

## LVVTA CELEBRATES TWENTY-FIVE YEARS

Just five months after the Low Volume Vehicle Technical Association (LVVTA) processed its 150,000th modified vehicle certification, the organisation has celebrated its 25th Anniversary.

The occasion was marked with an event at LVVTA's headquarters in Porirua, Wellington, on the night of 24 November, and was attended by many current and past LVV certifiers, Government representatives, current and past Technical Advisory Committee members, and other invited guests.

As well as recognising the achievements of the highly-regarded LVV certification system for modified and custom-built vehicles, the night also saw a special celebration honouring long-standing members of LVVTA's Technical Advisory Committee (TAC). This voluntary organisation is the backbone of the LVV system and is responsible for providing the technical content of the NZ Car Construction Manual, as well as assessing all vehicle design proposals.

As a token of gratitude to the TAC members, long service plaques were presented to those who've volunteered their immense expertise and experience for both 10 and 20 years.

As befitting the LVV system for modified and custom-built vehicles, the plaques were custom designed, and made from water-jet cut artwork featuring the type of vehicles that the committee was set up to help. 20-year award recipients were Graham Walls, John Hinton, Terry Bowden, Chris Litherland and Tony Johnson. 10-year recipients were John Reid, Alan Smail, Walter Wing, John Ward, Paul Sattler, Geoff Cottle, Kerry Buchanan, Mark Stokes, Justin Hansen and Peter Vahry, with some of them close to reaching the 20-year milestone.



A beautiful 25th Anniversary cake was made by Tina Cheer, wife of LVV Certifier Julian Cheer, and the obligatory cake-cutting was handled by LVVTA Management Committee Members (l to r) Phil Bradshaw, Graeme Banks, and President Steve Keys.



Custom designed plaques were designed by LVVTA staff for the TAC members, featuring a surround, incorporating a 1932 Ford Coupe hot rod, made from water-jet cut brushed aluminium.

Long-service TAC members are: standing, left to right; Peter Vahry, Kerry Buchanan, Walter Wing, John Ward, relative newcomer Clint Field, and Chairman of the last ten years - LVVTA technical man Justin Hansen. Kneeling, left to right; Geoff Cottle, Paul Sattler, John Reid, Graham Walls, and John Hinton. Missing from photo are Chris Litherland, Terry Bowden, Alan Smail, Mark Stokes, and past Chairman LVVTA CEO Tony Johnson.

## LVVTA CELEBRATES TWENTY-FIVE YEARS (cont'd)

During the evening's formalities, attendees heard not only from LVVTA speakers, but an enlightening perspective of what it's like to build a car with the assistance and support of the TAC and his LVV Certifier Ken McAdam from scratch-built vehicle owner Stewart Collinson. Stewart's hand-crafted Porsche RS60 replica was on display and had already received plenty of positive accolades even before he explained the in-depth build process.



Two new members were inducted into LVVTA's Wall of Honour, which is LVVTA's way of recognising special people who have made a significant contribution to the LVVTA and the LVV certification system in some way. The Honourees for 2017 were Jim McDonald from the New Zealand Transport Agency and Graeme Banks from the Sports Car Club of New Zealand.



Graeme Banks has been involved with LVVTA for 20 years, and has spent more than 10 of those years on its Management Committee, and Graeme's life-long vocation as an Accountant has been very helpful to LVVTA. Jim McDonald was one of LVVTA's key points of contact within the New Zealand Transport Agency for many years, and Jim's great approach enabled LVVTA to move forward in many areas of developing and improving LVVTA's systems and processes.

As an exciting interlude during the night's proceedings, the 2500hp dragster of Wanganui's Grant Rivers was fired up, giving the evening's guests – many of whom have never been exposed to such sights and sounds – an experience they'll not forget in a hurry!



*Linda Washington, below, receives appreciation for 20 years of great work from President Steve Keys.*



LVVTA CEO Tony Johnson paid special tribute to the LVVTA staff members for their passion, commitment, and resilience, and amongst the long-serving staff members, Linda Washington was recognised and appreciated for her 20 years of outstanding service to LVVTA by LVVTA President Steve Keys.

Brian Sara from the New Zealand Transport Agency wrapped up the evening with an interesting perspective on the good relationship that exists between LVVTA and the Agency, and spoke positively about the future of the LVVTA and the LVV certification system in New Zealand.



