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LOW VOLUME VEHICLE CERTIFICATION AND YOUR CLASSIC

THE WORLD OF LOW VOLUME VEHICLE CERTIFICATION IS PROBABLY MORE RELEVANT TO YOU THAN YOU MAY THINK!

Words: LVVTA Photos: *New Zealand Classic Car* archive / Supplied

The evolution of the low volume vehicle (LVV) certification system in New Zealand started when the government commenced planning the introduction of vehicle standards back in the mid to late 1980s. At that time, life for the hobby car enthusiast was a pretty simple affair: we could go down to the local post office and register our new scratch-built hobby car, even if it hadn't been built yet. As long as our cobbled-together jalopy could pass a few simple warrant-of-fitness (WOF) requirements at the local testing station, it was officially and legally 'on the road'. Aah, the good old days.

But at that time, vehicle standards–based safety regimes were already in place throughout most other Western countries. Despite widespread suspicion of it being some sort of sinister plot, our government's plan to introduce vehicle standards into this country was simply to drag New Zealand into line with the rest of the developed world by introducing legislation to control the safety-related quality of vehicles imported into and, to a much lesser extent, manufactured in New Zealand.

When rumours of this new government legislation started spreading, various enthusiast groups investigated what was going on. They learnt that the Ministry of Transport's proposals for how modified and scratch-built vehicles would be handled under the new regime wouldn't be a palatable outcome for the hobby car enthusiast. Under the new regulations as originally drafted, it would be illegal to build a vehicle or to modify a component or system in a production vehicle governed by one of the new vehicle standards, unless the modification could be shown to comply with the standard, via the same level of testing as the component or system had undergone to gain initial approval.

As a result of lobbying by the enthusiast groups, the ministry recognized the need for some relaxation of what would have effectively been a blanket ban on building and modifying vehicles.

After New Zealand Hot Rod Association (NZHRA) members had got their heads

around the issues at stake and developed a relationship with the key government officials, in 1990, the organization proposed that the ministry allow the NZHRA to write its own technical rules, use its own experts for the inspection process, and self-regulate. After much negotiation, this concept was adopted, and so began the low volume vehicle (LVV) system that we have today, which came into effect in January 1992.

As the start of 1992 rolled around, the LVV code was written. Other enthusiast groups — the Sports Car Club of New Zealand, the New Zealand Motor Caravan Association, and the Constructors Car Club — also gained approval to establish and operate their own parallel self-certification systems.

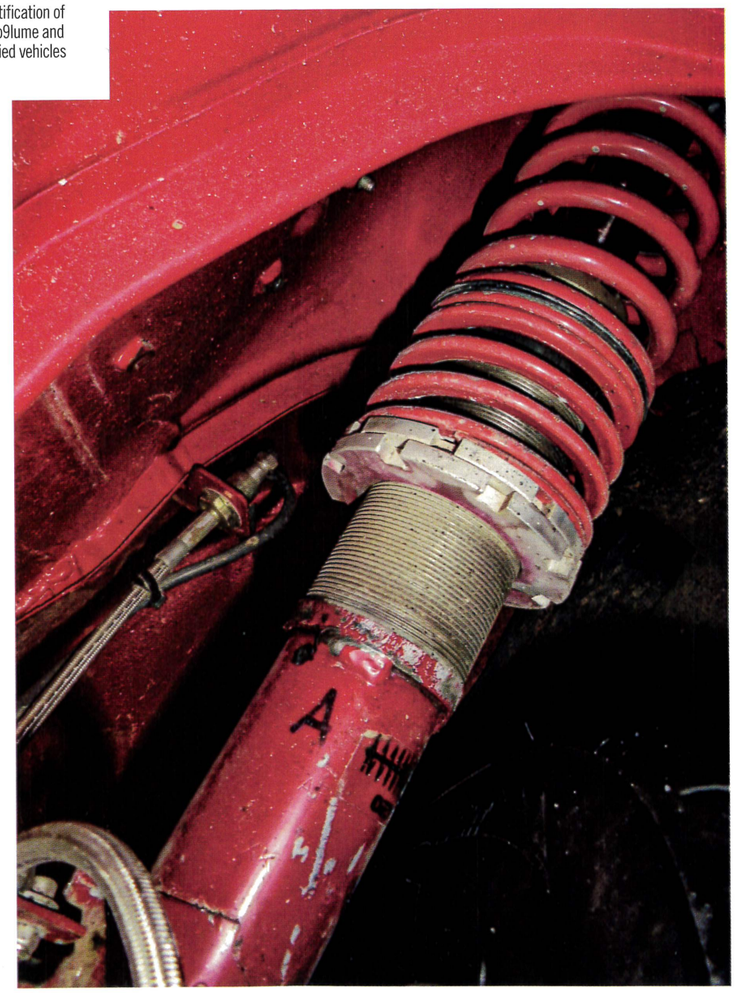
Initially, all enthusiast groups were concerned only with their own members' vehicles. However, it was only a matter of weeks before the ministry approached the NZHRA and one of the other groups, asking if they could also look after all the non-member vehicles out there whose owners found themselves in the same situation as the enthusiast-group members, with vehicles that were modified and suddenly required LVV certification. This led to the creation of the Low Volume Vehicle Technical Association (LVVTA) as a parent body to represent the interests of those six groups, produce the LVV certification plates, and deal directly with the government on behalf of all member groups.

