LVVTA News

ISSUE # 53 JAN-JUNE 2017

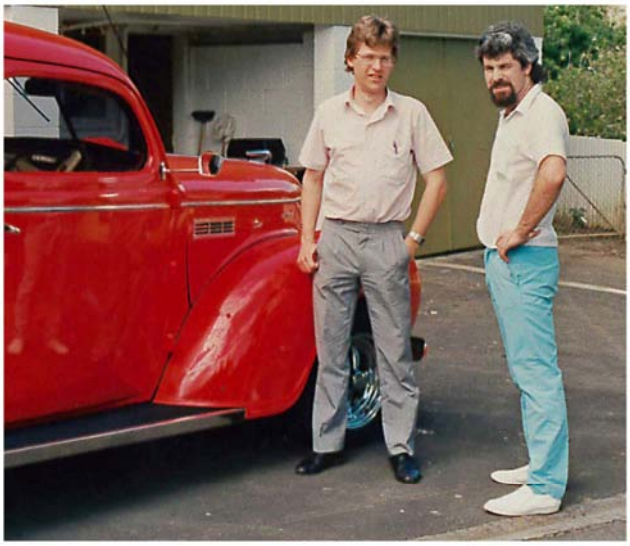
THE NEWSLETTER OF THE LOW VOLUME VEHICLE TECHNICAL ASSOCIATION (INC)

TWENTY-FIFTH ANNIVERSARY FOR LVVTA

The year 2017 marks the 25th anniversary for the Low Volume Vehicle Technical Association. LVVTA was formed in 1992 by a small group of like-minded motor vehicle enthusiast groups, comprised of the New Zealand Hot Rod Association, MotorSport New Zealand, Sports Car Club of New Zealand, Constructors' Car Club, Vehicle Association of New Zealand for People with Disabilities, New Zealand Motor Caravan Association, and New Zealand Four Wheel Drive Association. The Vintage Car Club of New Zealand and Kiwi Trikers Social Club joined a few years later.

A sad irony is that, in this anniversary year, we lost one of the pivotal people in the establishment of New Zealand's LVV certification system, and as a consequence of that, LVVTA. Dick Reynolds' huge contribution to LVVTA is recorded on pages 3 to 6.

Pictured at right is a 29 year old Tony Johnson, working through the 'education and negotiation process' that took place during 1989 to 1990, with Senior Engineer Ken Gibbs of the Ministry of Transport.



LVV CERTIFICATION # ONE HUNDRED AND FIFTY THOUSAND!

In it's 25th year of operation, LVVTA achieved another great milestone during late June in 2017, with the production of its 150,000th certification plate. The milestone plate, produced by LVVTA's Frances Bradey, was issued for a 2003 Ford Falcon owned by Auckland's Scott Burmeister. As the owner of Gray & Galpin Panelbeaters, Scott performed the work on the vehicle himself.

The build began with a damaged 2003 Ford Falcon station wagon, from which the rear end was removed and replaced with that from a same-generation Ford Falcon ute. Rather than create a two-seat ute, Scott extended the wheelbase to add a second set of doors and second row of seats, creating a double-cab ute that the Ford Motor Company never offered.

The modifications were done in such a way that the vehicle looks factory in all aspects, including the addition of built-in chassis connectors to reinforce the vehicle's structure. Due to the monocoque design, plenty of reinforcement was required to ensure the vehicle's strength remained intact, however, Clint Field, the Low Volume Vehicle Certifier who inspected the vehicle, couldn't have been happier with the structural integrity and overall standard of workmanship on the vehicle.

The conversion provides a full-depth rear seat, which typical factory 'crew cab utes' tend not to do, resulting in a properly reclined and comfortable seating position for Scott's rear-seat occupants.

As well as the body and chassis modifications, the Falcon was also certified for 20 x 8.5-inch and 20 x 9.5-inch wheels, a custom drop fuel tank and rear bucket seats. Scott's vehicle is powered by a factory-optioned 5.4-litre quad cam 'Boss' V8 engine backed by a five-speed manual transmission.

Clint Field has been an LVV Certifier since July 2006, and is now also a valued member of the LVVTA's Technical Advisory Committee.

Scott Burmeister,at right, is the proud owner of this unique four-door Falcon utility, with LVV Certifier Clint Field standing at left.

LVVTA PEOPLE

The New Guy

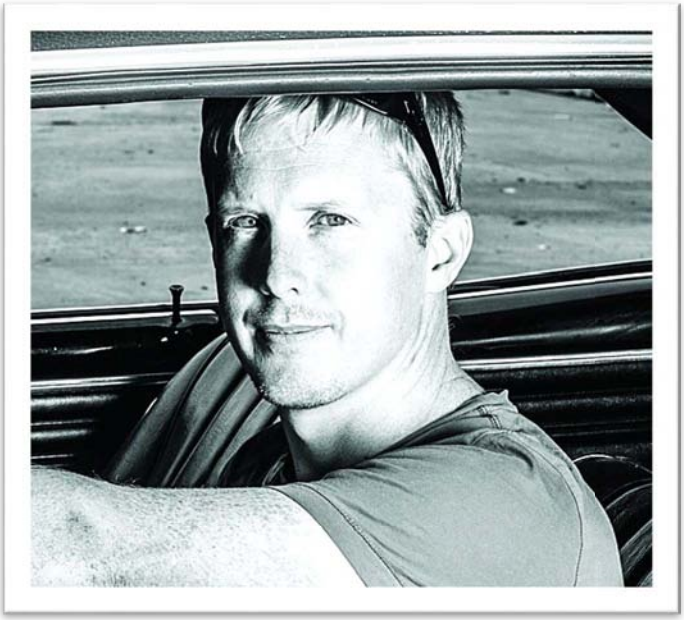
Earlier this year, Leon Cast (Technical Support Officer) moved on into the world of self-employment – although you'll still find him on the end of the phone here now and then, as he remains with us one day a week to help Frances with plating, and to help Justin and Dan with technical support.

We'd like to introduce you to Todd Wylie, the newest face at the LVVTA office. While Todd has replaced Leon in terms of maintaining staff numbers here, his role (as Technical Officer – Publications) will be quite different than Leon's role was. While Todd will initially be providing a technical support role to Dan and Justin as he does his 'LVV apprenticeship', he'll also – with his editorial and publishing background - be able to do a lot of good things in areas such as communications, publicity, positive brand exposure, and assisting with document development and technical writing.

Here's a quick introductory note to you directly from Todd:

"Starting with LVVTA isn't just a new job for me, but a return back home, having grown up and previously worked nearby, before spending the last 13 years living and working in Auckland. Over those years, I've known the LVVTA team and many of the LVV Certifiers through my roles with Parkside Media where I was first employed as assistant Editor for New Zealand Performance Car magazine before swapping camps to become the Editor of NZV8 magazine. From there I stepped into the Managing Editor position where I oversaw the two publications above as well as New Zealand Classic Car magazine while continuing to edit NZV8 as well. Joining LVVTA sees me step back from the Managing Editor role, but continue as editor of NZV8 part time.

Understandably my own love of cars is equally as varied as the publications of which I've previously worked with, and over the years I've built many cars that have gone through the LVV Certification process. Many moons ago I owned a 10-second capable daily driven Mitsubishi, while for the last few years I've cruised at a slower pace in a 1956 Cadillac Coupe DeVille.



The current plan, once I get settled, is to start the build of my 1961 Dodge Seneca station wagon. Of course, being surrounded by high-end builds all the time, the plans of what I'd love to do to the car are far bigger than the time and budget that reality will sadly allow.

I look forward to meeting those in the LVV scene I've not yet met, as well as catching up with many old faces as well."

We've known Todd personally for many years and he's a great guy, with a huge passion for the modified car scene, and obviously a lot of very high-level skills that will be of great benefit to us here at the LVVTA office.

His email address is simply todd@lvvta.org.nz so please feel free to drop him a line and make him feel welcome.

Ken Stepping Up

Ken McAdam started into a part-time role (two days per week) with LVVTA two and a half years ago, primarily to work in the area of improving the training to LVV Certifiers. Ken's focus was targeted toward helping LVV Certifiers on a one-on-one basis, helping out where needed around the country giving LVV Certifiers better support than they can achieve within normal regional group training, or via LVVTA's normal telephone and email support.

Ken's experience and portfolio of skills soon showed that there was a lot more that he could do for LVVTA than just that, and before he knew it, he was also providing technical support for LVV Certifiers to ease the load on Justin and Dan, supporting Nikki in the area of office management, and he'd become an additional sounding board amongst the Technical Team in the office and for CEO Tony Johnson. So, LVVTA's needs more-or-less forced Ken into stepping up from his two days a week to four days a week in early 2017, and this is enabling Ken to take over the area of looking after new applicants going through the assessment process, providing those that pass with their 'basic training', supporting them through their mentoring process, and working with NZTA to ensure the appointments are made.

