peter Hunter was unable to attend and the meeting was chaired by Greg Simmons.

It was the extreme regret to be informed of Lance Hosking's untimely death and the entire membership of the Queensland branch would like to extend their sincere sympathies to Mary and their appreciation for the wonderful job undertaken by Lance during his years of association with the industry.

The meeting was joined at 10.00 am by Ms. Jamie Maloney from the Quality Improvement Institute, who gave a very informative discussion on Quality Assurance which led to a lively discussion on this subject.

The Queensland Branch is now seeking

quotes from the Quality Improvement Institute on an industry based QA programme to certificate level for its members. It has become clear that through the lack of direction, our entire industry may be forced into undertaking some form of Quality Assurance when, with foresight, it would have been fundamentally simple for the Association to have been the regulating body.

Most interesting to all present was an industry survey undertaken on prices charged on product repair. Feedback from this survey was most positive and at the same time many members found that their own pricing structures were quite antiquated when compared to other pricing structures of industries similar to ours. It was noted that a member contemplating purchasing the latest VDM test bench, when capitalised out, would need to return in the region of \$350.00 per hour on current usage. It highlights the fact that we drastically undercharge for our services, and perhaps pay too much for our equipment.

On a lighter and more positive note, it was most pleasing to see Robert Bosch Australia respond to a query on the vast discrepancy in pricing on four Bosch nozzles and one Zexel nozzle between Bosch's price list and the equipment manufacturer's price list. As of the 1st September, 1994 these prices will be brought closer into line with the OE price list.

The Queensland Branch has decided that for the Association to get back on track it will immediately instigate a sub-committee to begin formulating resolutions for tabling at the next AGM, on the pursuit of excellence, a commitment to service, a much stronger work ethic for all members involved. This work ethic will be strenuously adhered to with detractors having to show just cause as to why they should remain under the umbrella of the Association.

It was felt that should the commitment by the members be such as to strengthen the Association to the extent that it could then lobby Government on the basis that our Association is duly acknowledged as being the voice of the industry it is supposed to represent.

Greg Simmons
QLD BRANCH AADS Inc.

SOUTH AUSTRALIAN REPORT

In contrast to my report in the June Issue it is with sadness to have to advise the sudden and unexpected death of Lance Hosking.

Lance began his association with the AADS as Convention Manager of the 1985 Adelaide Convention. During a drink on Christmas eve 1983, Lance offered to manage the event. Within two weeks of a meeting with the then State Chairman Geoff Watson, Don Wilkey and myself, Lance had put together a Committee and allotted each member a list of their tasks. The format and conduct of the Adelaide Convention set the pattern for all the Conventions which have followed.

Thanks to Lance's organising and Convention management ability, the 1985 Adelaide Convention attracted a record attendance, top technical presentations, great social events as well as being financially successful.

Lance was to manage another nine successful AADS Conventions, as well as being the Association Executive Officer. At the time of his death Lance had completed all the forward planning for the 1995 and 1996 Conventions.

All South Australian members will long remember Lance for his happy personality and his untiring contribution to the Association of Australasian Diesel Specialists.

Lives of all great men remind us
We can make our lives sublime,
And, departing leave behind
Footprints on the sands of time.

Tom Beesley
S.A. BRANCH AADS INC.

The 1985 Adelaide Convention.

Lance with some of his first AADS Committee members.



Colin Holford, Don Wilkey, Tom Beesley, John Brook and Lance.

N.Z. BRANCH REPORT

During August AADS New Zealand Branch held two very successful training schools. With 18 attending in the North Island and 7 in the South Island. The course was presented by Mike Christie from Diesel Progress N.Z. Ltd.

Mike travelled to Melbourne to obtain training on the VE System course held at Batman College of TAFE

This Training School answered that age old question; what does the AADS do for me? This course was praised by Nippon Denso, Bosch and Zexel Authorised Workshops.

It also offered excellent training to members that were or were not Authorised Workshops.