After a couple of years, it became apparent that the quality of inspections was varied among the groups, and that this wasn't ever going to become uniform while individual groups operated their own systems and developed their own individual interpretations of the government's vehicle standards. To resolve this, the member associations of the LVVTA agreed to the development and implementation of a unified, single certification system and commonized 'alternative standards'.

In 1995, the LVVTA took on the role of

The job of ensuring vehicle safety is far from over, as time, trends, and technology never stand still, especially in the world of modified and scratch-built vehicles

The LVVTA is a parent body that represents owners interests in certification of low vo9lume and modified vehicles



While the process of constructing a scratch-built vehicle is no longer a matter of simply popping into the post shop, it's not necessarily hard, if the correct process is followed

merging the systems into one, under the LVVTA's administrative control. At the same time, the Ministry of Transport's new arm, the Land Transport Safety Authority, now known as the 'New Zealand Transport Agency' (NZTA), took over responsibility for appointing and revoking the individual LVV certifiers.

The LVV system today

Since the early days, the LVV certification system has been improved and refined enormously, with the development of a selection of LVV standards, which set technical requirements to cover a wide range of safety-related systems and modifications, not only for the hobby groups but also for commercial and mobility uses. These range from the typical performance enhancement types of modifications — engine conversions, brake conversions, suspension upgrades, wheel changes, etc. — to seat installations, seat-belt anchorage retrofitting, right-hand-drive steering conversions, and removal and disabling of airbags, right through to adaptive control systems for people with disabilities.

The vast majority of the almost 50 LVV certifiers around the country are practical, hands-on vehicle enthusiasts who have spent their lives building and modifying cars and bikes, making mistakes and learning from them, and furthering their knowledge through extensive specialist training.

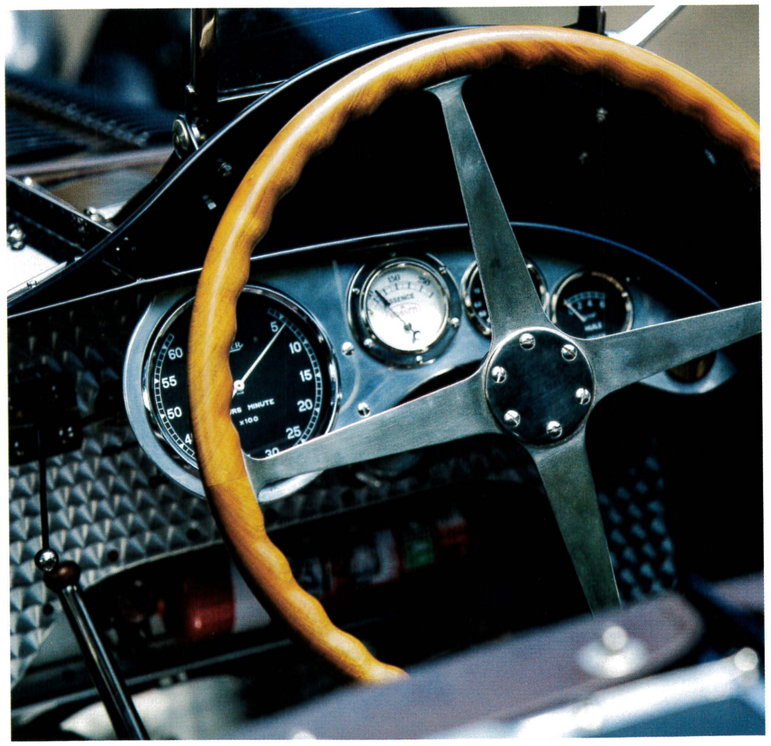
The job of ensuring vehicle safety is far from over, as time, trends, and technology never stand still, especially in the world of modified and scratch-built vehicles where many people are deliberately trying to do something different to everyone else. The LVVTA is constantly evolving the system to ensure that vehicle owners and modifiers can continue to enjoy in the future the freedoms they have today.