## LVVTA CELEBRATES TWENTY-FIVE YEARS (cont'd)



## AFTERMARKET ALERT

### Scary Spindle Statistics

LVVTA's Justin Hansen has recently been working with a local modifier investigating the strength of aftermarket one-piece spindles. This has revealed an alarming statistic, which even more alarmingly, was being promoted by the manufacturer as being a good statistic.

A well-known American manufacturer boasts that their one-piece cast spindles are created from 80-55-06 ductile iron, with minimum physical characteristics of 80,000 pounds per square inch (PSI) tensile strength, 55,000 PSI yield strength, and 6% elongation.

It's great that the manufacturer advertises this, and in other documents appears to have good quality control processes in place, however an OEM spindle made from a high quality forged steel will have an ultimate tensile strength somewhere in the region of 143,732 PSI and a yield strength of 130,244 PSI. These figures are based on an HG Holden spindle, made from 1345 steel, so not a modern high-tech item.

So what this means, in simplest terms, is that the ultimate tensile strength of the aftermarket spindle is 44% lower than that of the OEM spindle, and has a yield strength of 58% than that of an OEM spindle. Now that's scary, and no surprise that there are failures.

This is all part of the growing concern about the aftermarket industry, with cheaper manufacturing processes being offered.

With this concerning information in mind, LVVTA are currently looking at the strength of various aftermarket and OEM (for comparison) spindles. If, in the meantime, you require more information on this subject, please contact the LVVTA technical team.



### TCI-brand Suspension Failure

Earlier this year a scratch-built hot rod had a catastrophic failure of its left front upper coil-over mount, resulting in the driver being unable to maintain control of the vehicle, which veered off the road, causing significant damage but fortunately no injuries.

The vehicle was fitted with a new TCI-brand custom independent front suspension unit (IFS) which utilised coil-over shock absorbers. LVVTA has been working with the owner and the Technical Advisory Committee (TAC) trying to ascertain if this was a one-off fault, or part of a wider problem.

As part of that investigation, the other side of the vehicle's IFS was disassembled, stripped, and non-destructively tested. The result of this showed the failure was not limited to the one side, but in fact major cracking was identified on the other side of the IFS, with failure imminent. Another TCI-brand IFS unit has been found by a TAC member to have seriously deficient weld quality of its tubular suspension A-arms. It's a reasonable conclusion, therefore, that weld quality problems may exist across other TCI-brand IFS units.

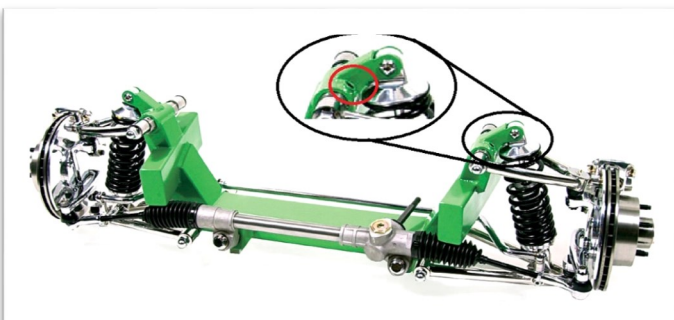
The cause of the failure is due to the upper shock mount not having a good fit to the upper pivot tube to which it is welded, and the weld itself being forced to act as a bridge, and thereby not achieving sufficient weld penetration. All owners of vehicles fitted with similar TCI IFS systems that LVVTA is aware of have been directly notified of this issue and the steps that are required in order to ensure that their own vehicle is not affected by the same fault.

LVVTA are however aware that there are likely to be other vehicles yet to be inspected that are also fitted with these suspension systems.



LVVTA highly recommends that owners of any such vehicles make contact with a level LV1D certifier so as to be informed of the steps required to mitigate this potential safety risk.

The LVVTA TAC has rescinded its blanket approval of TCI-brand IFS units, and any TCI IFS will require individual Type Approval from the TAC. More information, and the required inspection process can be found within LVVTA Information Sheet # 03-2017, downloadable free of charge at [www.lvvta.org.nz](http://www.lvvta.org.nz).





## TECHNICAL STUFF

### Do Retro-fitted ISOfix Child Seat Anchors Need to be LVV Certified?

Many vehicles are now fitted with dedicated anchors in the rear seat to plug a child seat into. The most popular is the ISOfix system from Europe, introduced 20 years ago by VW. There are equivalent systems from the US called Latch and CANfix from Canada.