In New Zealand we have broken our certificates up into two sections one based on participating in the training school and the second on attaining the standards of the service and proficiency in successfully completing the post training test. This is to measure the value and effectiveness of this training.

What was that? Bosch, Zexel, Nippon Denso, C.A.V. and Stanadyne have more new Electronic controlled fuel injection products on the market. Boy I should have been a computer technician or will this finally sort the men out from the men. These new products will soon be a major part of business and for those not willing to invest in the future they will be left behind, or will it be a test of survival of the cheque book.

Will the day come when if you have not attended the correct training school and have the appropriate service tools you will be unable to buy spare parts from the Major Distributors?

Our A.G.M. was held on September 23rd and 24th but this is another story and gives me something to talk about in the next Diesel Torque.

P.S. You Aussies don't forget to polish the Bledisoe Cup as we will have it back next year beside the World Cup,

Don Holgate
N.Z. BRANCH CHAIRMAN AADS INC.

N.S.W. BRANCH REPORT

NOTES FROM MEETING HELD AT ORANGE 6/8/94.

Chairman Ken Scott opened the meeting with news that Lance Hosking had passed away. Ken called for 1 minute silence from all members as a mark of respect.

A discussion was held on advertising our association to general public and trade customers. It was noted that major manufacturers Bosch, Nippondenso, CAV do not advertise AADS Logo in any magazine. This meeting requests national committee approach appropriate manufacturers for discussion. Our thanks go to Alistair Weller for organising local media cover for our meeting in Orange. This type of advertising is ideal to spread information about our association to prospective

customers, more to the point it's **FREE**. Perhaps someone will organise similar coverage for our Port Macquarie meeting?

Discussion held on freedom of technical information via our library. It was explained that the AADS library has been disbanded and that the major OEM's were no longer supplying technical information to the library.

It was suggested that the main source of information is within the AADS members themselves, they should talk to each other more often and assist each other with any problem jobs. Country members assist each other more readily, hopefully this will spread to our city members.

In the near future apprentices may be specialising in different fields in their 3rd - 4th year; ie., Transmissions, Turbo's, EFI, Diesel.

Truck and Bus advertising costs were discussed; publication is monthly, 1 1/3 pages cost of \$1995.00 per month, on a national basis this constitutes an outlay of approximately \$10.00 per member. This levy could be raised by state or on national basis. It's most important that our association takes on a higher profile throughout the diesel trade by advertising its Logo and members. Please give advertising some thought put your ideas on paper and send to Les at Repco or bring your ideas to the Port Macquarie meeting in November.

Les Gordon
SEC/TREASURER N.S.W. BRANCH AADS INC.

DIESEL EXPERTS CONVERGE ON ORANGE

Diesel experts from all over NSW converged on Orange yesterday for the annual state branch meeting of the Association of Australasian Diesel Specialists.

Each year, the state branch meetings are divided into three areas, with the Western region meeting always held at Orange.

About 20 state representatives from as far away as Albury, West Wyalong, Wagga Wagga, Parkes, Dubbo, Gunnedah, Cessnock and Sydney discussed the latest in diesel engine technology.

State representative Alistair Weller, of Parkes, said another issue on the agenda was current changes in the national body of the association.

Mr Weller said a meeting such as this would allow diesel specialists to keep abreast of the latest innovations or problems.

"The theme this year that the national body adopted was environmental responsibility. It's a thing we like to remember and work toward," Mr Weller said.



Talking Diesel ... Association of Australasian Diesel Specialists state branch chairman Ken Scott (left) and state representative Alistair Weller.

VALE: LANCE HOSKING

1.6.29 - 3.8.94



Lance and Mary.

Lance was born at Mile End and his early teenage years were spent in the Woodville area of South Australia.

He was the youngest in the family and after his father was killed in an accident before Lance was three years old, his mother devoted her life to raising a happy and close knit family. His pleasant and generous nature was inherited from his mother.