While Ken has increased his hours for LVVTA, he remains an active LVV Certifier, and while he's obviously doing a lot less LVV certification work than he was previously because of his increased LVVTA commitments, both he and LVVTA firmly believe that it's critical for Ken to continue being an LVV Certifier himself in order to do the best possible job of his training role within LVVTA. This provides the LVV Certifiers with a true 'equal' in terms of background, knowledge, and awareness of the real-life day-to-day problems that LVV Certifiers experience.

To the delight of the rest of the LVVTA staff, Ken has also 'stepped up' in his automotive tastes recently too, with a C5 Corvette!

RICHARD LESLEY (DICK) REYNOLDS: 1942-2017

LVVTA CEO Tony Johnson shares the story of his relationship with Richard Lesley (Dick) Reynolds, and in doing so provides a glimpse into history with a rare insight into how the LVV certification system as we know it originally got the green light.

The 1989 rumours

There's a man who you should know, if you enjoy the hobby car scene. Because, he's the reason you're able to do it. Sadly, unless you're one of a small group of hot rodders who dealt with him three decades ago, you'll never have that chance, because he died on the 13th of February this year, aged 75. So, I'm going to introduce you to him now, as best I can. His name was Richard Leslie Reynolds, referred to by everyone at the time as 'Dick'.

In 1989, I'd just hung up my spray-gun and shifted from Wanganui to Auckland and taken up the role as Assistant Editor for NZ Hot Rod Magazine (NZHRM), and it looked as if this was to be my career. However, with hardly time to get my feet under the desk, rumours began circulating about some new legislation called 'vehicle standards' coming out of Government, which was soon going to be applied to every vehicle entering the New Zealand fleet. Wearing my investigative journalism hat, I was quickly knocking on doors in Wellington to find out if there was a story of any substance behind the rumours, and if so, how this new legislation might affect people like us who have a love for hot rods and modified cars.

By March 1989, my journey had led me through the corridors of the Ministry of Transport's Wellington-based head office, where I was ushered into the office of a man, who, even seated, was a stern and imposing character. The title on his door stated 'Senior Controller of Vehicle Standards', and his name was Richard (Dick) Reynolds. It took about five seconds to establish that Dick was going to be a tough guy to get along with. Old school. Utterly non-PC. At that very first meeting with him I said something – can't remember what it was now – that he didn't agree with, and his response was – very simply "…*sod off noddy*…".

And then, on top of the realisation that he was going to be hard work to get along with, the news he gave me in response to what I was there for couldn't have been worse. Yes, 'Vehicle Standards' were coming. And yes – particularly as a result of a recent (and therefore very badly-timed) fatal accident involving a hot rod with a defective steering system on a wet night on Auckland's Southern motorway - hot rods and modified vehicles were being targeted within the new legislation. All to be in place in less than two years. The Ministry was adopting the Australian Design Rules (ADRs) for modified and individually-constructed vehicles, and registered transport engineers (the chaps who certify draw-beams and load anchorages and the like on heavy trucks and trailers) would be doing the inspections. We quickly learnt that the ADR's would have limited what could be done hot rod-wise almost to the point of extinction, the engineers (many of whom were charging $1000 to certify a simple draw-beam on a trailer at the time – and remember that was thirty years ago) would kill the few remaining modifications that weren't disallowed by the ADRs, and the engineers knew very little about cars in general let alone the complexity and uniqueness of hot rods. Our hobby was sunk, and D-day was 1 January 1991. This was the scene, then, against which I began to form a relationship with Dick Reynolds. The enemy. The judge, jury, and executioner of our beloved hobby.

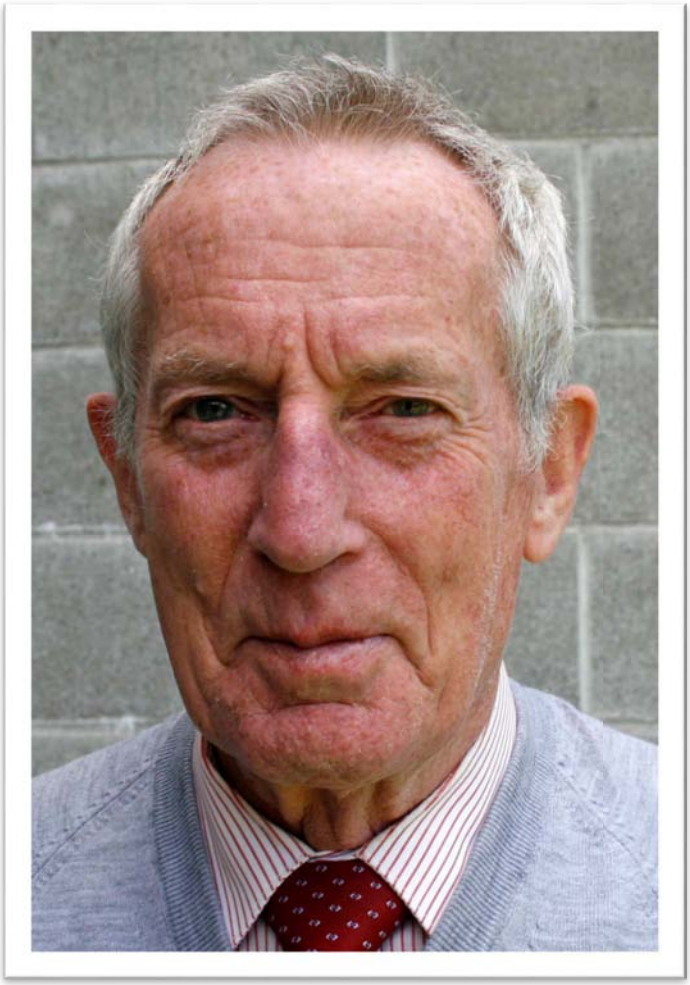
Dick (right), out of his working environment with the Ministry of Transport and then the Land Transport Safety Authority. Even at age 70, he still looked as tough as old boots. Dick appeared to be a fearsome man on the surface, but in fact he was extremely fair beneath it.

Education and negotiation

As tough and seemingly unbending as he appeared to be, Dick was prepared to talk to me, and he listened – he listened enough to allow himself at least to be drawn into what I call an education process about who we are, what we do, and why we do it. And most importantly, how well we do it. It soon became apparent that, behind the blunt façade, there existed a very high level of honesty and decency. Once his character was understood, you knew exactly where you stood with him, and he was a relatively easy guy to get along with – as long as he received the same honesty in return.

The first challenge then, was to convince Dick and his Ministry colleagues that hot rods and hot rodders weren't the dirty words that the media painted them to be back in those days. Thirty years ago, hot rods and hot rodders were labelled in much the same way as 'boy racers' have been in more recent times, and there was a hell of a stigma to shake off the very thing I was trying to sell to him.

Our many meetings and telephone conversations during those months led to an important day on June 12 1989, where I presented a selection of cars and people to Dick, along with his senior Ministry Engineers Norm Hall and Hugh Matheson, at the Evans Bay Testing station. There was Lester Davis with his big-block '66 Chevelle, Darryl Gates with his '32 Ford sedan, Mark Wilkin with his '56 Chevy, Ray Foster with his '56 Customline, Rex Evan with his '38 Chevy Coupe, and Graham Higgins' T-bucket. *(Continued on Page 4…)*



RICHARD LESLEY (DICK) REYNOLDS: 1942-2017 (cont'd)

Getting the Green Light

(...Continued from Page 3) They were all well-built cars that had plenty of modifications to look at, and the owners were sensible professional guys that could be relied upon to represent the modified car scene well. The cars were all rolled across a pit for the Ministry men to inspect in detail, and the only 'fault' that Dick and his colleagues could find on all of the hot rod engineering that they looked at that day was a weld which they considered to be 'of poor quality' on one of the axles on the Jaguar independent rear suspension in Rex's Coupe - but that turned out to be a stock Jaguar half-shaft so the 'fail' was happily assigned to the Jaguar factory in good old England rather than to Rex.

The relationship extended to catching up for dinner after hours at both his place and mine, and I had become Dick's 'courier' for his favourite tipple; - prior to each trip to Wellington, I would drive from where I lived at the time in Papatoetoe in South Auckland out to Henderson in West Auckland to buy the required flagon of Mothers' Cellar port, and then transport it down to Wellington with me when coming to meetings. During the early years I was driving from Auckland down to Wellington weekly (I don't fly unless I have to), so this arrangement was of considerable benefit to Dick! Government agencies were a very different environment back then compared to today.

June 12 1989; - one of the landmark events in the lead-up to negotiating the self-governance LVV certification system.

TJ asked a group of Wellington hot rod club members to bring their vehicles along to the Evans Bay Testing Station meeting. The guys showed their vehicles to the Ministry of Transport men, and talked at length about the engineering and fabrication aspects of their home-modified cars.