There are many ISOfix-compatible child seats and baby carriers available, incorporating clips that engage onto two anchors hidden between the seat back and base, inboard of the lower seatbelt anchorages. A harness seatbelt is often incorporated in the child seat and so the original vehicle seatbelts are not used.

ISOfix has many benefits; it is easier to use, less likely to install the child seat poorly, and the original seatbelts are not subject to wear or damage from securing the seat in place.

Imported Japanese vehicles are less likely to have factory-fitted ISOfix anchorages installed from new, and as a result, many of them - including campers and child-care vans - are being retro-fitted.

**LVV certification is required for fitment of ISOfix anchors**, unlike a top tether anchorage which is a supplementary support for child seats and does not require certification provided that the

installation has been carried out in accordance with the instructions of the seat or harness manufacturer.

ISOfix anchorages are rated to 36kg and can be attached using the same methods as those for seatbelt anchorages in the LVV Standard 175-00, available for free download from the LVVTA website.



### Dark Tinted Windows in Disability Vehicles

Unlike commercial vehicles, the rear windows of MA class passenger vehicles have a maximum level of tint that can be applied – there must be a minimum 35% visible light transmittance (VLT). In comparison, 4WD vehicles and commercial vehicles can have any level of tint on glazing fitted to the vehicle to the rear of the driver.

There are also exclusions for stretched limousines. Following a case presented to the Transport Agency by LVVTA, the Agency has now agreed that wheelchair-accessible vehicles can be exempted to allow a darker tint to be applied, provided that the vehicle is equipped with external rear-view mirrors on both sides.

The reasons that an exemption may be necessary include:

- increased privacy for wheelchair users; and
- minor medical procedures are often performed while in the rear of vehicles; and
- bright light can induce headaches, travel sickness, and seizures.

If a vehicle operator has a situation where darker window tints are desired for the reasons outlined above, and the criteria is met, he or she should apply to the Transport Agency for an exemption.

### Gross Vehicle Mass Correction Process

In Newsletter # 46 from 2013 we highlighted the issue of vehicle overloading in cases where additional equipment is added, such as a mobility vehicle with a hoist and provision for a powered wheelchair. This issue can also arise on a campervan conversion with a box body, plus the weight of gas bottles and freshwater. We have also seen several electric vehicles overloaded by a heavy battery pack. In most cases the only solution is to remove seating positions to remain within the manufacturer's weight limits while operating.

It is known that imported Japanese vehicles don't always have an accurate Gross Vehicle Mass (GVM) recorded on the exportation paperwork, so a surrogate figure is calculated based on the unladen weight plus 80kg for each original seating position.

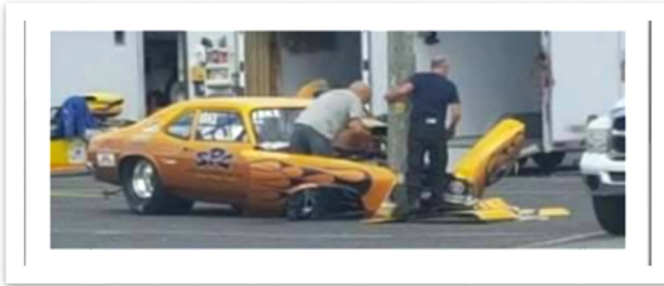
Alternatively, the Transport Agency has a process to correct the GVM of some imported Japanese vehicles by using data on identical models, which usually provides a greater GVM than the surrogate method, potentially allowing more seats to remain. This can be found by searching for chassis rating procedure on NZTA's inspection website: <http://vehicleinspection.nzta.govt.nz>

To follow is the full link:

<http://vehicleinspection.nzta.govt.nz/virms/entry-certification/reference-materials/chassis-rating-procedure-independently-imported-vehicles-including-trailers>

## TECHNICAL STUFF (cont'd)

### Why We Have Rules on Bonnet Protrusion!



Sent in by Levin-based LVV Certifier Andy Smith, this accident occurred in the pit area of a drag race meeting somewhere in the USA. The driver was driving towards the staging lanes at low speed and crashed hard into the pole simply because he couldn't see where he was going - because the pole was obscured by the large hood scoop. While this might be an acceptable risk in the off-road world of drag racing, there's no good justification in the world for a road-going vehicle having protrusions that obscure the driver's forward view of the road, other vehicles, and pedestrians.