Lance was educated at Woodville Primary and high schools. His occupations in life included:- Clerk in the S.A. Railways; clerk of papers and records, legislative council, S.A. Parliament, manager S.A. Lawn Tennis Association; manager, 1968 Davis Cup Challenge round; executive officer and convention manager, Association of Australasian Diesel Specialists Inc.

The above services found his name listed in "Who's who in Australia".

Lance and Mary were married at All Hallows church, Blackwood, S.A. on 12th April 1958. Mary's father was delighted that because of the marriage his name was also listed in "Who's who". The paths of Lance and Mary crossed before they eventually met. As toddlers they were neighbours. Mary can recall her mother saying there was a new family moving in and she peeped through the fence to be met eyeball to eyeball with a little, fair-haired boy. When the family moved to Blackwood, Mary's mother, Mrs. Beesley, also the mother of life member Tom Beesley, was two pound short of the moving fee so she gave them dad's pushbike. Dad was far from speechless when told his bike had been re-located. Many years later it was discovered that the man who took the bike in part payment was indeed Lance Hosking's brother-in-law and it was his wife who cared for the Hosking corgis during their many trips around Australia and overseas.

The official introduction was during their employment in the S.A. railways. It was an office romance which was lasting with mutual love, respect and pride in their achievements. Lance's special pleasures were many and varied. He and Mary were the proud owners of "Better Class" who won five races for them; Saturday phone calls from Arthur Walz selecting the days winners; time spent at his walker flat shack having a 'bundy' by the camp fire with his great mate Don Wilkey; his special friendship with John Scotcher, a past

president of the transport association; AADS conventions and post convention holidays in Singapore, the Gold Coast and following the 1994 convention, a week in Norfolk Island with Bert and Jan Sievers; his involvement with so many AADS personalities, including brother-in-law Tom Beesley and the members of the executive for ten years; progress made in the furtherance of the association; and the Adelaide Crows.

Happiness was also prime time spent with his corgis, Emma, Toby and Maria. They were a source of comfort during the last few weeks even though at times sitting so close to dad they were caught up in the recliner footrest.

Lance was not keen on flying and said he would only fly if he could keep one foot on the ground! Eventually he came to enjoy plane travel and visited the U.K. twice where he met Mary's relatives.

Lance established a wonderful relationship with an uncle and cousins in London and Co. Waterford, Ireland. It was the uncle who admired a pair of Lance's shoes. Like Cinderella, he was asked to try one. It fitted and that night Lance went back to the B & B in his socks.

During the last seven years, Lance occupied office space in the Lumley General Insurance building. He counted the Lumley staff amongst his greatest friends. On his recent birthday he was given a wonderful party by this tremendous group of people. He was close to all the staff, but particularly to Brenton and Sandy Costello and their family, with whom a special friendship existed. A holiday at "Penthouses" on the Gold Coast was always recalled with peals of laughter, especially recalling Sandy's mother, Molly who ate all the cake!

His involvement with AADS was a crowning glory to his years of work. The mutual affection of so many was reflected in the huge volume of love and support that was extended to Lance during the last few weeks of his illness and to Mary following his sudden passing. It was typical of him that others should not be overly concerned. On enquiry he would just say, "not good, but not too bad".

1994 has been a difficult and sad year as Lance was the fourth member of the family to pass away. He was particularly affected by the death on 29th March of his sister, who was foster mum to the corgis. Lance and Mary have always worked as a team, not only in their personal lives, but during their involvement with tennis, transport and the AADS.

Mary's loss can only be understood by those who have lost someone as special as Lance Hosking. He enjoyed what he did and the people he was involved with. There was always a smile, a helping hand, a sympathetic ear and an eagerness for the success of all in which he participated. He touched many lives.

A testimony to him was the cross section of family, friends and his business associates who attended his funeral service. With the help of God, family and friends, the pain of his loss will ease and the wonderful memories of Lance will be Mary's comfort in the years to come.