Your car

The LVV system may be more relevant to classic car owners and readers of *New Zealand Classic Car* than many may think. The NZTA has a section on its website dedicated to vehicle inspection requirements, which all WOF inspectors must abide by. This is known as the *Vehicle Inspection Requirements Manual* (VIRM). The VIRM contains a list of modifications that can be performed without LVV certification being required, which in turn means that certification is required for any modifications not listed.

The modifications requiring LVV certification that are commonly seen on the pages of this magazine include the installation of seat belts, be it in a vehicle that was never fitted with any from the factory, or an upgrade from lap belts to lap and diagonal belts. Understandably, as steering and brakes are critical components on all vehicles, very few modifications are permitted in this area without LVV certification being required. The LVVTA's assessment of a number of aftermarket electric power-steering kits commonly installed in classic vehicles also shows the value of LVV certification. Almost all of the kits assessed feature welded internal components, some of which have been badly welded and all of which would result in a total loss of steering control should a weld fail.

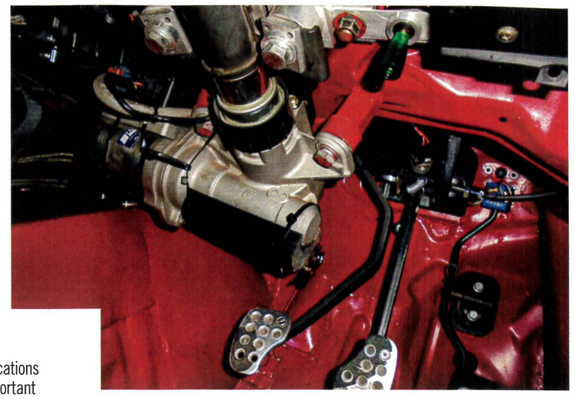
The increasing number of counterfeit parts being produced without care and attention being paid to the specific manufacturing processes or materials makes taking parts at face value an increasingly difficult task. In part due to this, it's impossible to list individual brands and part numbers that have passed LVV certification. However, the complete list of LVV standards that components must meet is available free of charge through the LVVTA's website: lvvta.org.nz.



