



LVVTA Operational Certification Processing Improvements

Introduction:

During 2013, a group of unsafe and non-compliant modified vehicles were incorrectly LVV certified in the Auckland region, and went on the road fitted with LVV certification plates. This has caused considerable difficulties and stress for the affected vehicles owners, as it has also for LVVTA and the New Zealand Transport Agency during the past year and a half. LVVTA is committed to ensuring that something like this will never happen again, and in order to ensure such prevention, LVVTA has introduced a number of operational changes and improvements to the LVV certification system during 2014, with particular focus applied to vehicles modified on a 'series-production' basis. Many of these changes affect all LVV Certifiers, so the purpose of this LVVTA Information Sheet is to advise LVV Certifiers of the changes that have been made, and how these changes may affect LVV Certifiers.

Existing form-set review process:

LVVTA introduced a form-set review process in 2006 to provide a 'catch-net' for an LVV Certifier who might miss an important safety or compliance issue during his LVV certification inspection on a modified vehicle.



The Holden Commodore pictured below was modified from new by Bunce Coach Company, which builds professional hearse vehicles for funeral directors in New Zealand. Bunce have been involved in complex vehicle modifications for many decades, and are top-line craftsmen.

This 'form-set review' process – effectively a desk-top documentation audit process - has been progressively improved during recent years. An 'administrative' review is applied by LVVTA staff to all LVV certification applications, and a 'technical' review is applied by LVVTA staff on a random or targeted-sampling basis.

Of the eight incorrectly-certified vehicles that triggered the need for these LVV operational processing changes, four were issued with LVV certification plates before LVVTA Technical Officers carried out a random technical review on the application for the fifth vehicle.

When problems were immediately identified with the vehicle during the technical review, LVV certification plates were not issued for vehicles five, six, seven, and eight despite the LVV Certifier in question having signed them off and submitted his certification documentation requesting LVV certification plates.

Existing form-set review process can't be a guaranteed fix:

The problem, obviously, is that a technical form-set review cannot be applied to all LVV Certifications; - problem-prevention has to be balanced against cost and available resource, and with up to 40 LVV certification applications received by LVVTA each day, 100 % technical reviewing would require more than one additional full-time staff member, which is not good use of the funding that would be required. And to be fair, even with 100% technical reviewing, things could still slip through the net – such is the level of complexity and diversity associated with LVV certification. For these reasons, LVVTA carries out technical form-set reviews on a targeted sampling basis, in accordance with LVVTA's document review obligations specified in 5.2(6) and 5.2(7) of the *LVV Operating Requirements Schedule*.

So, the challenge is, how can LVVTA do a better job of ensuring that poor LVV certification decisions are prevented from getting all the way to 'the street' without 100 % technical form-set reviewing being applied?

While it's easy to focus on 'the one(s) that got away', the positives that can be taken from the experience referred to here is that the gate was closed after vehicle number 4, and not vehicle number 44, or 144. And to keep things in perspective, it is the first time that a 'series-production' problem like this has occurred in over 131,000 LVV certifications during a 22 year period.

Another consideration is that there are adverse side-effects of LVVTA operating the form-set review process. The adverse side-effects of the application of the form-set review process include that:

- the process is a negative task for LVVTA staff-members to have to be engaged in; and
- the process consumes a lot of LVVTA staff-member time, which prevents that time being applied to the ongoing development of the LVV system with new and revised technical standards; and
- the process frustrates LVV Certifiers and has the potential to compromise the good relationship that exists between LVVTA and the LVV Certifiers; and
- because the form-set review process exists, fingers can be pointed at LVVTA when something slips through the net as if LVVTA is responsible for the LVV Certifier's poor decision.

There are, however, many benefits to accrue from the form-set review process.

Benefits of the current form-set review process:

Despite it not providing the guarantee of the perfect catch-net we'd all like, the technical form-set reviewing process has never-the-less made a positive impact on the overall quality of LVV certification inspections in recent years, in particular 'bridging the quality gap' between the LVV certifiers who do an excellent job and always have done, and those who, for whatever reason, haven't always operated at the same high level.

LVVTA believes that most LVV Certifiers – while admitting that being contacted by LVVTA technical staff to be told that they've missed something or have got something wrong can be frustrating – do appreciate the extra set of eyes and resultant opportunity to spot a potential safety problem. As a couple of LVV certifiers

have said, *"we'd rather you (LVVTA) talked to us about the problem before the cert plate goes on than a coroner after the plate is on"*.