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CONVENTION UPDATE MELBOURNE 1995

THEME: EQUIPPING FOR QUALITY

The 1995 convention will be held in Melbourne at The World Congress Centre with accommodation at the Centra Hotel, being part of the Centre complex. The Crown Casino is also part of the complex and should prove to be a popular spot with many of our members. Many of Melbourne's bright spots are within easy distance of the Centre, e.g. South Bank, Arts Centre and National Gallery, Shrine of Remembrance, Botanical Gardens and the best shops in Australia for the ladies in the central shopping area.



A special event has been planned for the golfers on Friday the 17th. Bosch have kindly sponsored this event. Nick Panau of Bosch and Kevin Cripps our illustrious vice president will be your hosts for the day. The event will be for handicap golfers only and of course the ladies are also invited to attend.

The day will start at 9.00am on the first tee at the Waverley Golf Course. Meals will be available

and transport provided between the hotel and the course. Registration forms will be available in your convention registration package.

The Friday evening opening dinner sponsored by Nippon denso will be different in as much as the dinner will be held in the centre of the exhibition area. Along with a delicious array of food and drinks, entertainment will be provided by well known ventriloquist, Ron Blaskett and his inimitable 'doll' Gerry Gee. A show not to be missed. As well as this at the end of the function our much appreciated exhibitors will be providing for a time a welcome and entertainment get together on their stands. So please support them and show your thanks for their efforts.

As well as having world class keynote speaker Mike Rayne from Lucas USA to address the convention on Saturday, there will be a fantastic choice of seminars for you to attend. At this point in time they are:-

R.M. Diesel - George Hass - Caterpillar Sleeve Metering

Petro-ject - John Bateman - Fluke Multi Meter Reading (Practical and theory)

Nippon Denso - Robert Kogoi - On Convention theme

Atkins Carlyle - Mike Rayne - CAV Systems

Bosch - Jack Holstein - Bosch Service

Repco - Auto Tech - Electronic Engine Management Systems

Turbo Dynamics - Discussion and Video on Switzer Turbochargers

Diesel Injection - Jack Phillips - Phillips Hot Air Engine

D.S.A. - Mr Alan Gissing, Technical Fuel Services Manager BP Australia Ltd. - "All You Want to Know About Diesel Fuel"

Stanadyne - Peter Malo - Stanadyne Pumps

This will be the most seminars ever on offer to members at a convention and with the variety and quality of the subjects covered are not to be missed. To attend the seminars, a registration card which will be part of the convention registration package will need to be filled in indicating your choice of the seminars you would like to attend. When these are collated you will be issued with seminar admission tickets that will be with other convention material in the Repco convention satchels at registration on Friday 17th March. Seminar registration will be on a first come, first served basis and should be an incentive to register early for the convention. It will not be possible to attend every seminar so remember to number in order of preference the ones you would most like to attend.

The early bird registration prize will be sponsored this time by Simms Diesel and Turbocharger Service of Penrose N.Z. So get your registration in ASAP to have a chance of winning this generous prize.

The ladies Saturday function will be sponsored by Turbocharger Sales, Osborne Park W.A. and as usual we can guarantee the ladies a great day out.

The Saturday evening dinner dance is once again being sponsored by Bosch and this is your chance to dress up in the glad rags, enjoy Bosch hospitality and AADS fellowship. Entertainment for the evening to be provided by the "Moondance" band with all your old time and recent favourites.

Sunday morning for those left standing is tentavily set for the AGM, technical and general forum and final exhibition viewing. Sunday farewell lunch will be sponsored by R.M. Diesel and Bruce Tucker has planned to make this a better than usual function with pleasant background music to create a relaxed and informal mood for delegates, wives and friends to say their goodbyes until we meet again in Fremantle, WA in 1996.

Please make every effort to come to Melbourne, it will be worth your while and can be your way of thanking Lance Hosking for all the wonderful conventions he organised for us over the past years.