Like a poacher turned game-keeper, LVVTA CEO Tony Johnson has some first-hand experience on this subject of engine protrusions and forward-vision to draw from...

*"Since developing the rules around engine protrusion limits within LVV Standard 100-30 (External Projections) many years ago, I've had a few car builders giving their view that these rules are unnecessary and there's no problem with engine protrusions.*

*Unfortunately for these blokes they're arguing with the wrong guy, because it was through my own experiences in my younger days that led me to realise the need to develop these requirements.*

*My big lesson came during the years when I was driving a street-legal HB Vauxhall Viva (pictured below) back in the mid-1980s that Grant Rivers and I built. To cover the 396 big block Chev's tunnel-ram intake manifold and twin four-barrel carburettors and air cleaners, I fabricated a large sheet-metal hood-scoop.*



*During the time of driving that car on the road, I had at least two instances of almost running over a pedestrian as I moved away from traffic lights in town as the pedestrian stepped out from the left-side curb and my hood-scoop completely obscured them. I was very lucky not to have badly hurt someone."*

While some rules in the LVV certification system are always up for debate and review, the simple premise that we need to see where we are going will always remain!

### 'Lipped' Rear Mudguards

Aftermarket wide-body kits are an increasingly-common modification amongst owners of Japanese vehicles. While in principle there's no issue with the body kits themselves, sometimes to achieve the installation the vehicle's structure has to be modified.

The rear wheel arches on many vehicles are being cut away to allow for a wider wheel to be fitted at a low ride height. Some modifiers forget however that any structural integrity removed from this area must be somehow reinstated, rather than just cutting the wheel arch away and leaving a gaping hole between the inner and outer mudguard sections. This area must be re-joined to reinstate any lost strength so that body integrity around areas such as seat-belt anchorages and door latching systems are unaffected.

As always, if you're not sure about what's right, seek advice from an LVV Certifier or contact the LVVTA technical team.





## TECHNICAL STUFF (cont'd)

### Retro-fitted Third Row Seats in Station Wagons

A vehicle owner recently reported to LVVTA that he'd purchased a 12-year-old Commodore station-wagon with a third-row seat fitted to it. The seller assured him that no certification was required as it was a 'Holden seat', and this was confirmed to him when he approached his local Holden dealer. *"I wasn't really sure, so I emailed the local Holden agents, and they were happy to send me a written assurance that the seat did not require LVV certification"*.

However, despite this assurance, the new owner had already found that the seat had been incorrectly installed, and the back 'latch' of the seat wasn't engaging onto its 'receiving loop' in the floor properly. That might not seem like a major problem, until you realise that the seat is 'stressed', meaning that in the event of a collision, all of the seatbelt loads (that's a combined mass of the occupants and the seat) travel through the seat frame and through the floor mounts. To give this a little context, if there were two children seated and buckled in to this seat, in a 50 km/h collision, the loads travelling through the seat would be somewhere in the region of 2000 kg – slightly more than the weight of a Ford Ranger double-cab ute. To add some context to *that*, if 2000 kg loads were applied to the belts, it's extremely unlikely that this seat would have been able to resist the loads, and the occupants would likely have been thrown forward, crushed by the seat itself or injured by the seat in front.

The problem with this particular installation was in the hinged spare wheel cover, a section of which must be cut out during the seat installation process. This didn't happen, which meant that the loop didn't engage far enough into the latch. A fairly simple fix in this case, but one which without detection could have been deadly to the occupants of that seat. None of these retro-fitted seats attach to factory mounts or bolt holes, and all of the mounts need to be precisely positioned to attach to the correct parts of the vehicle structure, with additional reinforcing plates that are specifically designed for that particular installation. That means there's plenty of ways this install can go wrong, and hence the need for a proper inspection process to take place.

We're not sure how long this particular seat was fitted in the car, nor do we know how many WoF's it was incorrectly issued with; - but we do know that it's extremely fortunate the vehicle wasn't involved in a collision during that time.

WoF inspectors are reminded to be vigilant when inspecting any vehicle with a third-row seat fitted, even if at first glance, it appears to have been fitted at the factory. These are commonly seen in Holden Commodore and Ford Falcon station-wagons, but may also be fitted to a number of other station-wagon type vehicles. Far from being a 'rubber-stamping' exercise, there's a real safety risk where these seats aren't checked and certified to ensure they are correctly fitted.

The only person legally able to carry out this inspection is an LVV Certifier, who will issue an LVV Certification plate to verify that the seat installation is compliant and safe.