From left to right: Ray Foster & his 1956 Ford Customline; Lester Davis & his 1966 Chevelle; Darryl Gates and his 1932 Ford Tudor; Dick Reynolds (MoT); Rex Evans and his 1938 Chevrolet Coupe; Graham Higgins' replica 1923 Model-T Ford; Norm Hall & Hugh Matheson (both MoT); Mark Wilkin & his 1956 Chevrolet

Looking back at the August 1989 issue of NZHRM within which this Evans Bay Testing Station meeting was covered in detail, it was clearly a worrisome time. In the article, NZHRM stated that "*this situation is without doubt the biggest crisis by ten country miles that hot rodding has ever faced. It cannot be taken lightly or apathetically*".

Working towards a green light

The success of the Evans Bay meeting was a landmark event for us, as, with Dick's view on hot rods now massively swung for the better, the door was opened a little further to progress serious discussions with him about the 'self-governance' system that we were proposing. From here we were able to move on and tick the second big box. We offered to Dick what we saw as a far better option to the ADRs and heavy engineers, which was to let us identify a network of experienced car builders and modifiers from within the New Zealand Hot Rod Association ranks, write our own 'Code of Practice', and set up our own system. This 'self-governance' concept was discussed for close to a year before Dick eventually gave us a tentative green light to 'have a go and see what you come up with'. It was a hell of a risk. Dick was effectively saying 'if I'm happy with what you produce you can do it, and if I'm not, we're back to the Aussie Design Rules'. We were under no illusions; - Dick was as blunt as he was tough, and he had a job to do – if we didn't deliver, there would be no time for second chances and we'd be out on our backsides.

During this process, a great relationship had developed between Dick and I, based entirely around those simple principles of honesty and trust. There was no bullshit or mind-games going on. Dick was brutally honest and open, I tried to be likewise, and after some time, we trusted each other implicitly.

When Dick and I would meet in his office at the Ministry during the late 80s and early 90s, we'd be talking amidst an almost constant fog of cigarette smoke (one of Dick's vices), and by mid-afternoon the cylindrical courier package would be opened and Dick would be partaking in his other vice.

I involved Dick all the way through the system development process over a period of nearly a year and a half, and when the first draft of the original Code of Construction Manual was presented to him for his review in early-1991, he seemed to be quietly impressed. The last big tick came in mid-1991. We had a tentative green light from Dick, we had the Code of Construction manual in a decent draft form, but Dick wanted to see first-hand what a certification inspection might look like and feel like. That was easy to sort out, because we'd been doing a lot of dummy-run inspections to trial the requirements in the Construction Manual, and to get our systems and processes figured out before we started training guys around the country in late 1991 who would become the inspectors in preparation for an early 1992 kick-off. I took him to an LVV certification that was taking place during one of Dick's visits to Auckland. I forget what the car was now, although it was a typical 30's era hot rod sedan, but the guys doing the inspection were two of our Technical Advisory Committee members; Dave McDougal and Mike Nind (Mike sadly passed away last year). I had Dick stand under the car with us and watch the inspection process over the three or four hours it took, and most importantly listen to the discussions that Dave and Mike were having about various aspects of the car's design. There were a lot of complex issues with the car that Mike and Dave identified and debated at length – and as a result of the complexity of those issues and the massive competence of those two guys as they worked through the right and wrongs and how the wrongs could be righted, those few hours under the car became the big lightbulb moment for Dick. *(Continued on Page 5...)*

RICHARD LESLEY (DICK) REYNOLDS: 1942-2017 (cont'd)

Getting the Green Light

A done deal *(...Continued from Page 4)*

After we left the inspection, Dick conceded that he was nothing short of astonished at the level of real-life engineering experience and knowledge that those guys had. Twenty-six years on, I can still remember the emphasis in his voice - he was truly gob-smacked. In fact, to begin with, Dick wondered if it was a well-rehearsed set-up put on just for his benefit, but he realised as the debates between Dave and Mike unfolded and the sound decisions that were arrived upon, that this wasn't the case. With his formal transport engineering background and role within the Ministry of Transport, he'd never in his life seen that kind of practical hands-on intuitive brilliance that we're all so familiar with in the hobby car building world. That really sealed the deal for Dick; - he wasn't just satisfied that we could do it, but he was actually excited that he'd discovered what was – in his mind – clearly a brilliant solution to the complex problem of figuring out how to deal with these modified vehicles.

In hindsight - although he never admitted it to me back then or since - perhaps he had reservations that his proposal of using the ADRs and the engineers might not in fact give him the best outcome, hence having his ears open to other ideas.

The system kicked off in April 1992, and although Dick handed us over not long afterwards to new Senior Engineer Andrew Justice, he was never far away from us for the rest of his time in the Ministry, and then within the Land Transport Safety Authority when that was set up independently from the Ministry.

The final curtain was set to fall for modifying vehicles in New Zealand by early 1992, but the day was saved as a result of Dick's foresight, trust, and willingness to look outside the square.

It was an unlikely alliance; - a long-haired 28 year-old hot rodder, and a middle-aged formally-trained English Engineer holding a senior Government position with model railway and fencing for hobbies – but it paved the way for the development and implementation of a self-governance system that was a world-first back then, over 25 years ago, which still remains unique in the world today.

There's no doubt that Dick was the right man for the time. He was able and willing to make a decision, and a decision as big as this – to take a leap of faith in a group of enthusiastic amateurs – would never happen in today's regulatory environment.

By the mid-1990s, Dick's old-school style of regulating was as frowned upon as his habits of drinking and smoking in his Ministry of Transport office, and he was never going to fit the new politically -correct Government model that was evolving then. Dick took his retirement, bowed out gracefully from a working world in which he could no longer fit, and bought himself a few acres of bush up the Akatarawa Valley Road near Upper Hutt which he referred to as his 'little slice of Godsown'.

I've visited Dick up there a few times over the years since, and he was deservedly proud of seeing the low volume vehicle certification system in New Zealand succeed and grow over the years since its birth under his careful watch and guidance.

Dick remained an advocate of the system he helped establish, and as late as 2010 he sent a letter to Television New Zealand in response to a poorly-researched piece that aired about a teenager in a modified car, in which he stated "*This [LVV] systems works extremely well and is, as far as I am aware, ahead of anything the Australians can teach us*". *(Continued on Page 6...)*

A rare glimpse into the more personable and humorous side of the outwardly serious and gruff Dick Reynolds can be seen in this personalised cartoon which Dick gave Tony Johnson during 1990, cut from a newspaper and over-pasted with text that Dick typed. Tony worked as Assistant Editor for NZ Hot Rod Magazine at the time.

Hugh's View

Hugh Matheson was one of the MOT Senior Engineers who was involved in that landmark meeting at the Evans Bay Testing Station. In 2009, Hugh (by then Land Transport Safety Authority Principle Engineer) said about that day in 1989: "*An interesting afternoon was had by all. These guys were passionate about their vehicles, and aimed for perfection as well as safety. NZHRA went on to take a lead role representing their industry, working with the regulators to develop the Low Volume Vehicle Code as an alternative standard under VSR90. The LVVTA can be proud of its achievements over the last 20 years. They're a great group of enthusiastic guys that I have enjoyed working with".*

RICHARD LESLEY (DICK) REYNOLDS: 1942-2017 (cont'd)

Getting the Green Light

A contribution never forgotten *(...Continued from Page 5)*

Dick's contribution to the LVV certification system was never forgotten by LVVTA, and in 2011 Richard Leslie Reynolds was inducted into the LVVTA Wall of Honour. The inscription that accompanies his photo says:

"On November 23, 2011, Richard Leslie Reynolds (Dick), born in 1942, was inducted into the LVVTA Wall of Honour.

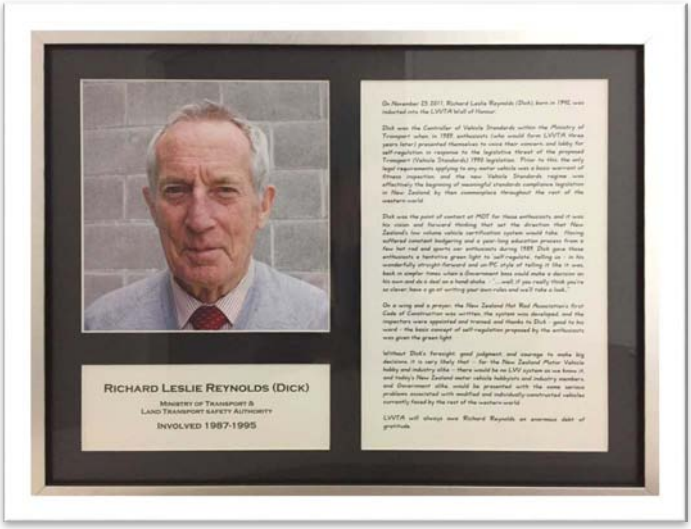
Dick was the Controller of Vehicle Standards within the Ministry of Transport when, in 1989, enthusiasts (who would form LVVTA three years later) presented themselves to voice their concern, and lobby for self-regulation in response to the legislative threat of the proposed Transport (Vehicle Standards) 1990 legislation. Prior to this, the only legal requirements applying to any motor vehicle was a basic warrant of fitness inspection, and the new Vehicle Standards regime was effectively the beginning of meaningful standards compliance legislation in New Zealand, by then commonplace throughout the rest of the western world.

