Analysis of Log Transport Operator Survey on 50MAX and HPMV Use

Prepared for:

New Zealand Forest Owners Association

September 2017

Transport Engineering Research New Zealand Limited (TERNZ) is a research organisation providing high quality independent research services to the transport industry. TERNZ has expertise across a broad range of transport-related areas including vehicle safety, vehicle dynamics, vehicle-infrastructure interaction, fuel efficiency, driver behaviour, driver performance, impacts on communities and other social issues. Our customers also span the range of industry stakeholders and include government agencies, vehicle manufacturers and suppliers, industry associations, individual transport operators and community groups.

TERNZ prides itself on the quality, timeliness and independence of its work.

Authorship: This document was written by John de Pont. For further information, please contact John at j.depont@ternz.co.nz or by phone on 09 579 2328.

TERNZ

TRANSPORT RESEARCH

TERNZ Ltd

642 Great South Rd | Ellerslie | Auckland

PO Box 11029 | Ellerslie | Auckland 1542

Phone +64 9 579 2328

info@ternz.co.nz

www.ternz.co.nz

INTRODUCTION

The transportation group of the New Zealand Forest Owners Association (NZFOA) wish to get a better understanding of the factors influencing the rate of uptake of 50MAX and High Productivity Motor Vehicles (HPMVs) by the log transport sector.

The first part of the study was an analysis of the Road User Charges (RUC) purchasing data collected by the New Zealand Transport Agency (NZTA). This data can be analysed to provide an estimate of the size of the log transport fleet, the types of vehicle combinations that make up the fleet and the proportion of 50MAX and HPMVs. Because the RUCs are sold on the basis of distance travelled, the data provides information on both vehicle numbers and vehicle distance travelled. However, it does not provide a reliable breakdown into regional data nor does it give any indications of the reasons why the level of uptake is what it is.

To address these questions we have undertaken an operator survey with the assistance of the Log Transport Safety Council (LTSC). The survey was created as an on-line survey using Google forms tool. A first draft was prepared and this was circulated for comment and feedback to Martin Hyde and Warwick Wilshier representing the LTSC and to Mike Spiers representing the NZFOA. Based on this feedback, some minor changes were made to the questionnaire and it was then forwarded to the secretary of the LTSC, Bruce Nairn, with an explanatory e-mail for circulation to the LTSC members.

The full contents of the questionnaire are shown in the appendix to this report. The explanatory notes asked operators to complete a separate response for each region in which they operate. The purpose of this was to be able identify any regional differences in the uptake of 50MAX and HPMVs and in the reasons why the level uptake is what it is. The explanatory also undertook to keep all individual responses confidential and to only present the results in a consolidated form.

SURVEY RESPONSES

General

There were 47 responses to the survey spanning all of the regions as shown in Table 1 although in two of the regions there was only one respondent. The total number of vehicles operated by the respondents was 1175. The analysis of the RUC purchase data indicated a total log transport fleet size of 2206 vehicles and thus the survey responses represent 53% of the fleet. This is a very good response rate for a voluntary survey.

Table 1. Regional distribution of respondents.

Region	Number of Respondents
Northland	11
Central North Island	14
East Coast	6
Hawkes Bay	4
Southern North Island	1
Nelson and Marlborough	1
Canterbury	4
Otago and Southland	6
Total	**47**

The number of vehicles per region is shown in Table 2. Several of the regions have been combined to preserve the anonymity of the respondents.

Table 2. Regional distribution of surveyed vehicle numbers.

Region	Number of Vehicles
Northland	221
Central North Island	309
East Coast & Hawkes Bay	123
Southern North Island & Nelson and Marlborough & Canterbury	184
Otago and Southland	338
Total	**1175**

Fleet Size and Composition

The respondents' fleet sizes varied from one vehicle to over one hundred vehicles. The distribution of fleet sizes is shown in Figure 1. As can be more than half the fleets had 15 or fewer vehicles but there were also some quite large fleets.