One LVV Certifier (who experienced a number of contacts in 2013 from LVVTA technical staff during the form-set review process on his certifications) wrote to LVVTA recently stating: *"...I have been very angry with LVVTA staff on occasions and had vented about it. However when I have had time to consider why the LVVTA staff have pulled me up it seems that 9 times out of 10 they are correct. As certifiers we find this frustrating and annoying and our clients get all grumpy and it costs dough etc etc, its just not pleasant to have disputes with LVVTA staff over whether something is correct or not. It seems that LVVTA staff are now applying the HCTM and LVV Stds very precisely to every job they see. Thinking about this I can easily see why LVVTA would do this. The result of being picked up for annoying little things that we (certifiers) used to just let go as not major and also being picked up for larger assumptions that things will be ok because they were previously, is that I now spend more time and more care in carrying out LVV inspections. The cost has gone up a little for simple mods and a bit for extensive mods and scratch-builts. But, I am now doing a better job of certification. LVVTA's approach has caused me to improve the quality of what I submit to LVVTA for certification and I suspect the same effect is being had on other certifiers. So even though there may be complaints, LVVTA staff's form-set auditing is having a positive effect. We do not need an 'easy mark' for the desk top audit of form-sets. I believe I understand why the attention has come onto the smaller details and I see a positive outcome for the LVV certification system because of it."*

Many other similar comments have been made by LVV certifiers, all containing a similar sentiment, which is effectively that *'we don't like the form-set review process, but we agree that it's a good thing'*.

There are other positive spin-offs for the LVV certification system from the form-set review process. The form-set review process has become a very clear window from which day-to-day LVV certification activities can be viewed by LVVTA technical staff, which enables the LVV certification system to be constantly improved as a result of what is learnt. Opportunities to improve the LVV certification system provided by the form-set review process include that:

- problems or poor technical decisions identified by LVVTA technical staff during the form-set review process enable one-on-one coaching to occur, which improves the knowledge and performance of LVV certifiers;
- discussions held between LVVTA technical staff and LVV certifiers during the form-set review process also improves the technical knowledge of LVVTA staff members;
- LVVTA is able to learn about changing modification trends from the form-set review process and determine where technical resources are best applied;
- LVVTA is able to gather photographic evidence of poor certification decisions through the form-set review process that can be used to assist in the training of all LVV certifiers;
- information gained or problems resolved on a one-on-one basis through the form-set review process can be passed on to all LVV Certifiers through the LVVTA Newsletter, or LVVTA Information Sheets;
- technical information gained by LVV technical staff during the form-set review process can be used to continuously improve and update LVV standards, Information Sheets, and other technical and operational documents.

There are both positive and negative aspects to the form-set review process, and given the complexity and diversity of LVV certification, and the potential risk that exists as a result of the lack of formal qualifications that are relevant to LVV certification, LVVTA is of the view that the form-set review process should remain as one of the LVV certification system safeguards.

Operational certification processing changes:

While, as detailed previously, the technical form-set review process provides benefits and adds value to the LVV certification system, it’s not a fix-all, and other preventative measures are required at LVVTA’s end of the system in order to ensure that no repeats of poor LVV certification decisions ‘hitting the street’ occur, particularly in relation to series-production modifications where any safety or compliance issue is multiplied by the number of vehicles involved.

In order to ensure against any such problems arising again in the future, LVVTA has developed and introduced a number of operational changes and improvements into the low volume vehicle certification system during 2014, which are outlined as follows.

Additional declaration on F001 Statement of Compliance Certificate:

An additional section has been introduced into the ‘Form F001 – LVV Statement of Compliance Certificate’, that requires the LVV Certifier to determine and declare whether the vehicle undergoing LVV certification is an ‘Individually-Constructed/Modified’ vehicle, or a ‘Series-production’ vehicle. With this declaration made, it will enable LVVTA staff carrying out the administrative review (which is applied to each LVV certification application) to assign a higher level of priority for a technical review to any application that is declared to be a ‘Series-production’ vehicle.

The requirement on an LVV certifier in relation to this part of the F001 declaration is to ensure that, with every LVV certification carried out, the determination and declaration is made as to whether the vehicle is an ‘Individually-Constructed/Modified’ or ‘Series-production’, in the same way as the declaration is already being made between ‘Registered’ or ‘Unregistered’, and ‘Scratch-built’ or ‘Modified Production’. It is a very simple additional check-off for the LVV certifier, which will take no more than a few seconds.