Dick was the point of contact at MOT for those enthusiasts, and it was his vision and forward thinking that set the direction that New Zealand's low volume vehicle certification system would take. Having suffered constant badgering and a year-long education process from a few hot rod and sports car enthusiasts during 1989, Dick gave those enthusiasts a tentative green light to 'self-regulate', telling us - in his wonderfully straight-forward and un-PC style of telling it like it was, back in simpler times when a Government boss could make a decision on his own and do a deal on a hand-shake - "...well, if you really think you're so clever, have a go at writing your own rules and we'll take a look..."

On a wing and a prayer, the New Zealand Hot Rod Association's first Code of Construction was written, the system was developed, and the inspectors were appointed and trained, and thanks to Dick - good to his word - the basic concept of self-regulation proposed by the enthusiasts was given the green light.

Without Dick's foresight, good judgment, and courage to make big decisions, it is very likely that – for the New Zealand Motor Vehicle hobby and industry alike – there would be no LVV system as we know it, and today's New Zealand motor vehicle hobbyists and industry members, and Government alike, would be presented with the same serious problems associated with modified and individually-constructed vehicles currently faced by the rest of the western world.

LVVTA will always owe Richard Reynolds an enormous debt of gratitude."



On the night that Dick received his award at LVVTA's Porirua building opening, he'd had a few wines, and his acceptance speech about the early days of the LVV certification system quickly sidetracked into a series of hilarious unrelated and irrelevant stories, which included ribbing those of us involved with him 25 years previous, and giving people who didn't drink or who played golf a good rubbishing. An interesting insight to come out of it however, was when he told everyone present – the first time Dick had ever admitted it - that when he gave us the opportunity to write our own rules and develop the system, he'd fully expected us to fail. He said that while he applauded our enthusiasm, he didn't seriously believe that we could develop a system and a construction manual that would 'make the grade'.

The final thank you

Amongst a small group of people huddled around Dick's gravesite on a cold and drizzly morning earlier this year, I thanked him one last time for all that he had done for countless thousands of car enthusiasts, and I told Dick's friends and family how much he had achieved, for so many of us.

As a result of taking our commitments and responsibilities seriously, and setting and keeping the safety-bar high, the deal that the car hobby reached with Richard Leslie Reynolds all those years ago has endured, and in fact prospered, for over a quarter of a century – and by continuing to take our responsibilities seriously and collectively do the best job we all can into the future, there's no reason why we can't look forward to enjoying the privilege of building and modifying and driving our enthusiast vehicles on New Zealand roads for another quarter century or more.

PROCEDURAL STUFF

Returning Redundant LVV Certification Plates to LVVTA

LVVTA asks LVV Certifiers, when returning old LVV Plates to the office, please include a brief note as to why they are being returned (returned to standard, plate replaced, plate error, etc). If the certification plate was fitted to a vehicle that has been returned to standard, we need to inform NZTA of this as they need to update their records, and it prevents LVVTA from unknowingly issuing a replacement plate when it shouldn't be issued. Sometimes Frances will receive a large stack of plates with no idea why they have been sent to her, which makes keeping accurate records rather hard!

PROCEDURAL STUFF (cont'd)

Correct Dates & Categories on Fo01 Certificates

A quick reminder from Frances to LVV Certifiers about the date used on the F001 Statement of Compliance Certificates. The date is supposed to be the date that the LVV Certifier signed the vehicle off as being 100% compliant, not the date of the start of the certification process. We've been seeing quite a few F001's coming through lately with incorrect dates, some going back as far as 2013! This date ends up on the LVV certification plate so accuracy is important.

Also, LVV Certifiers should double check the LVV Certifier categories recorded on the F001. The category used on the F001 gets entered into both LVVTA's and NZTA's systems, so if it's wrong on the F001, it's wrong in both of those databases too. The category recorded on the F001 should be the highest category applicable to that certification - not all of the relevant categories or the highest category that a certifier holds. Section 3 of the LVV Operating Requirements Schedule contains all of the category information.

Keep it Current

LVV Certifiers: - don't forget that when your friendly NZTA reviewer shows up for your next LVV Review, one of the things he'll ask you to produce is your driver's licence. What you don't want to happen in this situation, is to find out that your licence has in fact expired! Not only will this be justification for some good old fashioned mocking from your peers and Wellington office staff, you'll end up with a less than perfect review score as well, which means he'll be knocking on your door that little bit sooner than you'd wanted!

Fo05 Plate Delegation Form Revised

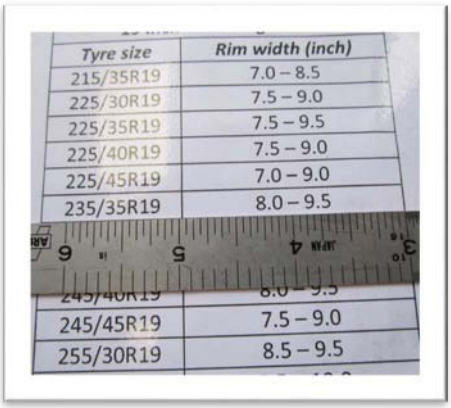
During a previous LVV Certifier training session, it was brought to our attention that the revised *F005 – LVV Plate Attachment Delegation Form* was still missing some important information. As a result of those discussions LVVTA has added sections for the vehicle owners name and contact number, a note regarding the 2-month fitment requirements, and an additional note regarding the fitment of a LVV Plate to a motorcycle.

LVVTA has also amended the wording regarding the use of rivets from '...four rivets and...' to '...both rivets and...' as we realise affixing a plate with all four rivets is not always possible or practical.

Please note that this one form now covers both MN and L class vehicles and again, we ask that you complete as many fields as possible. The revised form has been re-issued in July 2017.

Recording Tyre-to-rim Suitability

Here's a clever idea spotted by Leon that might save LVV Certifiers a few minutes and a bit of paper. Some LVV Certifiers have varied from the usual printing out of the wheel/tyre fitment pages to include with form-sets on vehicles where there is visible tyre stretch on the wheelrim.



Here, LVV Certifier Mike Owen of Howick has simply taken a photo of the relevant page of the tyre-to-wheel fitment guide, with a ruler on the relevant line to show the fitment presented. Good thinking Mike! This is a totally acceptable process.

5% Tolerance on Suspension Height Recording

A common trend amongst some owners of certified vehicles is to lower the vehicle's suspension to the lower limit of the 5% tolerance which is allowed for on the certification plate. This 5% tolerance is intended to allow for a small amount of spring sag over time, and minor fuel and cargo variations. On some vehicles (especially vans and utes) this 5% allowance can measure as much as 15 mm from the wheel centre to wheel arch, which can cause the vehicle to be unsafe to operate.

LVV Certifiers should, after determining the minimum safe suspension height for the vehicle, either ADD 5% to that number (which will then be recorded on the cert plate), or they should have the vehicle raised by 5% to ensure that the vehicle remains safe at all times when operating within the 5% tolerance.

TAC Meeting Invite to LVV Certifiers

Most LVV Certifiers will have been involved with the LVVTA Technical Advisory Committee (TAC), through helping their customers to submit applications for various components, such as a custom independent front suspension or an offset-crank brake pedal. It might seem as if the TAC is some 'secret hand-shake club', but that couldn't be further from the truth. The TAC members operate openly and transparently, and the monthly meetings are held in Auckland and chaired by LVVTA Technical Officer Justin Hansen.

Justin and the TAC members would like to offer an invitation to LVV Certifiers to attend a TAC meeting; - this could be great for a Certifier who has questions, or is interested in the process, or would just like to meet the TAC members and see what happens at a meeting. If you'd like to attend a TAC meeting, all that we ask is that you let Justin know in advance, and that if there is something you'd like to discuss, that you notify Justin of the details at least 5 working days in advance, so that a time-slot can be allocated during the meeting. For details relating to dates, times and locations, please email justin@lvvta.org.nz.

PROCEDURAL STUFF (cont'd)

Push Harder With Your Pens Guys!

Frances asks those LVV Certifiers who purchase and use the triplicate F001 forms that LVVTA supplies to please make sure that all three copies are easily legible. Frances often finds that the top copy looks great but by the third copy the writing is hardly visible. LVVTA keeps this third copy for the life of the vehicle so it's important that it can be read if that paperwork should ever need to be revisited.