LVVTA is aware of at least two types of aftermarket seats that are commonly fitted to VT through VZ Commodores, however there are almost certainly more available.

Type 1 known to LVVTA – (as shown below) is manufactured by Central Spring Works Australia Pty Ltd.



*This picture shows the mount which wasn't latching correctly, and also the LVV certification plate, which was fitted after the safety issues were rectified. Correct installation is crucial to the safety of this type of seat. The LVV certification inspection will ensure that all aspects of the installation process have been done correctly, and in accordance with the relevant requirements. The LVV Certifier will also apply a warning label to the vehicle advising the maximum height and weight of the occupants.*



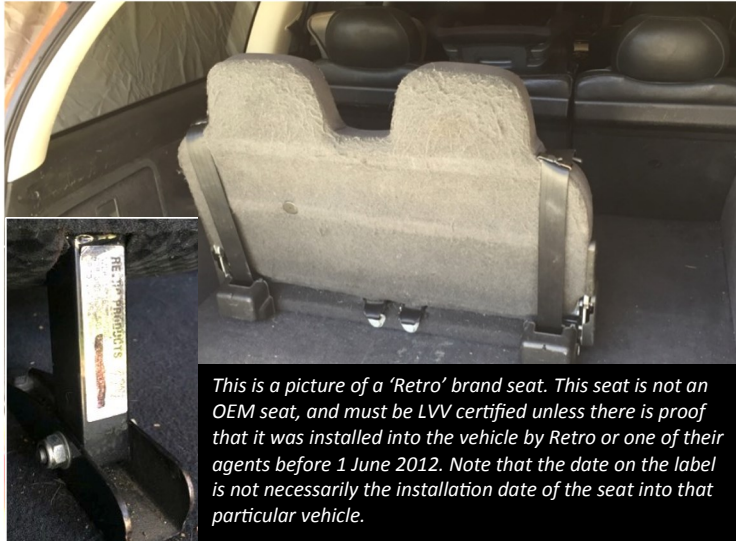
Once LVV certified, the LVV Certifier will install a label similar to this (pictured below) affixed in a prominent position, usually within the rear door/hatch opening.



## TECHNICAL STUFF (cont'd)

### Retro-fitted Third Row Seats in Station Wagons

Type 2 known to LVVTA – (as shown below) is manufactured by Retro Products.



*This is a picture of a 'Retro' brand seat. This seat is not an OEM seat, and must be LVV certified unless there is proof that it was installed into the vehicle by Retro or one of their agents before 1 June 2012. Note that the date on the label is not necessarily the installation date of the seat into that particular vehicle.*



*The LVV certification process will ensure that all aspects of the installation process have been carried out correctly, and in accordance with the applicable requirements.*

#### Legal requirements:

The WoF VIRM is clear on third row child seats (see VIRM Modification Table excerpt below). The ONLY seat that doesn't require LVV Certification is a 'Retro' brand seat which was installed by Auckland Auto Trimmers or their agents before 1 June 2012. These seats have been identified as complying with the Australian Federal Code of Practice VSB-5A [category 2 and 3].

Some form of documented evidence must be sighted by an AVI

to confirm the date of installation of the seat into that vehicle, and the AVI should also check to ensure that the seat latches operate correctly.

Any vehicle that doesn't meet these criteria should fail its WoF inspection, and should be referred for LVV Certification. A full list of LVV Certifiers can be found on the LVVTA website; [www.lvvtta.org.nz](http://www.lvvtta.org.nz).

## 7 Vehicle interior

### 7-1 Seats and seat anchorages

Reasons for rejection   **Tables and Images**   Summary of legislation

**Table 7-1-1. Modifications that do not require LVV certification**

Fitting of or modification to:	LVV certification is not required provided that:
Aftermarket 'Retro' brand child seats designed for children 5-12 years old (up to 38kg)	<ul style="list-style-type: none"><li>the seat is identified as complying with the Australian Federal Code of Practice VSB-5A (category 2 and 3) and installed by Auckland Auto Trimmers or their agents before 1 June 2012.</li></ul>

#### Clarification

- 'Retro-fitted' means a component or system (such as a seat) which has been fitted to a vehicle after it was manufactured.
- 'Retro' brand means a component manufactured by a company called 'Retro Products'.