Mick Rankin
CHAIRMAN VICTORIAN/TASMANIAN
BRANCH AADS INC.

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NOTICE TO AADS MEMBERS

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Have been appointed a State distributor for Garrett turbochargers. This appointment was made in May 1993. This notice is to correct the turbochargers sales advertisement on the rear page of the magazine. The advertisement will be corrected at the next reprint of the DIESEL TORQUE cover.

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A LETTER FROM A.D.S.

August 11, 1994

Mr. Tom Beesley
12 Tora Crt,
Parkholme, SA 5043
Australia

Dear Tom,

We received the June 1994 edition of Diesel Torque today, and having just finished reading it felt compelled to write to you regarding one of your articles titled "Joseph Lucas, Prince of Darkness."

I must tell you that as a long time Lucas employee (26 years) this is the best description I have seen yet of an electrical system. The Lucas electrical system in the United States is just as bad, in fact when one mentions the name Lucas on the street everyone who has ever owned a British automobile can tell you stories of how bad it was, other than Jags there are no more British cars here.

Keep up the good work with Diesel Torque, it is always a pleasure to read, if I can assist in any way, please let me know.

Sincerely
David A Fehling
Director of Technical Education and Services
ADS America

HEALTH and SAFETY

ASPECTS OF EQUIPMENT CLEANING

According to Castrol Technical Services many traditional products used in industry have come under close scrutiny for their Occupational Health and Safety implications. Cleaning products are a good example in work practice where traditional products are being replaced with safer products.

Cleaning with Solvents

Petroleum solvents are commonly used for cleaning, either in the pure form or may be blended with other ingredients or solvents. However there are three risks associated with their use: Fire, Explosion and Health. The risk of fire and explosion is greatest in those solvents with low flashpoints.

The higher the flashpoint the more suitable the petroleum product for cleaning. However, specifically formulated cleaning products are desirable as they are purpose designed for the

task. For example, a commercial degreaser is preferable to a flammable product such as petrol or lighter fluid for reasons of safety and storage.

Proper Ventilation

All cleaning using petroleum or petroleum based cleaners is best done outdoors unless a properly ventilated area is available.

It is important to note that ordinary electric fans or ventilators is not satisfactory because of the risk of ignition of the solvent vapour from the electric motor. Potential heat sources must be considered such as hot engine manifolds.

Toxicity

All petroleum products are to some extent toxic. They have the ability to defat and dry the skin and some are known carcinogens. Solvents can be absorbed through the skin, thus entering the bloodstream. The most toxic are those containing aromatics, particularly benzene (a known carcinogen). Petroleum products may contain aromatics up to 100%.

Diesel distillate contains high boiling point aromatics that are known carcinogens and must not be used for cleaning. A commercial degreaser, particularly a water based one, is recommended.

A Wise Tip. Always wear rubber gloves when using solvents. You don't have to swallow something to have ill effects - it can be absorbed through your skin. It's called dermal poisoning and in most cases we don't know we have it until it's too late.

Tom Beesley
Sept. 1994

IS THIS THE FACE OF 'A STAR' OR SERVICE MEMBER 82?



Turn to page 16 for the answer.

BUSINESS NEWS NEW TECHNOLOGY

Early this year Mercedes Benz presented versions of its 300 and 400 Series diesels modified to comply with emission Standard Euro 2 due and effective in 1996.

The 300 Series diesels will be fitted with Bosch MW mechanical injection fuel pumps with new camshafts for fast injection at pressures up to 1100 bar, a new timing device, and multi-hole injection nozzles and a general move to turbocharging/intercooling.

The adoption of wastegate turbochargers is intended to reduce emissions and significantly increase engine torque.

In the 400 Series, the V6 and V8 turbo/intercooled (low emissions vehicle) engines are now equipped with electronically-controlled fuel injection using Bosch's EDC system. Both fuel rate and timing are electronically controlled.