LVV Certification Plate Processing Time

LVV certification plate numbers have been increasing over the past year. The monthly average for July 2015 - June 2016 was 543 plates per month, whereas the monthly average for July 2016 - June 2017 was 625 plates. That's a big increase, with no one particular trend causing the increase that we can put our finger on. So, the same-day plate processing that LVV Certifiers have become used to might not happen as often as it has in the past while these numbers remain high. If an LVV Certifier needs anything processed urgently, please don't assume it will be processed same-day; - call or email Frances and she will do her best to get it out for you quickly.

FS039 – Bump-Steer Swing-Check Inspection

LVVTA has recently been compiling bump-steer swing-check data that has been received from LVV Certifiers, and during this process we have come to realise that not all the data we need is being captured on the current form-set FS039. As a result, we have made some additions to the current form-set. Changes include 'Sub-model' added to the model field, and new fields for the year of the vehicle and whether it is 2WD or 4WD. We have also added 'OE' tick boxes in both the suspension and steering sections to help clarify if the vehicle is modified or not.

There is now also a section asking for caster measurements; - past bump-steer swing-checks (where caster settings have been changed in between two bump-steer swing-checks) have proven that toe-change results can be significantly impacted by caster settings, and providing these readings will help LVVTA tech staff interpret results.

Lastly, we have also added an LVV Plate # section; - this is for LVVTA office use only and is to enable LVVTA staff to track the bump-steer swing-check back to an LVV plate if more information is needed.

TECHNICAL STUFF

Sway-bar Link-rod Joints

LVVTA technical staff recently received a query from an LVV Certifier who was inspecting a car with low-grade spherical joints (also commonly referred to as rose joints) fitted to the front and rear sway-bar links. On checking with the Car Construction Manual (CCM), he found that no allowance existed to use anything but a compliant rod-end (high-grade, load-rated, and with a teflon or kevlar liner) in the suspension system of a low volume vehicle. LVVTA staff identified that this - because of the non-critical nature of a sway bar's functionality - was likely to be a situation which hadn't been considered in the CCM, and set about checking with the Technical Advisory Committee (TAC) to make sure nothing had been overlooked, before adding this to the amendment file for a future update. The TAC agreed that in normal circumstances a low-grade joint will suffice, and any wear should be picked up during a WoF inspection. There are a few exceptions however, examples of which are a vehicle with a drag-race style rear-end set-up which uses a high-rate sway-bar; where a sway bar is an unusually large-diameter; or in any other situation where the sway bar becoming disconnected may significantly affect the handling of the vehicle.

Effective immediately, an LVV Certifier can approve the use of low-grade or un-rated spherical joints in a common sway-bar link situation, as long as the joints are deemed fit for purpose, and in good condition.

Foot-brakes on Trikes

At a LVVTA-NZTA Technical Working Group meeting, a V8 chopper built in the USA, which used an automatic transmission and had both front and rear brakes handle-bar mounted, was discussed. The LVV requirement is that on a motorcycle or trike with motorbike controls, the rear brake is controlled by a foot operated brake.

The meeting concluded that as the vehicle was automatic, and therefore no clutch lever on the left handlebar, the requirement to have one axle braked by foot wasn't necessary.

'Anson'-brand Dropped I-beam Axles

'Dropping' I-beam axles is a tricky subject, which, in general terms, requires some due diligence to ensure that someone who is dropping an axle has got the necessary knowledge and experience to be doing it. During August 2016 the Technical Advisory Committee reviewed and approved a dropped 'Anson'-brand axle, from Greg Haynes, of Anson Axles in the USA. This means that an axle that has been dropped by Greg Haynes and purchased from Anson Axles USA can be approved for use, provided all other criteria from 6.8.2 of the NZ Car Construction Manual (CCM) can be met.

6.8.2(e) specifies "*...the process is carried out only by a specialist within the field specifically nominated by the Technical Advisory Committee of the Low Volume Vehicle Technical Association (Inc)...*"

When inspecting a vehicle fitted with an 'Anson'-brand axle, the following criteria must be applied in each case;

- the axle is to be made available to TAC members for inspection;
- proof of purchase must be provided;
- an appropriate NDT (crack test) is to be carried out.

Note that 'an appropriate NDT' means one carried out in New Zealand by a company nominated by the TAC – in this case X-ray Laboratories Ltd was specified. Note also that an axle which does not have proof of purchase or which has no proof of who has carried out the drop, cannot be approved.

An 'Anson'-brand axle has the word 'ANSON' (not visible in this photo) stamped into the axle in the spring-perch boss area.

AFTERMARKET ALERT

'Supreme'-brand Wheel Reminder

Back in 2011 LVVTA released an Information Sheet advising that some 'Supreme' brand aftermarket wheels cannot be LVV Certified, and warned that LVVTA's firm opinion was that these wheels are prone to failure and should not be used.

This warning was prompted by a significant number of failures that we had become aware of, where the centre of the wheel was cracking and separating from the outer rim. This failure was due to the poor design of the inner to outer wheel attachment.

LVVTA has recently been made aware of another failure where the wheel has collapsed completely (see photographs below). We don't know where these pictures were taken, nor do we have any specific details, but we can see that this is the same design of wheel that we've seen failures with here in New Zealand.

LVVTA would like to take this opportunity to remind LVV Certifiers and vehicle owners that these wheels are potentially dangerous, and it is LVVTA's opinion that they should not be used.

If you have wheels similar to these fitted to your vehicle, they should be checked as soon as possible by a WoF inspector or LVV Certifier in conjunction with the LVVTA Information Sheet 01-2011, to determine whether they are one of the affected wheels. If they are, they should be removed from the vehicle immediately.

You can find the Information sheet on the Documents page of our website, or click here to download.

If anybody has concerns with their wheels and they'd like to discuss those concerns, they can contact the LVVTA team on (04) 238 4343.

Aftermarket Modified OEM Steering Boxes

LVVTA has became aware that Borgeson are selling modified left-hand drive Isuzu SUV steering boxes as a bolt-in power-steering conversion to suit early Ford Mustangs. Borgeson also supply similarly-modified boxes for '55-'57 Chevy, '58-'64 Chevy, '63-'82 Corvette, and possibly others. The company modifies the steering box by cutting away the cast bolt-flange which is incorporated into the steering box, and replacing it with a new, mild steel flange with the desired bolt-pattern. The replacement mounting plate is attached by welding onto the cast steering box housing (see photograph at right). The Technical Advisory Committee have reviewed and rejected the modification. This decision is based on the welding of the critical mounting plate to the cast steering box housing, which, due to the box being power-assisted, creates very high loads at the mounting flange - akin to a hydraulic ram, and also due to the positioning of the plate significantly lower down the steering box leg, with removal of additional material between the mounting plate and the upper steering box. Accordingly, these steering boxes cannot be LVV certified.

LVVTA recently became aware of a steering box which was modified in the same way failing at the weld, causing critical steering failure. Due to the source of the information, LVVTA is confident that it was a failure of the welded steering box flange.

Pleasingly, LVVTA has seen an increase in aftermarket steering component manufacturers having their own steering box housings manufactured using a casting process (the same as OEM manufacturers), thus completely eliminating the need for any welding.
For more information relating to the welding of castings and forgings, see the 'Useful Information' section in the 'Attachment Systems' chapter of the NZ Car Construction Manual.

Aftermarket Tri-5 Chevy Power Steering Rack Kit

South Island-based 1D LVV Certifier Roy McDonald showed LVVTA a big name-brand aftermarket bolt-in steering rack conversion kit, which had two serious problems.

The first problem was the positioning of the rack; - the fabricated cradle-style mount was significantly lower (at least two inches) than the vehicle's main front crossmember (which had already suffered some fairly significant damage over the years). This puts the steering rack in a vulnerable position and in the firing line of any object that the underside of the vehicle happens to come into contact with - something solid enough to cause the damage to the main crossmember would almost certainly tear the steering rack and probably it's cradle from the chassis, which could, in a worst case scenario, result in a total loss of steering control. The cradle was also mounted unevenly onto the chassis, which means the rack height is different on each side, causing unequal bump-steer results from side to side.

The second problem was the huge amount of bump-steer that was present when the kit was installed. The bump-steer readings were over 100 mm through the travel range, and 40 mm through the normal working range at the first check. Once the rack-mounting beam had been raised (also providing improved ground clearance) and with various other tweaks being made, the total bump-steer across the complete range of travel was brought down to just 5 mm – a significant improvement on the first check, and actually quite an impressive outcome for what is a nearly 60-year-old suspension design.

The moral of this story is that nothing should be taken for granted, even if a reputable manufacturer makes the parts or assemblies you're looking at. And even if the component or assembly itself is OK, there can always be other factors, such as an incorrect installation, or the affect of other components on the modification, that could potentially catch you out. You'd wonder how this could happen - especially from a 'big-name' manufacturer. In this case, the 'bolt-in kit' is simply bolted up to the mounts on the chassis originally designed for the steering box and pitman arm.