### Modified & Uncertified Vehicles Slipping Through the Cracks

Due in part to the recent three-year Warrant of Fitness requirements for new vehicles, LVVTA are seeing an increased number of modified vehicles which require LVV certification, but have been on the road for a long period of time without having ever been LVV certified. Common examples are vehicles fitted with height-adjustable suspension, front spring spacers, and modifications for disabled users. Any vehicle equipped with a seating position specifically for a wheelchair-bound occupant must undergo LVV certification to ensure that the modifications are safe. This point was highlighted recently when a non-compliant wheelchair restraint system was identified by the coroner as the likely cause of death of a wheelchair-bound occupant in the vehicle when it was involved in a crash.





## LETTERS

### Dick Reynolds Remembered

Hi Tony

*I just wanted to congratulate you on the story about Dick Reynolds in your newsletter passed on to me by Kerry Arnold. I hadn't heard he had passed until now. I became the secretary of the NZTTMF some 30 odd years ago and my relationship with Dick started in a very similar fashion, particularly involving the Mothers Cellar port. It certainly helped him overlook the younger female daring to enter the hallowed (and smoke filled) halls of LTSA, and on man's business! Your story depicts the man I knew very well.*

Best regards

**Kate Bucknell** | National Secretary

NZ Truck-Trailer Manufacturers Federation



### Pat on the Back for Don Hoff

Some complimentary words were made earlier this year about Christchurch-based LVV Certifier Don Hoff, in an article about a top-quality hot rod featured in NZV8 magazine. The vehicle owner made specific mention of the certification process, and of Don Hoff:

*"...One thing I was most apprehensive about was the certification process but later my fears proved to be completely unfounded. Don Hoff was involved in the process once the chassis was completed and from then on, he was helpful, very supportive, tough, thorough, and fair..."*

Good on you Don—nice to see positive stuff out there.

### Why We Do It...

Lance:

*Just a picture of Steph in the car the afternoon of the Rego 'n' WOF on the D, Alex helped me get Steph in and out of the car, it was well worth it, the look on her face says it all, took her for a ride around the area, she loved it.*

*Thank you for all you have done to see our dream finally completed.*

Cheers

Larry 'n' Steph

*A huge bright spot in the lives of an older couple; - Larry Price, who has been building a Jaguar D-Type replica for many years, sent this email to thank his LVV Certifier Lance Walsh who helped him through the build process, after finally finishing his project and being able to take his wife Steph for a ride.*



### Fond Farewell From Lance Walsh

Hi Tony

*Hope you and Linda are well, and enjoying the wilderness. Please find attached a letter that I sent to Andrew Lister, regarding my finishing up as a certifier.*

*I would like to take this opportunity to thank you, personally, for giving me the opportunity to do this job for around 21 years. It has been a roller coaster at times, but, I have got to meet some wonderful and clever people, and, to help them achieve their ambitions to build or modify a car for the street in NZ. The truly bad guys I have dealt with, I can count on one hand. That is why I have taken nearly two years to get to this point. I'm almost done with all the big builds on my books, so they didn't have to start again with a new certifier.*

*I'm currently building a '32 Ford Woody (oh alright, "Replica"), so will be on the other side of the fence in the not too distant future. I hope they remember me fondly when that happens!*

*You should be rightly proud of what you have achieved on behalf of us car people. The system is as good as any other regulatory system I have dealt with, and is constantly evolving, unlike a lot of other bureaucratic endeavours.*

*All the best for the future for you and Linda, both in and out of LVVTA.*

Regards

Lance Walsh (LVV Certifier Auckland region)



*Lance (left) has been an LVV Certifier since 1996, operating in more recent years on a full-time basis, providing LVV certification services - particularly for highly-modified and scratch-built vehicles - in and outside of the Auckland region. Lance has a strong background in hot rod construction which he has been able to put to good use in his certification work. LVVTA wishes Lance all the best in his next chapters of life.*

## THE GOOD, THE BAD, & THE UGLY

### THE GOOD...



A 'fishplate' of course! Nathan Curran combines great fabrication skills with a brilliant sense of humour!

For those not familiar with hot rod engineering jargon, a 'fishplate' is a common slang term for a reinforcing plate typically used to support chassis section joins.



LVVTA's Frances Bradey spotted these pictures from Carterton LVV Certifier Julian Cheer. She found the body first (complete with scales), which had us all intrigued, and then we heard Frances call out "Hey look! I've found the head!" Well done Nathan!

Don't you love people that can be funny and clever all at once?!