New Internal Process Form IPF43:

A new LVVTA Internal Process Form (IPF) has been developed, which identifies all of the typical modifications and constructional features which provide more potential than most modifications for problems, and as such, must always be referred by the Plate Production Officer to a Technical Officer for a technical form-set review, regardless of whether the LVV Certifier is categorised as 'low risk' or 'high risk' by the Error Report Summary.

One of the identified modifications is, for example, 'lowered floor'. Other 'high-risk' modifications recorded within the new IPF are 'stretched limousine conversion', 'joy-stick control', 'offset-crank brake pedal', 'aftermarket steering column, and 'dropped I-beam axle'.

A key instruction of this LVVTA Internal Process Form is that it must be pinned to the LVV plating desk, in clear view of the Plate Production Officer (or anyone else filling in for the Plate Production Officer) at all times. If an application is presented which incorporates a modification which is listed on the IPF, the application cannot be processed until an LVVTA Technical Officer has carried out a technical form-set review. LVVTA's open-plan office set-up ensures that all staff members are close enough to communicate easily and assist each other with any issues being dealt with.

This is an internal LVVTA operational change only, and there is no requirement for an LVV certifier to do anything differently as a result of the introduction of this processing change.

LVVTA - Internal Process Form
IPF43 - Process for Paperwork that
needs to go through a Technical
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Process for Paperwork that needs to go through a Technical Check

THIS INTERNAL PROCESS FORM MUST BE ABLE TO BE SEEN ON THE PLATING DESK AT ALL TIMES

This process must be followed by the Plate Production Officer.

Any plates that come through with any of the following modifications or are from a certifier that is in the red section on the error report list must be passed on to a technical officer for review.

Modifications that must go to the technical team:

- Lowered Floor
- Major structural modifications
- Steering changes
- Aftermarket steering column
- Drive from Wheelchair
- Custom IRS or IRS
- Dropped Spindles
- Air Bag or Hydraulic Suspension
- Off Set crank brake pedal
- Custom uprights
- Dropped I-Beam Axle
- Composite Floors
- Aluminium Floors
- Chassis Rails
- Space Frame Chassis
- Wheel Chair or seat docking systems (eg: Ezylock, Uni-Lok)
- Joy Stick Hand Control
- Hydraulic Steering
- Stretched Limousine Conversions
- Additional Seats

The technical team is to advise the plating person which certifiers are in the red section of the error report and if there are any other certifiers that they would like to audit for any reason.

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New 'Vehicle/Modification of Interest Form'

Previous to 2014, in a case where an LVVTA Technical Officer needed to warn or caution the Plate Production Officer about a vehicle that needs to be watched for or stopped if an LVV certification plate application was made for the vehicle in question, such internal warning or cautioning was carried out verbally, with a note made by the Plate Production Officer for his or her future reference.

Now, in any such circumstances where an LVVTA Technical Officer or any other LVVTA staff member has a 'vehicle of interest' or a 'modification of concern' that they wish to bring to the Plate Production Officer's attention, this must, in every case, be carried out in writing using the new standardised 'Vehicle/Modification of Interest Form'

This is an internal LVVTA operational change only, and there is no requirement for an LVV certifier to do anything differently as a result of the introduction of this processing change.

'Trigger Word' alarm system into Access database:

An upgrade has been made to the Access plating application system to show, in addition to all completed LVV certifications, any LVV certifications that are 'in progress' or 'on hold'. This will enable 100% of LVV certification files to be checked, so now the Plate Production Officer can identify, when entering a vehicle's

details, that a same or similar given vehicle type or modification has previously had a technical review applied and been halted.

A more significant upgrade has been made to LVVTA’s Access database (which is the software system used for the LVV certification plate production process) which enables ‘trigger words’ or ‘trigger terms’ to be entered into the database, which when typed in during the process of entering the LVV certification plate information, will automatically trigger the appearance of a ‘Refer for Technical Form-set Review’ dialogue box, which is an instruction to the Plate Production Officer (or any other person who is operating the plating system in the absence of the Plate Production Officer) that a ‘high-risk’ modification has occurred, and that the certification must be referred to an LVVTA Technical Officer for a technical form-set review. These ‘trigger words’ and ‘trigger terms’ will mirror those words and terms that are in the new LVVTA Internal Process Form # 43 (IPF 43) referred to previously.