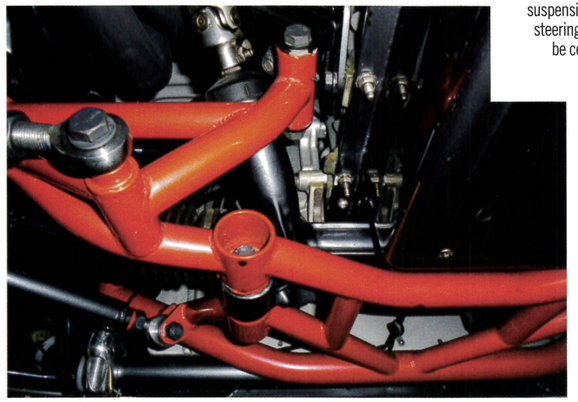
Scratch-building your own

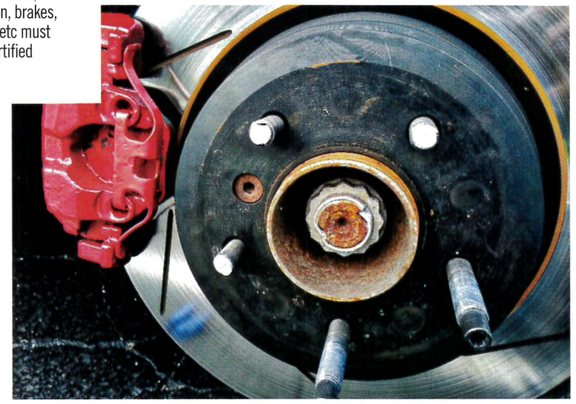
While the process of constructing a scratch-built vehicle is no longer a matter of simply popping into the post shop, it's not necessarily hard, if the correct process is followed. In 2007, the LVVTA released the *NZ Hobby Car Technical Manual*, which has since been renamed *The New Zealand Car Construction Manual*. Available in digital form, it is essentially a recipe book for building a safe and compliant vehicle.

If, for example, complex steering or independent front suspension (IFS) modifications are made that don't follow time-proven techniques, vehicle owners must apply for design approval before



Modifications to important components, suspension, brakes, steering etc must be certified





construction begins — a process similar to submitting building plans to the city council. Design approvals are assessed by the Technical Advisory Committee (TAC), which comprises a number of experienced and respected vehicle builders, engineers, fabricators, LVV certifiers, and LVVTA staff members.

There are exceptions to the design-approval requirement for IFS manufacturers that have, over a period of time, given the TAC reason to have a high level of confidence in them — usually because the TAC has reviewed a number of applications from them and is confident that these manufacturers maintain a high level of quality control within their design and manufacturing processes. That allows the manufacturer to be added to the list of LVVTA-recognized IFS manufacturers.

The advantage in choosing an LVVTA-recognized IFS manufacturer is that individual design approval and non-destructive testing of critical-function welds within the suspension assembly are not required for LVV certification. The LVV certifier will still, however, need to ensure that the IFS is appropriate for the weight and power output of the vehicle, and that all geometry, including bump steer, is within acceptable specifications.

Besides complex steering and suspension modifications, the remainder of most scratch-built vehicles can be assessed solely by an LVV certifier who holds the correct certification category (Category 1D). The LVVTA advises that vehicle builders work alongside their LVV certifier throughout the build and, of course, use *The New Zealand Car Construction Manual* as a guide. Presenting a completed scratch-built vehicle for certification can be likened to presenting a finished house build to city council inspectors, who would soon inform you that they could not assess the foundations without removing the walls and flooring …

Modified production v. scratch-built

Although this is not as common in the classic car world, some vehicles do get modified to the point at which they can no longer be considered as one of the originating mass-produced vehicles. This is often the case when a vehicle body is fitted to a chassis produced by a different manufacturer or for a different model vehicle. One example illustrating this point was an XE Ford Falcon body fitted to a Nissan Patrol four-wheel-drive chassis. A transport service delivery (TSD) agent sought clarification from the NZTA as to how the vehicle should be processed for re-entry into the fleet. During the ensuing discussions, people in the agency involved in the decision-making process were unable to reach any clear consensus as to how the vehicle should be classified; some determined that it should be a scratch-built LVV, while others regarded it as a modified production Ford Falcon, and others regarded it as a modified production Nissan Patrol. Each point of view had some merit, and the outcome had the potential to affect safety requirements for seat belts, for example, so it was important to agree the right outcome.

From this confusion, definitions were created as to what constitutes a 'modified production' vehicle and what constitutes a 'scratch-built'. The definitions have since been updated to keep up with the desires of vehicle modifiers and the advancement in vehicle-construction techniques. Any vehicle built without using the predominance of an original-equipment (OE) vehicle, such as most kit

cars or replicas — including Shelby Cobras, Pur Sang Bugattis, and Lotus 7s — will always be considered scratch-builts.

LVVTA and the Vintage Car Club

The Vintage Car Club of New Zealand (VCC), one of LVVTA's member organizations, also has direct links to the NZTA. This means that it, too, can offer assistance in classifying a vintage vehicle. This is especially helpful in situations in which someone has purchased a body, a chassis, or a collection of parts but has no ownership history or proof of previous registration. Vehicles such as this may still be required to meet the applicable LVV standards and require LVV certification. However, some dispensations can be made for vehicles deemed to be historic replicas.