Future engine output settings will be realised not by adjustments to the injection pump, but by configuration of injection nozzles and

software changes at the EDC electronic control unit. Other changes on the 400 Series are the use of six-hole nozzles as opposed to five-hole nozzle units. The overall V8 engine performance improvements arise from electronically-mapped fuel injection.

SPECIAL AWARD

German manufacturer Hanomag will be producing a range of hydrostatic wheel loaders using Perkins engines. The engines used will be naturally-aspirated or turbocharged. All of the machines have received Germany's "*blue angel*" certification for low noise emission levels.

MARKET DECLINE

The overall European diesel truck market shrank by 23% in 1993 as compared to 1992 sales. The French market recorded a 21% drop, German 28%, Italy 30%, and Spanish down 50%. The British market increased by 15%.

Tom Beelsey
Sept. 1994

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SCANIA CLOSES RECYCLING LOOP

A story in a recent issue of the Adelaide Advertiser gives an example of an organisation being 'Environmentally Responsible'. With concern for the environment as a high priority, Scania is moving closer to the day when, of the 8000 parts that go into making a Scania truck, almost everyone will be recyclable in one form or another. At present almost 87% is already recoverable. The recyclable parts consist of forgings, iron castings, sheet steel, aluminium, lead and copper.



Referring to the photo the recyclable materials are;

- Steels (such as forgings, crankshafts, springs) 2400 kg.
- Cast Iron (such as engine block and brake drums) 1300 kg.
- Sheet Steel (such as cab shell, chassis frame members) 1200 kg.
- Rubber (such as tyres) 600kg.
- Aluminium (such as flywheel housing) 130 kg.
- Plastics (such as wings and interior fittings) 30 kg.
- Lead (such as batteries) 50 kg.
- Copper (such as electric cables) 30 kg.
- Paint 30 kg, and
- Zinc 4 kg.

The environmental aspect is very important to Scania designers and they will do their utmost to use materials that can be reused or recycled.

However, if materials have to be used that are not recoverable, Claes-Goran Anderson, head of the materials laboratory at Scania Trucks and Buses, Sweden, says "we must be certain that disposal methods are available and that these will cause a minimum or no harm to our environment".

Tom Beesley
Sept. 1994.

TEST YOUR KNOWLEDGE

What do the following ISO Standards relate to?

- A. ISO 4008-1
- B. ISO 4008-2
- C. ISO 4010
- D. ISO 4093-1-2
- E. ISO 4113
- F. ISO 7400

To assist your understanding of the application of the above Standards, read Lucas Rotary or P-Type pump explanation notes (ISO Test Conditions).

Note: Test injectors and high pressure pipes do not have to comply to one of the ISO Standards, provided that the test plan defines them in detail.

It should also be noted that the Standard differentiates between a 'test injector' and a 'calibrating injector'. Test injectors are considered all injectors specified on a test plan to be used for the testing of the pump. Calibrating injectors are test injectors that also meet the ISO Standards for calibrating injectors (ISO 4010 and ISO 7440).

Answers on page 19.

Did you know 'Men will sit through the most pointless and boring movie if there's even the slightest chance the girl is going to take her top off'.

Just a thought 'An intellectual is someone who can listen to the William Tell Overture without thinking about the Lone Ranger'.

A Lead Sled 'A high fuel consumption vehicle'.

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FUEL INJECTION PUMP TESTING

It took over fifteen years for a special committee of the International Standards Organisation (ISO) to agree on a comprehensive Standard for diesel fuel injection pump test stands. The result of their work is known as the ISO 4008 Standard. There are three parts to the ISO 4008 Standard. **ISO 4008/1, dynamic conditions:** which prescribes and specifies the design and performance features for a diesel fuel injection pump test stand to drive a fuel pump. **(ISO 4008/2), static conditions:** the ability of the test bench to meet calibration fluid supply and fuel pump delivery measurement. **(ISO 4008/3), application and test procedures:** a Standard designed for use in the workshop. ISO 4008/3 complements and co-ordinates the technical requirements of 4008/1 and 4008/2.