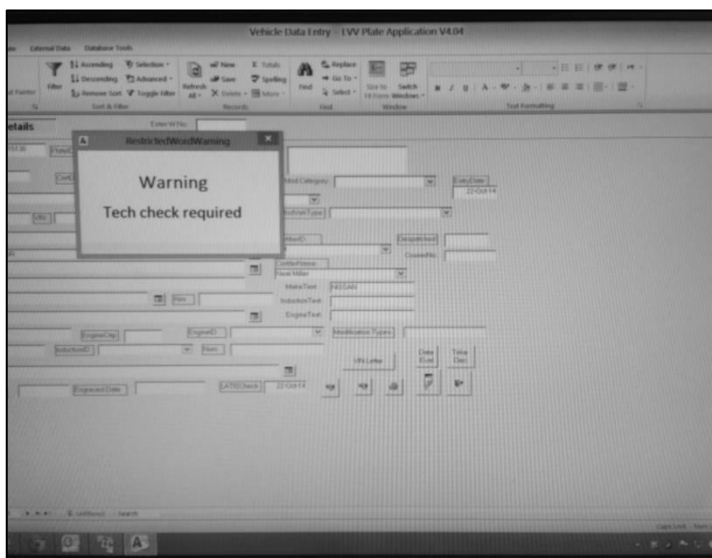
As an example, the words LOWERED FLOOR (together with abbreviations LWRD FLOOR, LWD FLOOR, LWRD FLR, LWD FLR) are also programmed as associated trigger words. If any person operating the LVVTA plate production system enters any of those words during the process of creating the certification plate information, a dialogue box will appear, which has to be cancelled before text-entering can recommence. Instructions within IPF 43 require the person operating the plating system to refer the certification application to a Technical Officer for a technical form-set review before continuation of text entering can recommence.

Several trigger words have been programmed into the system, including JOY STICK HAND CONTROL and LIMOUSINE CONVERSION (and their respective abbreviations), and more can be entered as required.

In theory, the Plate Production Officer will have already routed the certification via an LVVTA Technical Officer, because of the clear instructions to do so in the IPF 43 referred to previously, and so the dialogue box will provide an option to proceed if the technical form-set review has been completed and passed.

This ‘trigger word/trigger term’ system will provide another opportunity to ensure that a technical review is applied to a high-risk certification, either in the event that the Plate Production Officer hasn’t done so for whatever reason, or in the more likely event that someone less familiar with the details of the system is operating the plate production system in the absence of the regular Plate Production Officer.

This is an internal LVVTA operational change only, and there is no requirement for an LVV certifier to do anything differently as a result of the introduction of this processing change.



LVVTA Information Sheet # 01-2014 ‘Series-production Modification Pre-approval Process’:

A fundamental and unfixable problem with LVV certification is that, unlike a warrant of fitness inspector where he or she is likely to have someone else who is also a warrant of fitness inspector within the same building or at worst just down the road to discuss things with, LVV certifiers are in a position where, for the

most part, they have to work in isolation. This places them in the unenviable position of having to deal with complex vehicle design issues on their own, other than the technical support that they can gain from LVVTA technical staff.

Part of LVVTA’s role is to provide a technical support role to LVV certifiers when they require it, and LVVTA needs to ensure that additional technical support is always available to an LVV certifier when he is to become involved in the LVV certification of ‘series-production’ modification work, rather than the LVV certifier being left to work in isolation.

LVV certifiers have been required, for many years, to contact LVVTA whenever they are presented with any ‘series-production’ modification work that is of a complex or unusual nature, in order to ensure that the vehicles and the modifications can be considered by a number of people, and increase the probability as much as is possible of the right technical decisions being made.

Since the series-production modification problem of 2013 where the LVV certifier concerned chose not to contact LVVTA for technical support, LVVTA has, as a result, reinforced to LVV certifiers that seeking LVVTA guidance in the case of complex or unusual ‘series-production’ modifications is a mandatory requirement that must be followed whenever an LVV certifier is presented with such LVV certification work.

This requirement has been reinforced and re-communicated to LVV certifiers within LVVTA Information Sheet # 01-2014 ‘Series-production Modification Pre-approval Process’, which was issued to all LVV certifiers as an LVV Certification Manual update in September 2014.