### ...THE BAD...



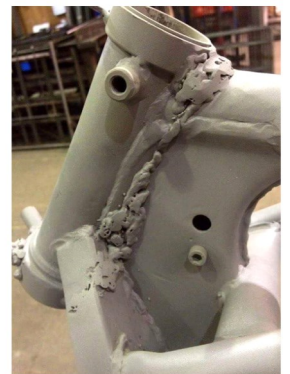
It's like a strut brace, only uncomfortable... (and dangerous).



You think it's a joke - but it's not.

Innovation isn't necessarily good by definition. And it certainly shouldn't always be encouraged!

### ...AND THE UGLY...



Just because you can, doesn't mean you should...

All from a country that doesn't have vehicle modification and construction rules.



## ODDS & ENDS

### LVVTA People

In an email to LVVTA CEO Tony Johnson earlier this year, LVVTA Management Committee Member Graeme Banks wrote:

*"Hi Tony. I have a request for forgiveness. After viewing the Mitchell Race Extreme-built Electric Mustang at the CRC Speedshow I dropped in to see my old mate Robbie Francevic on the way home, and bought an electric Nissan Leaf."*

*You are probably aware that Robbie won the 1967 NZ Saloon Car Championship in the Custaxie, the first Wellington Street Race in 1985 in a Volvo, the Australian Touring Car Championship in 1986 and has competed at Bathurst six times. He is passionate about electric vehicles and a big help in giving me the finer points with them.*

*Here's a photo of the Nissan Leaf. Regards, Graeme.*

In reply to Graeme, Tony wrote:

*"Hi Graeme.*

*I'm really happy for you. And here's a photo of what your Nissan Leaf will look like should you ever be brave enough to venture beyond your corner diary. Cheers, Tony."*



Justin and Dan get to visit all sorts of interesting places when they go on work trips...

### What Is It?

It's not often that a vehicle comes to visit us at LVVTA that we need to check the registration label in order to determine the year make and model of it - we're all car people after all - mechanics, engineers, compliance specialists, and so on.

But, when this wee gem arrived at LVVTA's office, that's exactly what happened. Can you work out what it is?



A free chocolate fish for the first correct answer to Nikki..



Dan: Where do I pour the can of mechanic?

Justin: The front wheels have driveshafts, what is this witchcraft before me?!

Leon Cast's view on LVVTA Technical Team members Dan Myers and Justin Hansen, and their respective skill-sets...

**THE NEW ZEALAND CAR CONSTRUCTION MANUAL**  
 NOW DOWNLOADABLE FROM OUR WEBSITE!  
 lvvta.org.nz/shop

**Online Shop**

**NZ Car Construction Manual (Complete)**  
 This is a full downloadable version of the NZ Car Construction Manual which includes all sections and chapters in one single, searchable electronic file.  
 Pages: 418 | Current version: 1st Amendment - November 2010  
 Price: \$150.00  
 Electronic Download | Price includes 15% GST

**Chapter 1 - Low Volume Vehicle System**  
 This chapter provides you with the basic history and principles of the low volume vehicle certification system in New Zealand.  
 Pages: 14 | Current version: 1st Amendment - November 2010  
 Price: \$5  
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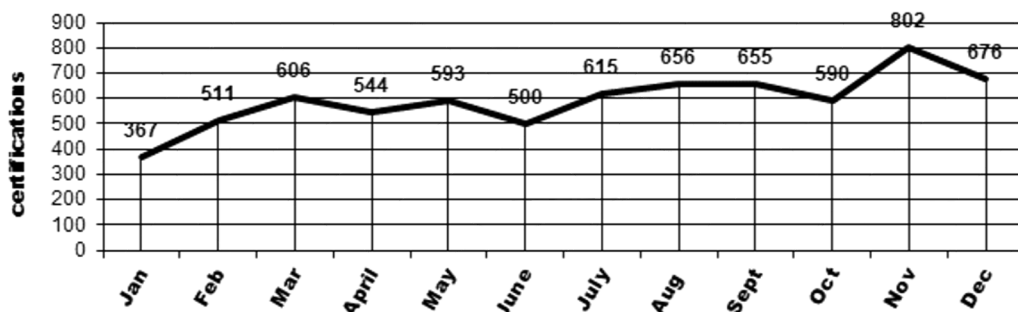
**Chapter 2 - About this Manual**  
 This chapter provides some useful information that will help you to use this manual, and to get through the LVV certification process with the least amount of stress possible.  
 Pages: 12 | Current version: 1st Amendment - November 2010  
 Price: \$10  
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## ODDS & ENDS