ISO 4008/1. Dynamic conditions

The Standard ISO 4008/1 does not assign a test stand for a group of fuel pumps, rather it requests the operator/owner to be the judge in complying with it.

Non compliance with the dynamic characteristics detailed in ISO 4008/1 can produce large errors in injection pump' delivery.

The test stand manufacturer, according to the Standard, must publish:

- (a) Horsepower available at the drive shaft (coupling) in relationship to speed.
- (b) Speed drop characteristics.
- (c) Moment of Inertia (flywheel effect).
- (d) Stiffness of drive coupling, pump brackets and drive shaft.

The fuel pump manufacturer in turn, according to the Standard, must provide data on:

- Maximum power (in kW) required to drive the pump at full load and rated speed.
- Peak (or mean) injection pressure at the lowest speed at which calibration is to be performed.

Let us have a brief look at the data above.

Horsepower

Power available at the drive shaft in (HP or kW) must be obtained by actual tests which

load the drive with a power absorbing device (a dynamometer). Horsepower must be then plotted on a graph in relationship to speed. It is important to understand that a 10 HP test stand will not provide 10 HP at all speeds. It is equally important to know those different types of drives (mechanical, hydrostatic, AC, DC, etc.) will have different power curves. That is to say not all 10 HP stands will provide the same horsepower at the same speed.

Therefore, only by knowing the power curve of a test stand **and** the required horsepower to drive the fuel pump, can you determine the **suitability** of the test stand.

Speed Droop

Speed droop of a drive system defines the ability of the system to maintain its speed and stability when its load is changed from maximum to zero.

The importance of speed droop is significant primarily during the testing in the fuel pump's governing range. That is to say, you should be able to drive the pump through its governing range and not 'lose' control of the test stand speed.

Moment of Inertia (Flywheel Effect)

This part of the Standard deals with uniform rotation of the fuel pump drive shaft. Tests have indicated that for accurate fuel pump calibration the cyclic speed variation must not exceed 1%. Cyclic speed variation is a momentary speed variation within one revolution. A conventional tachometer cannot measure this variation.

The moment of inertia (or flywheel effect) is fixed and constant in a test stand.

Stiffness of drive coupling, pump mounting brackets and drive shaft (if applicable)

Stiffness refers to the resistance to turn (or 'twist') either the drive coupling or drive shaft when they are exposed to torque.

When high torque is applied to a flexible coupling, it will also twist or deflect angularly by a very small amount depending on its design.

- The drive shaft should not deflect more than 0.02 degree, and
- The coupling should not deflect more than 0.1 degree.

Adequate stiffness of each of the above

components is essential when driving a fuel injection pump to prevent torsional vibration. Torsional vibration is a continuous angular oscillatory motion and is likely to occur (among other reasons) from the pulsating drive resistance of the fuel pump. When this vibration becomes severe enough, it will distort the fuel pump delivery curve.

The stiffness (rigidity) of a pump mounting flange and bracket/s must be established by measurements using a special pump simulator and test procedure.

With all the above parameters determined, the test stand manufacturer is obligated to produce a graph that represents the permissible operating envelope for the test stand.

There are two remaining specifications for the test stand under dynamic conditions;

Speed Stability (Speed variation at constant load)

This requirement assures steady and driftless test stand speed under any steady load within the operating envelope and with a stabilised electrical power supply.

Misalignment

This part of the Standard specifies that the fuel injection pump bedplate together with any adaptor provided, shall be designed so that misalignment at the coupling between the axis of the test stand drive shaft and the fuel pump drive shaft not exceed:

- radially 0.13mm and
- angularly 0.25mm over a length of 300mm.