LVVTA
LOW VOLUME
VEHICLE
TECHNICAL
ASSOCIATION INC

INFORMATION SHEET
#01-2014 August 2014


Series-production Modification Pre-approval Process

Introduction:

There are a number of companies, both within New Zealand and in other countries, who carry out mechanical and structural modifications to vehicles on a 'series' basis, sometimes referred to as a 'low volume production run'. These modifications range from straight-forward and simple modifications to highly-complex re-engineering of vehicle structures and safety systems.

Examples include:

- raised roof 'pop-top' camper vans
- station wagons converted to utilities
- lowered floors for disability access
- stretched limousines
- right-hand drive steering conversions
- seat and seatbelt fit-outs
- hearse conversions.



LVVTA to be involved at outset:

Many of these conversions are very well executed by experienced companies who have the necessary expertise to perform such complex structural modifications, resulting in safe vehicles. If however a conversion is produced in numbers and has safety-related flaws, the consequences to road safety are multiplied by the number of vehicles modified, along with the time and effort required to rectify the issues on all affected vehicles.

With the ever-increasing complexity associated with modern motor vehicle design and construction, there is continually greater need to identify the risks involved with each volume modification process prior to the modification process taking place, and for LVVTA to provide technical support to the LVV Certifier before the certification process, so as to ensure that any issues are resolved back in the design phase of the work.

There have been problems in the past as a result of LVV Certifiers trying to deal with complex matters in isolation, and the objective of this pre-approval process is to ensure that LVV Certifiers are given technical support by LVVTA technical and engineering staff before the modifications occur. In the past, where LVVTA has been involved at the outset, problems have been avoided and safe outcomes have been achieved without costly and time-consuming rectification work.

Flow-chart to be followed and applied:

In order to enable this LVVTA support structure to occur, LVVTA requires LVV Certifiers to work with the modifier (or importer) to assess the risks and determine whether to involve LVVTA early on. The adjacent

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LVV certifiers are required to read and understand LVVTA Information Sheet # 01-2014, and diligently apply it in any applicable circumstances.

LVV Certifier training:

Since the series-production modification problem of 2013, LVVTA has reinforced at LVV certifier training sessions throughout New Zealand during November 2013 and May 2014 that seeking LVVTA guidance in the case of complex or unusual ‘series-production’ modifications is a mandatory requirement that must be followed whenever an LVV certifier is presented with such LVV certification work. LVVTA will also continue to reinforce the importance of taking extra care, and involving other experts rather than making decisions in isolation, in future training.

LVV certifiers have been asked, for each vehicle they LVV certify, to ensure that they provide sufficient written detail about the vehicle and it’s modifications on the F001 Statement of Compliance, F002 LVV Data Form, and within the applicable form-sets, to enable LVVTA staff to be able to quickly and easily identify the full scope and extent of the modifications that have occurred.

LVVTA will also – having gained agreement from LVV certifiers throughout New Zealand during May 2014 – be placing more emphasis on fault identification at LVV certifier training sessions into the future; - taking what LVVTA has seen and coached individual LVV Certifiers on as a result of the form-set review process, and sharing this coaching on a collective national basis for all LVV certifiers.

LVV certifiers are expected to take on-board the discussions at training sessions about the requirement to contact LVVTA when certifying ‘series-production’ modifications, recognise the seriousness of this situation, and vigilantly apply this knowledge in all future applicable circumstances.

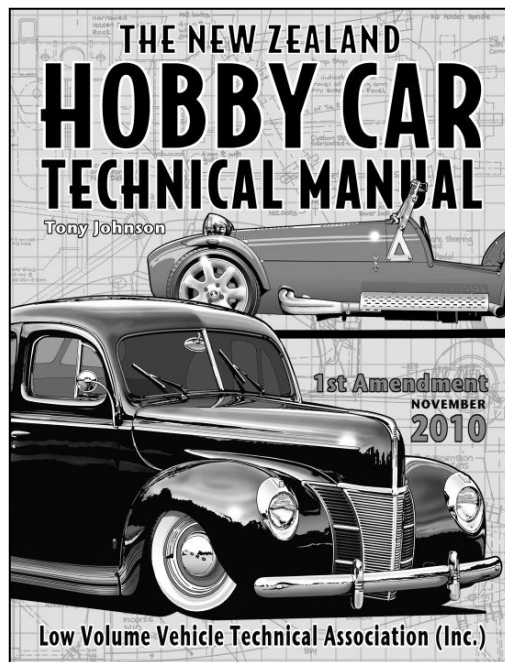
Improve availability of NZ Hobby Car Technical Manual:

There has been some criticism that the New Zealand Hobby Car Technical Manual (HCTM), which is an integral and important part of the LVV certification system, is not sufficiently accessible to the public or the industry. LVVTA traditionally sells the HCTM in hard-copy only.