In this case the repositioning of the rack-mounting cradle onto custom-mounts fixed the problem, and along with a heavy-duty skid-plate to protect the bottom of the rack, gave an ideal outcome.

Unfortunately as a certifier, it's often necessary to second-guess your customer or the modifier – if you don't, and you take these things for granted, there's a good chance of making a bad decision.

Interestingly, the LVV certifier who brought this one to our attention has never seen a bolt-in steering rack conversion that's given good bump-steer results straight off – and he's seen quite a few! In most cases however there can be a relatively easy fix developed, and the customer will almost always be happy with the outcome, because the handling and 'feel' of the car will be significantly improved. That's a really good thing for your reputation as an LVV Certifier – its adding real value to the certification process, and it makes a major contribution to road safety.

This picture (above) shows the rack and pinion mounted to it's cradle, and then bolted up to the mounts on the chassis originally designed for the steering box and pitman arm.

In this picture (above), the steering rack centreline is well below the bottom arm inner pivot centreline, with the tie rod heading up to the steering arm – a dead ringer giveaway that there will be bump-steer issues! Also note the distance between the bottom of the front crossmember and the bottom of the rack cradle – this makes the vehicle's steering system completely unprotected and extremely vulnerable to anything bigger than a cat's-eye!

Aftermarket Travel-bar Style Rack & Pinion Systems

There are several new steering rack and pinion conversions available in the marketplace, some of which have come under scrutiny in recent times.

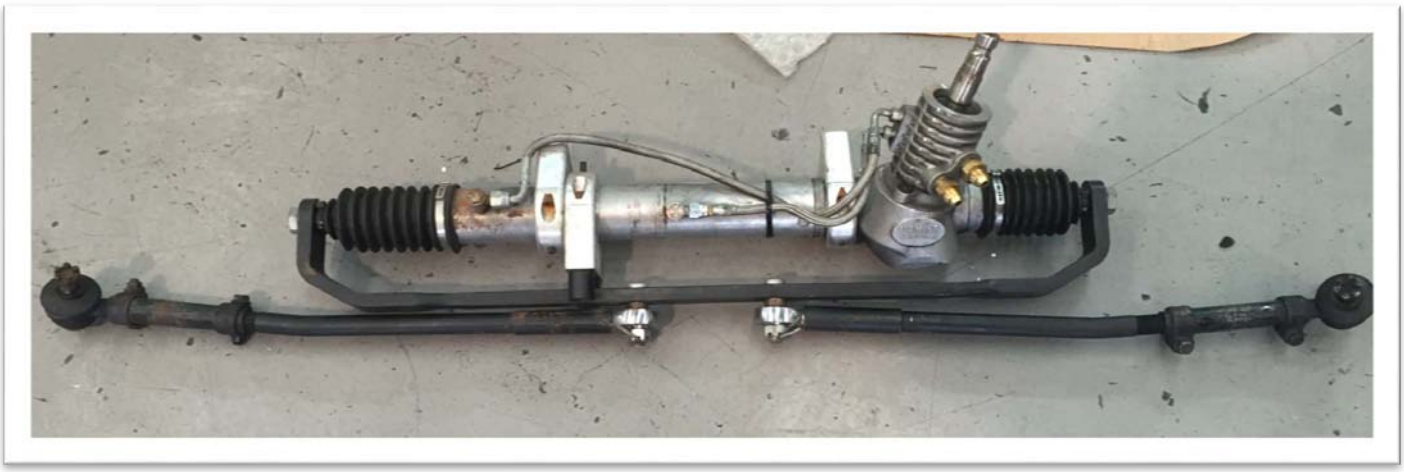
LVVTA's Technical Advisory Committee (TAC) has reviewed one such aftermarket steering rack design which uses a 'wrap-around' travel-bar design to create a centre-steer type rack and pinion. This design relies on cotton-reel style guides to control the travel-bar and prevent rotation and overloading of the main rack shaft and internal components, which aren't designed to take such loads.

Some of the issues identified by TAC members were:

- the travel-bar contains multiple welds which have been ground off; and
- the travel-bar reduces significantly in material thickness through the centre section, where the guides make contact; and
- the inner tie-rod attachment studs (which appear to be wheel studs) are fitted from the back of the travel-bar, via two holes bored near the centre of the bar. These holes further reduce the cross-sectional area and strength of the travel-bar; and
- the roller guides don't rotate. As they are circular, this means only a very small area of the guide will contact the travel-bar, which will result in wear to the guides, much like flat-spotting of tyres. Once wear is present, the travel-bar will increasingly become unsupported, which will allow the rotational loads to be applied through the unsupported rack and pinion gears; and
- the travel-bar is not machined along the top and bottom faces where the guides run, so is not a smooth surface suitable for a guide, and is likely to increase the rate at which the guides wear; and
- the guides are attached to brackets which clamp around the rack housing. These brackets are located against the rack housing by a single grub-screw to prevent rotation, along with any clamping force provided from the tightening of the bracket. TAC members don't consider this to be a suitable anti-rotational device, considering the consequences of this support becoming loose, being forced, or being incorrectly assembled or adjusted; and
- the grub-screws used to attach the brackets could, if over-tightened, cause the rack internals to jam or become damaged; and
- the design of the travel-bar is such that when the rack assembly (a hydraulically-assisted ram) applies full load, in a wheel-jam situation (i.e. with a wheel wedged against a kerb), the travel-bar may be inclined to 'bow, or bend'; and
- it is difficult and unreasonable for WoF inspectors to assess for wear in such an unusual and complex component; and
- it is likely to trap dirt, grit, and stones on the travel-bar and under the guides, and could build up or cause a trapping issue with stones or road debris, which could lead to loss of steering in a worst-case scenario (think skateboard wheel hitting a stone); and
- the design hasn't ever been used by an OEM manufacturer, so it's long-term durability is largely unproven.

The design of this system introduces many potential safety risks, which the TAC found to be unacceptable on road-going vehicles in New Zealand. The manufacturer argued that the rack is mounted higher in the vehicle than usual, so was less likely to collect road debris, however TAC disagrees, and thinks that with 38% of NZ's local roads still unsealed, and with roadworks and broken seal common throughout the country, any steering failure that could be caused by a small stone is an unacceptable risk.

LVVTA Technical Officer Justin Hansen arranged for one of NZ's fore-most independent steering specialists Phil Game from PG Hydraulics to provide an expert opinion.



Phil also concluded that this design introduced many risks, and agreed that the TAC had correctly identified the potential issues. He also validated the TAC's concerns about the potential for the travel bar to bend, and estimated the load able to be applied by the rack is in the region of 1,200kg.

Based on this outcome, LVVTA's TAC concluded that LVV Certifiers are unable to approve steering modifications which incorporate a steering rack of this design. For details of steering components which can be used, or for more information relating to rack and pinion steering options, a modifier should contact an LVVTA Technical Team member at the Wellington Office on 04 238 4343 before making a purchase.

Aftermarket Centre-steer Rack & Pinion Systems

Centre-steer steering rack concerns:

The LVVTA's Technical Advisory Committee and independent steering specialists have concerns regarding the use of centre-steer power rack and pinion steering assembles, where the inner tie-rod ends are repositioned away from the original mounting bolts.

This repositioning creates a cantilever increasing loads on both the mounting bolts and the rack itself. LVVTA is currently undertaking an engineering analysis of these rack and pinion assemblies, and expects to have the results of this analysis, along with guidelines for modifiers and LVV Certifiers, later this year.

Until such time as the analysis is complete LVV Certifiers are being advised NOT to approve any such installations.

If a vehicle builder or modifier is contemplating using a centre-steer rack and pinion assembly in their project, we suggest that to avoid disappointment, they use one of the manufacturers listed below, or alternatively contact an LVVTA Technical Team member at the Wellington office for advice.

Alternatives:

There are some alternative rack and pinions that can be LVV certified. At this stage, they are:

- 'RRS' brand centre-steer rack utilises a support bar arrangement, made up of a stainless-steel travel-bar supported at both ends with a linear bearing. This support bar provides additional support to the rack shaft and to the attachment bolts. This system is made and approved in Australia, and RRS have done significant research and development to make certain that this system is durable. RRS have kits available for many Australian and US Fords in both LHD and RHD configurations. http://www.rrs-online.com.au/

- 'Retro Racks' also supply a custom-manufactured centre-steer rack and pinion assembly. This allows multiple fitment options due to its modular design, making it easy to position in a large range of vehicles. This rack has undergone full load and cyclic testing, and is also available in both left-hand drive and right-hand drive configurations. http://www.retrorack.com.au/

LVVTA will publicise the findings of the engineering analysis as soon as it is completed.

Above: Typical adaptor bracket design that offsets the tie-rods away from the rack shaft and the attachment bolts. The arrows indicate welds.