Conclusion

Dynamic conditions are only part of the total Standard. Today's major FIE manufacturers are increasingly aware of the Standard and demand compliance when testing their fuel injection pumps. Only after thoroughly understanding the Standard will you be able to evaluate your injector pump test stand and its suitability to test a particular fuel pump under the criteria established by ISO.

Tom Beesley
Sept. 1994

ANSWER TO PHOTO QUESTION

A "Star".



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FIE WORKSHOP REQUIREMENTS

FUEL INJECTION PUMP TEST MACHINE

In the June issue of Diesel Torque I mentioned, under the heading of 'other technical matters', that it is important to check the capability of your test bench with FIE manufacturers requirements.

The just released 1994 edition of Lucas distributor standards for FIE workshops advises, "that Lucas fuel injection pumps should be tested on Lucas Hartridge test machines to ensure the accuracy and correlation of the service calibration with factory setting conditions".

Lucas Hartridge recommends the following test machines, AVM series (10 or 20 HP), PGM series (10 or 20 HP), 3000 series, 2500 series (10 HP) either VDM or PGM, 700 series (7.5 HP), as being acceptable for testing Lucas Diesel in-line and rotary fuel injection pumps. The 400 Series machine is only suitable for testing rotary pumps and therefore is only acceptable as a second test machine.

The Wheel Up Unit that enables EPIC and

Rotary pumps of the future to be tested on one of the above test benches (excluding the Hartridge 400 Series) will be required by January 1996.

Certain test machines will require a system of temperature control to meet the requirement that the temperature of the test fluid be maintained at $40 \pm 2^\circ\text{C}$ at the supply bulkhead of the machine.

Lucas says that, in order to test the complete range of fuel pumps, a test machine with a 15hp (11kW) drive motor would be their recommendation.

For the testing of some FIE, e.g. pumps fitted with CS governors, a lubricating oil supply system will be required.

Tom Beesley, Sept. 1994

ANSWERS TO TEST YOUR KNOWLEDGE

- A. Dynamic conditions test machines
- B. Static conditions test machines
- C. Delay type pintle nozzle
- D. Standards for HP test pipes
- E. Standard for calibrating fluids
- F. Test injector orifice plate



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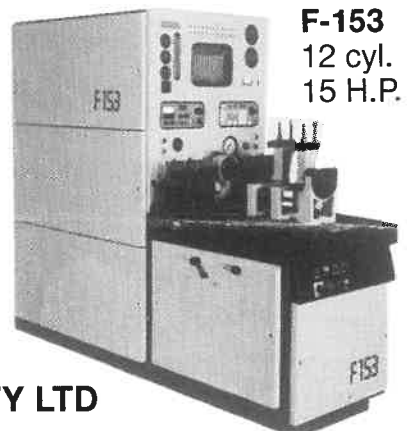
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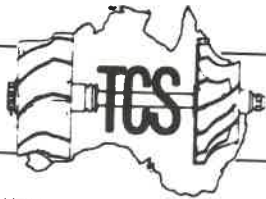
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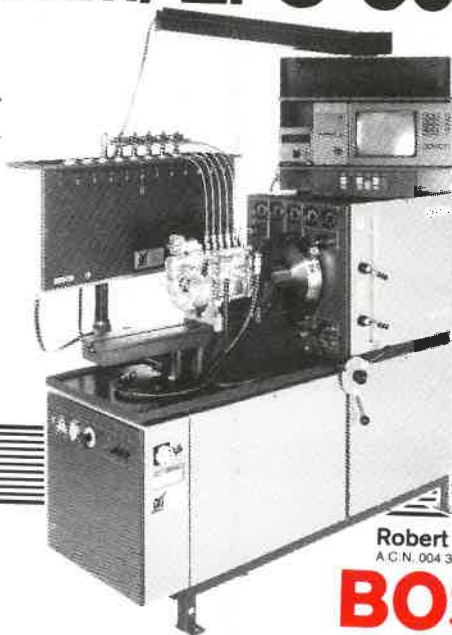
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