In 2015, LVVTA will look into making the HCTM available to download from the LVVTA website in the future, either as a complete document, or as individual chapters, so that car builders and modifiers only have to pay for those sections that they need.

With this improved accessibility, there will be less likelihood into the future of a modifier or builder carrying out modification or construction work that does not meet the requirements of the HCTM.

The details of the changes to the way in which the HCTM is made available to the public and the industry, and the costs associated with the HCTM, or individual chapters of it, will be notified during 2015.



Changes to LVVTA's Professional Indemnity insurance group scheme:

Since LVV certification began in 1992, professional indemnity insurance has been made available (by New Zealand Hot Rod Association and then LVVTA) to LVV certifiers on a group basis, in order to reduce the otherwise high cost of individual professional indemnity insurance policies that LVV certifiers would have to source themselves.

LVVTA has harboured concerns for some time that a small number of LVV certifiers who present a disproportionately high risk due to their ongoing poor performance could jeopardise the group professional indemnity insurance scheme that is in place for all LVV certifiers. After thorough consideration during 2014, taking effect on 1 January 2015, LVVTA will not be accepting membership from any LVV certifier who has shown by his performance over the past 36 month period, that he is a high risk LVV certifier as shown by the LVVTA Error Report Summary for the year-end periods of 2012, 2013, and 2014.

LVVTA has reviewed the insurance group criteria in accordance with paragraph 5.5(2) of the LVV Operating Requirement Schedule, which states that “...LVVTA may, at its discretion, withdraw its endorsement of an LVV certifier for membership to the LVVTA Insurance Club, if LVVTA has reason to believe, based on evidence

of an LVV Certifier's poor performance or unethical behaviour, that the actions, decisions, judgments, or ethics of the LVV Certifier may expose the ongoing viability of the Insurance Club to risk..."

Non-renewal of the LVV certifiers' insurance scheme is made in conjunction with the Error Report Summary, and where a LVV certifier is considered to present an unsustainable risk to the LVV certification system, (which is measured by such factors as):

- a) has been placed consistently in the 'orange zone' or 'red zone' of the Error Report Summary; or
- b) has had any substantive disciplinary action taken against him by NZTA (e.g. multiple written warnings or suspension); or
- c) where significant damage, injury, or loss of life has occurred as a direct result of poor certification decisions; or
- d) where any dispute has arisen directly as a result of certification activities.

Four LVV certifiers have been affected by this change, and were notified in writing by 1 December 2014 so that they can make alternative arrangements in relation to holding the required professional indemnity insurance policy.

In summary:

Unfortunately, the events of 2013 relating to 'series-production' modifications has caused LVVTA to make a lot of changes in terms of its operational processes, and also its collective mind-set, particularly in relation to LVVTA making the assumption that LVV Certifiers who have always been considered low-risk can be completely trusted and relied upon to do the right thing in every case.

Those LVV certifiers who LVVTA have targeted the most have been those LVV Certifiers who have been identified by the LVVTA Error Report Summary system as being 'high risk'. In the 'series-production' situation of 2013, the errors of judgement were made by an LVV Certifier who has always been considered to be low-risk, who was clearly having a bad day – or several bad days.

These events have been a painful reminder that a highly-regarded LVV Certifier can have a bad day, or number of days, and LVVTA has to do a better job of preventing an LVV Certifier's bad decision from 'hitting the street'. LVVTA is confident that the operational changes outlined within this LVVTA Information Sheet will reduce the chances of a 'series-production' problem ever occurring again, and that the general quality of the LVV system is improved as a result. We also hope that the processes that have been put in place during 2014 do not have any adverse impact on the majority of LVV certifiers who we know strive, and succeed, in doing a very good job within a very complex and diverse certification environment.

Finally:

For any assistance in the use of this Information Sheet please contact an LVVTA technical team member at the Wellington LVVTA office.

Tony Johnson
Chief Executive Officer, Low Volume Vehicle Technical Association.