Above: Typical aftermarket kit with a 'handlebar'-style rack bar. Photograph source: Google

Above: OEM inner tie-rod end attachment to rack assembly. Photograph source: Google

Aftermarket I-beam Axles

In case you were wondering if LVVTA's mandated nodularity testing of aftermarket I-beam axles is still identifying any victims, here's another load of 'fails' (failing to fall within internationally-accepted nodularity values) as a result of LVVTA's metallurgical inspections. The aftermarket axle manufacturer has supplied their customers with good replacement axles, and these failed axles are being cut in half and shipped overseas as scrap metal.

AFTERMARKET ALERT (cont'd)

Watch for Butt-welded Steering Rack Shafts in Aftermarket Steering Racks

LVVTA has been notified about a type of steering rack which incorporates a butt-weld joining two sections of the main rack shaft. The first instance of this rack was one which was supplied to a vehicle modifier by a New Zealand-based aftermarket parts supplier in 2011.

The rack was sold by the parts supplier as a Mustang 2 right-hand drive manual-steer steering rack. There was no mention of modification work on the supplier's invoice to the customer.

The steering rack is of very similar appearance to a US-made RHD steering rack that has been found within an aftermarket Australian-built independent front suspension assembly intended for fitment into Holden Toranas and possibly other vehicles .

Obviously a butt-welded steering rack shaft can't be certified under the LVV Code, and the problem is made extra-difficult because the modification is not visible during an LVV Certification inspection if the rack isn't dismantled.

LVV Certifiers will need to be satisfied that steering racks haven't been modified — in particular shortened, or where a left-hand drive rack has been converted to a right-hand drive rack. If there is reason to believe that a rack has been shortened, or converted, and the LVV Certifier can't be assured that the modification work has been done correctly by a known person, he should ask for the rack to be dismantled in order to be sure that a similar modification to that seen here hasn't occurred.

LVV Certifiers will need to pay particular attention to this style of rack — look out in particular for the unusual three through-bolt mounting system.

OPERATIONAL STUFF

New Type-approval Certification System in Place for Commercial Modifiers

The New Zealand Transport Agency (NZTA) and LVVTA have been working together during 2016 and the first part of this year to implement an alternative LVV certification process that will enable those commercial modifiers who are able to meet certain criteria specified by NZTA to effectively 'self-certify' vehicles that they modify on a production basis. This is known as 'Type-approval'.

NZTA have established a specific LVV Certifier category to enable this to occur, which is called LVV Certifier category 'LVCM - Commercial Modification'. An LVCM-appointed LVV Certifier is a commercial modifying inspecting organisation (CMIO) appointed under the provisions of Land Transport Rule: Vehicle Standards Compliance 2002 to carry out certification of Type-approved low volume vehicles (as specified by Part 2 of the LVV Code). LVCM LVV Certifiers will have been assessed by NZTA as having sufficient controls and processes in place to ensure ongoing conformity of production.

A 'Type-approved' low volume vehicle is a low volume vehicle to which a specific set of identical modifications have been, or will be, made to a series of vehicles of the same make, model and specification, by a commercial modifier who is appointed by NZTA.

The details of the specific set of modifications have to be initially confirmed - as the result of a normal LVV certification inspection process - as meeting the LVV Code and relevant LVV Standards by an independent LVV Certifier with the appropriate categories. Subsequent identical vehicles which are modified in an identical way to that vehicle certified by the independent LVV Certifier can then be subsequently 'self-certified' by the LVCM-appointed LVV Certifier.

A number of amendments and additions have recently been made to the LVV Code and the LVV Operating Requirements Schedule to facilitate the Type-approval operations, which are now in place.

NZTA's Audit of LVVTA

In February 2017, NZTA conducted an Audit of LVVTA (not to be confused with NZTA's Review of the LVV system) which focussed on systems and processes, and risk mitigation. The audit was undertaken by NZTA's internal Risk Assurance Auditors and it went very well, particularly given that this was the first time NZTA had undertaken an audit on LVVTA.

The auditors had no concerns of substance, and asked for the following actions to occur:

- establish timeframes with NZTA within which to refer poor-performing LVV Certifiers (to ensure meaningful action is taken in a timely manner); and
- develop a register for tracking the regular reviewing of LVV standards; and
- introduce formalised reporting process for specified LVVTA functions to NZTA; and
- define roles of Technical Working Group and Policy Working Group in more detail; and
- increase level of detail within process of recording complaints and issues; and
- ensure regular auditing (form-set reviewing) of all LVV Certifiers, in addition to targeted reviewing of high-risk LVV Certifiers; and
- develop method of recording blank LVV certification plates on hand.

Within the Audit Report, in addition to the changes that the Auditors wanted to see, the Auditors also incorporated some positive statements about LVVTA within the report. These included:

- *"…The Low Volume Vehicle Technical Association (LVVTA) has an embedded focus on vehicle safety. Strong emphasis is put on training and mentoring of certifiers to ensure they have the skills to certify low volume vehicles (LVV). Processes for certification and plate issue are well defined…"*
- *"…The LVVTA has a strong focus on vehicle safety. Applications are reviewed to ensure they include the required evidence of compliance prior to the issuing of plates. All staff have a technical or engineering background. Emphasis is put on mentoring and training LVV certifiers. This ensures certifiers have the relevant skills to correctly certify low volume vehicles…"*
- *"…Processes for certification and plate production are documented and well understood. Separate checklists are required for the various modifications certified. Requirements and the formset templates are documented in the LVVTA manuals. Manuals are given to all LVV certifiers…"*

A meeting has taken place to set timelines for the required system changes, and these have been scheduled. The changes will all be completed by the end of 2017. The Audit was considered to be a very useful process by LVVTA, and further Audits are welcomed.

NZTA's Review of the LVV Certification System

The NZTA Review of the LVV certification system, which commenced in late 2015 and ran throughout 2016, drew to completion early in 2017.

During that time, NZTA consulted with the vehicle modification industry and the enthusiast sector, and looked at ways in which the LVV certification system could be made more convenient for the motoring public without introducing unacceptable levels of safety risk. NZTA worked with LVVTA throughout this time to develop and introduce the changes, which have now all been completed.

The biggest change in the LVV system was the development of the 'Type-approval' system for commercial modifiers, which effectively enables commercial modifiers who meet a specified criteria and become appointed by NZTA to 'self-certify' their 'production line'-based modifications after the originating vehicle has been independently LVV certified. More information about this can be found within *LVVTA Information Sheet # 01-2017 'Introduction of Type-approval System, & Re-issue of LVV Code & LVV ORS, & New Forms'*, which can be found under 'Documents' on www.lvvta.org.nz

The next biggest area of change was the recognition of certain approved overseas standards, and to enable vehicles which have been modified overseas and which can demonstrate compliance with specified recognised standards, to not be required to have to undergo LVV certification upon arrival into New Zealand.

Other smaller changes included:

- establishing a schedule by which all LVV Standards will be periodically reviewed; and
- enabling category LV1A LVV Certifiers to carry out some of the medium risk certification work previously only done by LV1D LVV Certifiers; and
- establishing 'terms of reference' for the operation of the LVVTA Technical Advisory Committee (TAC); and
- introducing a commercial sub-committee of the LVVTA TAC, and associated process to deal with Design Approval applications from commercial modifiers more quickly; and
- establishing a process by which technical decisions by LVVTA or the TAC can be reviewed; and
- making the NZ Car Construction Manual available electronically as well as in hard-copy form.

All of the changes and additions to the LVV certification system have been accommodated and legally enabled by incorporating the various processes into the LVV Code, and the LVV Operating Requirements Schedule. Some LVV Standards have also been amended to accommodate the changes.

NZTA have stated that "*The review found that fundamentally the [LVV certification] system was still fit for purpose, however some enhancements were identified and introduced.*" Looking ahead, LVVTA will continue to consider other ways of improving the efficiency and effectiveness of the LVV certification system & discuss these ideas with NZTA.

DOCUMENTS UNDER DEVELOPMENT

New LVV Standard for Trikes Underway

Work is set to commence on the development of a comprehensive low volume vehicle standard for Trike design and construction during the July-September 2017 period. Trikes, like motorcycles, have kept getting pushed down LVVTA's priority order, but time has been scheduled to make things happen this year.

Trikes have been dealt with over the past decade through a basic code of practice that Kerry Buchanan and his colleagues within the Kiwi Trikers Social Club assisted LVVTA in the development of, with additional technical support coming from the NZ Car Construction Manual where appropriate.

In August 2013, a dedicated two-day workshop was held at the LVVTA office in Wellington, where a number of experts in the field of Trike engineering were brought in, and the Trike-related discussion over those two days resulted in some great solutions for long-standing problems around Trike design and construction. This was recorded, and will provide an excellent starting point in the formation of some sound technical requirements for Trikes.