### LVV Certification Numbers for 2016 & 2017

#### LVV Certifications - 2016



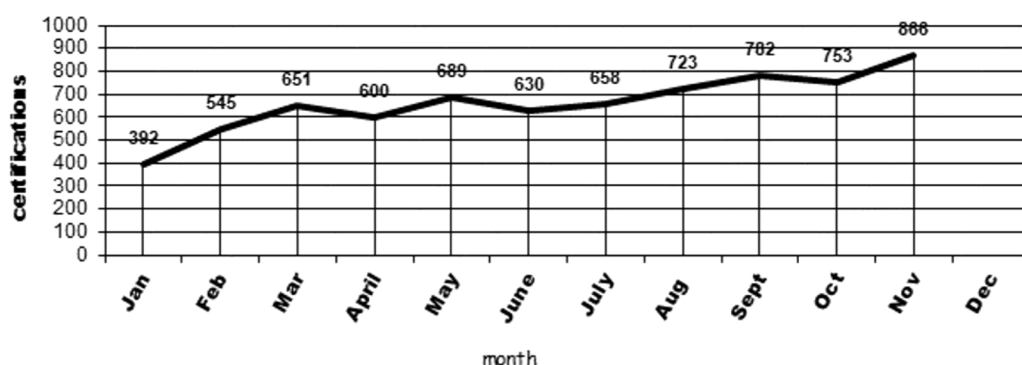
The average monthly certification number for the first 11 months of 2016 was 585, whereas the average monthly certification number for the 11 months of 2017 was 663. This represents an increase of 13% over 2016, and is by some margin the highest year for certification numbers since the 2008 global financial crisis (GFC).

Total certification plate production for 2016 was 7,115.

If we estimate a certification number for December 2017 (based on 2016's December + 13%) the total certification number for 2017 would become 8053.

There are no particular trends which go anywhere near to explaining the increase; - the jump-up is spread across all vehicle and modification types. The increase may be just associated with a general increase in new car sales and used imported vehicle sales.

#### LVV Certifications - 2017



### LVV Certification Numbers Historically

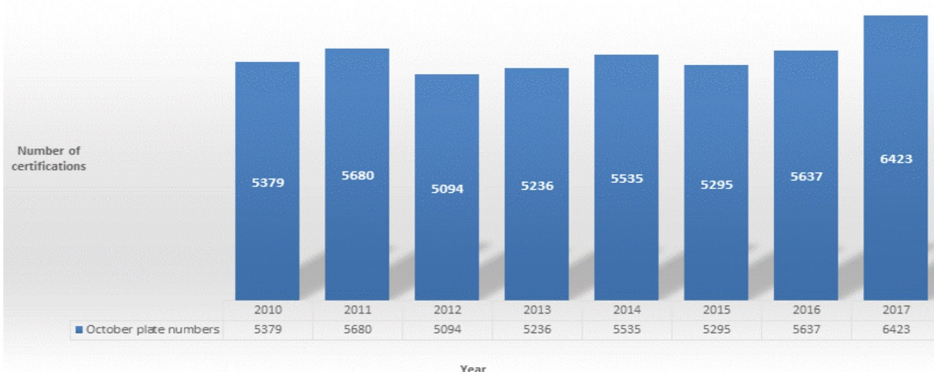
The highest ever year for total LVV certifications (since LVV certification began in 1992) was 2008 (just prior to the GFC), which was 8,756. 2005 was 8075.

Certification numbers for 2017 are the highest since that peak pre-GFC year of 2008, when certification numbers dived almost overnight from a monthly average of around 750 per month in 2008 to 550 per month in 2009.

In 2008 the annual total was 8,756. For 2017, the estimated total is 8,053.

While the total certification number for 2017 isn't back up to the peak period of 2008, the number of plates produced for the month of November 2017 - 866 - is the highest ever since the system began.

#### October plate numbers 2010 - 2017



Low Volume Vehicle Technical Association (Inc)

E-mail: [info@lvvta.org.nz](mailto:info@lvvta.org.nz)

Phone: (04)238-4343

[www.lvvt.org.nz](http://www.lvvt.org.nz)

Fax: (04)238-4383

Office & courier: 21 Raiha Street, Porirua City

Postal: P.O. Box 50-600, Porirua City 5240