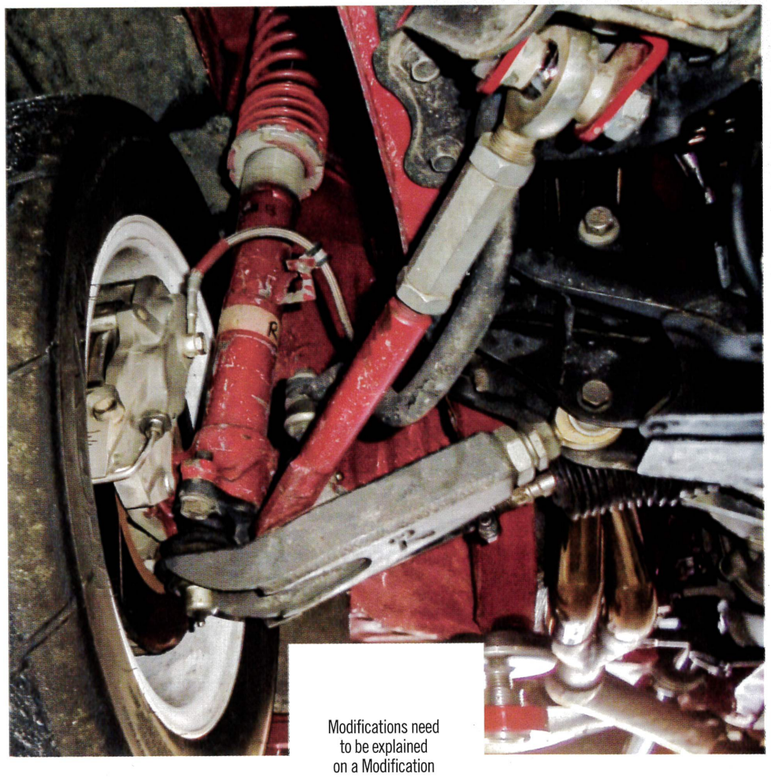
Modification declarations

Prior to the introduction of the LVV system in 1992, a modified vehicle could legally be on the road in New Zealand thanks to what's known as a 'modification declaration', or 'declaration' for short. These simple paper documents are still valid for vehicles that have been continuously registered since the declaration was issued, provided that the vehicle has not been further modified. If a vehicle's registration has lapsed, then LVV certification will be required. However, the declaration can be used as evidence that the modifications predate certain LVV requirements.

Fresh imports

Laws, regulations, and requirements vary from country to country, and the LVV certification system is no different. LVV certifiers are often presented with vehicles that were legally on the road overseas but fail to meet requirements here. Easy examples relevant to *New Zealand Classic Car* readers are the many kit cars imported from the UK that arrive with welded steering shafts and substandard suspension arms, which do not comply here. Thankfully for road-user safety, UK standards have improved in recent years. Regardless of whether a vehicle was on the road abroad, it's legally required to meet all applicable LVV standards in New Zealand. Anyone who's made a visit to the LVVTA's offices and seen the table of horrors, or who follows the LVVTA Facebook page, will be able to attest to the reason this stance towards overseas regulations is unlikely to change.

If New Zealanders are having a vehicle built abroad, the LVVTA recommends that they supply the vehicle builder with a copy of *The New Zealand Car Construction Manual*.



Modifications need to be explained on a Modification Declaration form

The LVVTA and motor sport

Road-going unibody or class MA vehicles within New Zealand that are fitted with a roll cage — except for scratch-builts — are required to have either a MotorSport New Zealand (MSNZ) or New Zealand Drag Racing Association (NZDRA) authority card. The card, in essence, transfers the responsibility for the suitability of the roll cage from the LVVTA to MSNZ or the NZDRA. The same authority card can cover harness seat belts and hydraulic handbrakes, which cannot otherwise be LVV certified.

The cost

As with any system that relies on trained professionals, the cost involved in LVV certification is proportional to the time involved. As such, there's no set fee. LVV certifiers must also cover the costs of their building, equipment, training, consumables, and travel. As such, basic certification usually starts from about $500 and may extend to $2K–$3K for a complex scratch-build that requires numerous inspections. The hourly rate charged by LVV certifiers is very similar to what you'd expect to pay for other professional tradespeople, and well below the non-monetary cost of the critical component failures that the process may help you avoid. ■

For more information on the LVVTA or the LVV certification system, visit lvvta.org.nz. For specific technical enquiries, email tech@lvvta.org.nz.