The project will be driven by LVVTA, with technical support and assistance from the Kiwi Trikers Social Club.

LVVTA would like to hear from anyone who has an interest in Trike design and construction, and would be prepared to be involved in the consultation process as the standard evolves through its various drafts. This Trike Standard Working Group will be required to read through drafts as they are developed, and provide informed and constructive technical comments and feedback on each draft. Anyone with an interest and strong technical knowledge in this area is welcome to be involved.

All of those who attended the August 2013 Trike Workshop at LVVTA in Wellington will be automatically added to the Trike Standard Working Group.

Anyone who is willing to be on the Trike Standard Working Group should contact Linda Washington at linda@lvvta.org.nz and provide her with their telephone and email details.

EVENTS

Once again, in June 2016, LVVTA had a trade-site at the CRC Speedshow in Auckland. CRC Speedshow is a great way for LVVTA to connect with enthusiasts, given the multi-denominational audience demographic, and the event's position as the biggest automotive show in NZ. This year, LVVTA featured the rolling 1932 Ford replica chassis of Paul Grace from NZ Hot Rod Magazine. At right, Justin Hansen hands over an NZ Car Construction Manual (called the NZ Hobby Car Technical Manual at the time) to the lucky draw winner.

THE GOOD, THE BAD, & THE UGLY

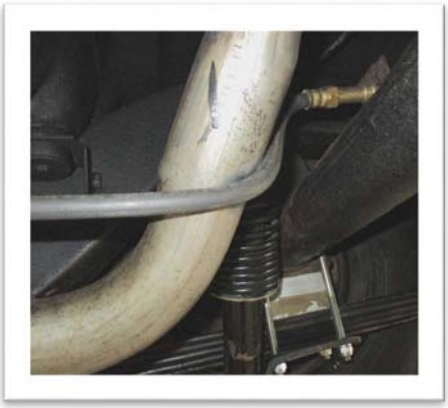
THE GOOD: Magoo's Street Rods Diff Brackets

Magoo's Street Rods in Masterton are having smart-looking and NZ Car Construction Manual-compliant diff brackets locally manufactured, which they are selling over the counter and using on their customers' cars. The brackets are CNC-milled from 1/2" mild steel plate to provide the nice scalloped look that car builders like, the end fittings are imperial to correctly fit the commonly-available USA-sourced mounting hardware, and they avoid the potential problems associated with welding forgings. Good product.

THE GOOD: Now, That's Welding...

Nice that not everything we see on the internet from America is bad! As the 'Dime-layers Club' by-line says, 'weld-porn' indeed...

THE BAD: Ready for LVV Certification!



Yes, that black thing is exactly what you think it is, and yes, that silver thing that it's stretched around is also exactly what you think it is...

It was on a car here in New Zealand, and presented to an LVV Certifier for LVV certification...

THE BAD: Universal Support Welded to Intermediate Shaft!

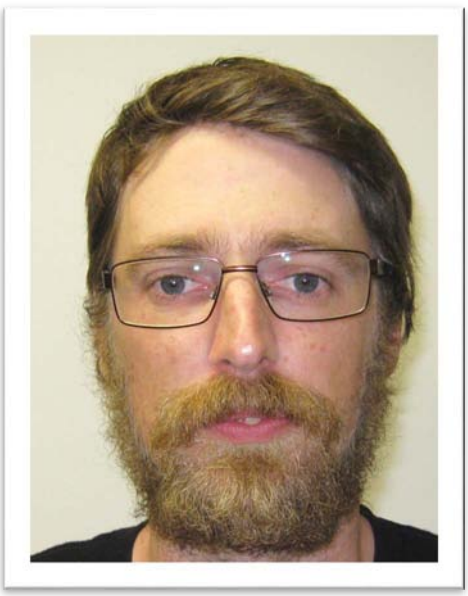
There's an engineering principle which is incorporated into the LVV certification system that says you need to have a support for every pair of universals used within a steering system. Makes sense, right? This guy has applied the rule, but then welded the inner ball of a spherical rod end to the steering intermediate shaft! As well as all of the other problems...

THE UGLY: An Axle Reinforced With an... Axle!

Laugh of the month thanks to Graeme McNeill of Mac's Speed in Auckland: "*Hi Justin & Tony. Just wondering if this type of extra strengthening will be ok for LVVTA approval!! It's a twin axle!! Bloody Americans! I just pulled it out of an otherwise stock '56 Chev pick-up*".

ODDS & ENDS

Welcoming New and Recent LVV Certifiers

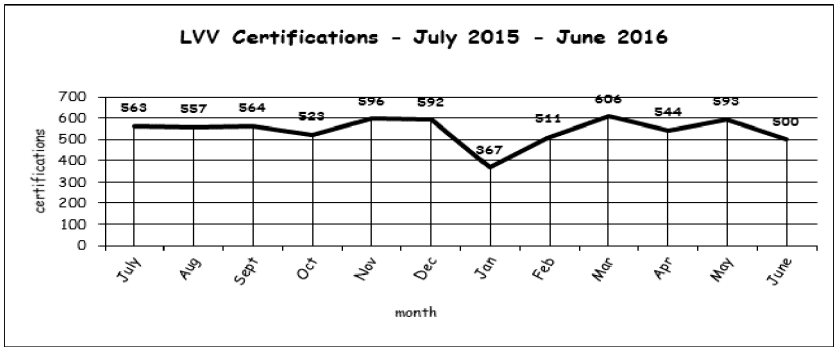


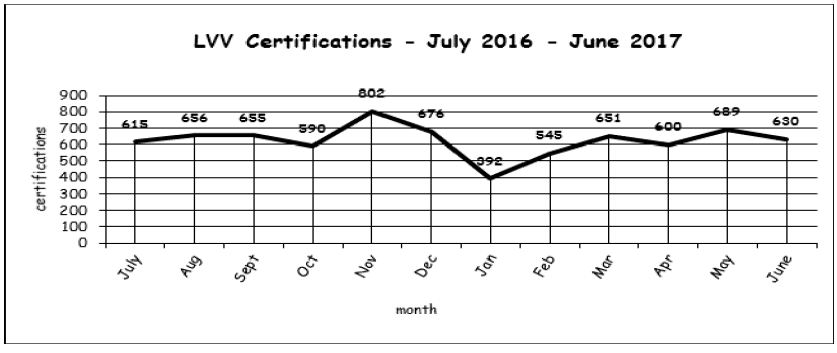
Gareth Court became an LVV Certifier during 2016, and is based in West Auckland. Gareth's background includes engineering and fabrication on performance imports, mini-trucks, top-end circuit race car construction, and is a highly-qualified suspension expert. Gareth can be contacted on cellphone (02) 411-22907, or his email address is rideordie.gc@gmail.com

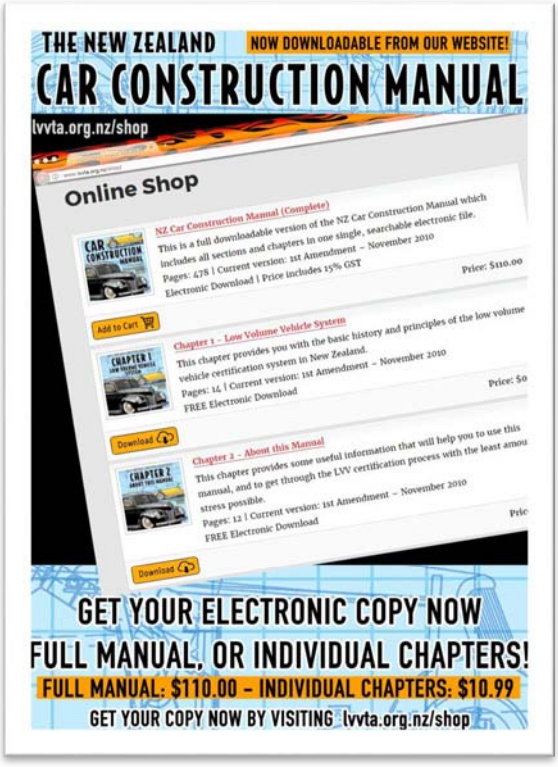
Colin Prouse joined the LVV Certifier network early in 2017. Based in Rotorua, Colin served in the Royal NZ Navy for 20 years. He is a contract engineer, and has spent a life-time building hot rods and drag cars in NZ and the USA, and has been involved in Land Speed Record racing. Now working at 'The Toy Shed', Colin can be contacted on (027) 477-7772.

Kane Marsden is a mechanic by trade, and became an LVV Certifier in 2016. Based in Hamilton, Kane works at Nostalgia Motors for Noel McMillin, who has been an LVV Certifier for 25 years this year. As well as picking up tips from the old pro, Kane has been heavily involved in the performance import scene, and also motorcycle racing. He can be contacted on (07) 846-1623.

LVV Certification Numbers for 2016 & 2017







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