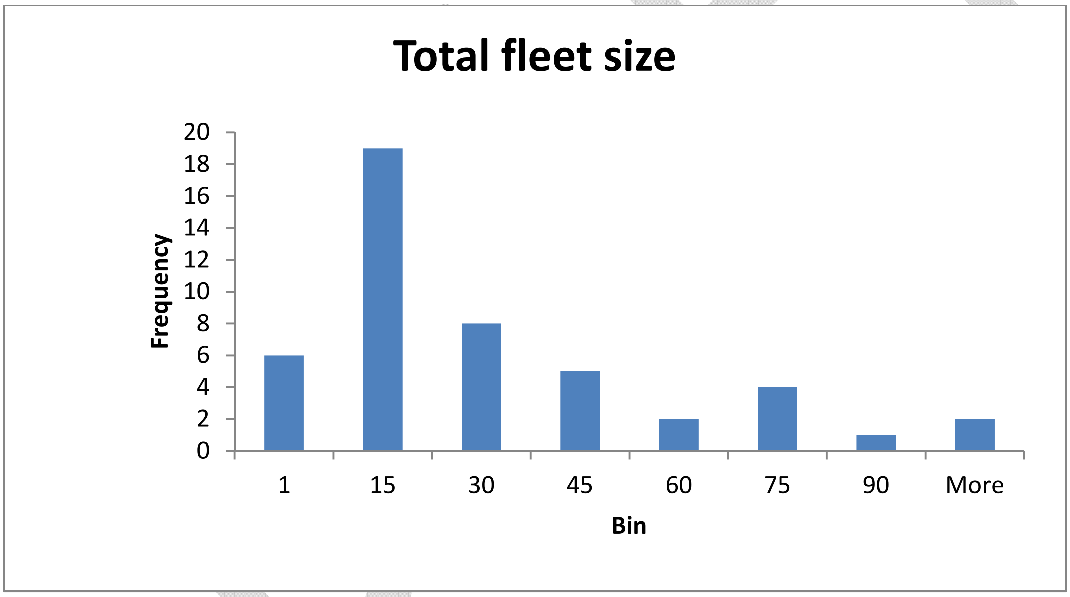

Figure 1. Distribution of fleet sizes among respondents.

There was some confusion over the how to respond to the next two questions relating to the number of 50MAX and HPMV (not 50MAX) vehicles in their fleet. This confusion came to light when it was found that for three respondents, the total of the number of 50MAX vehicles and the number HPMV vehicles was greater than the total number of vehicles in their fleet. These respondents were contacted to explain their responses which they did.

In formulating the questions we anticipated that each vehicle in a fleet would be classified as either a standard vehicle or a 50MAX vehicle or an HPMV depending on the type of RUC licence being purchased for that vehicle. This is consistent with how the analysis of the RUC purchase data was undertaken. If an operator was purchasing RUCs for a vehicle to operate at weights above 50 tonnes, then the vehicle was considered to be an HPMV and not a 50MAX vehicle. However, the respondents who were contacted had some vehicles which had been issued with both a 50MAX permit and an HPMV permit. It is not possible to purchase RUCs for a vehicle at different weights so the RUCs for these vehicles were purchased at HPMV rates but the vehicles were operated in both HPMV mode and 50MAX mode depending on what work was available for them and which routes they were operating on. Thus the operators counted these vehicles as both 50MAX vehicles and HPMVs. Although this issue was identified for the three operators whose numbers of 50MAX vehicles and HPMVs were greater than their total fleet size, it is quite likely that other operators used the same rationale in determining the vehicle numbers in the 50MAX and HPMV categories. However, there is no way of determining the extent that operators used this interpretation without redoing the survey.

Comparing this data to the analysis of the RUC purchase data, we would expect the HPMV data to be directly comparable because the vehicles are required to purchase HPMV RUCs, but the 50MAX numbers in the survey will be an over-estimate because, as well as all the 50MAX only vehicles, they also include some HPMVs that operate as 50MAX vehicles some of the time.

Based on the survey responses the distribution of 50MAX fleet sizes is as shown in Figure 2 and the distribution of HPMV fleet sizes is as shown in Figure 3.

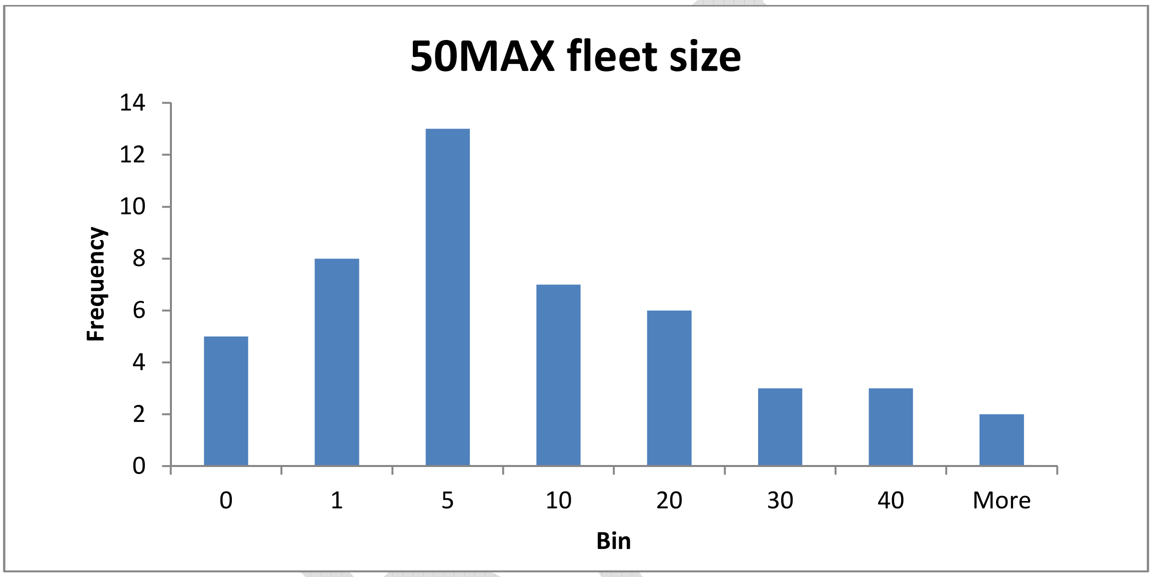

Figure 2. Distribution of 50MAX fleet sizes among respondents.

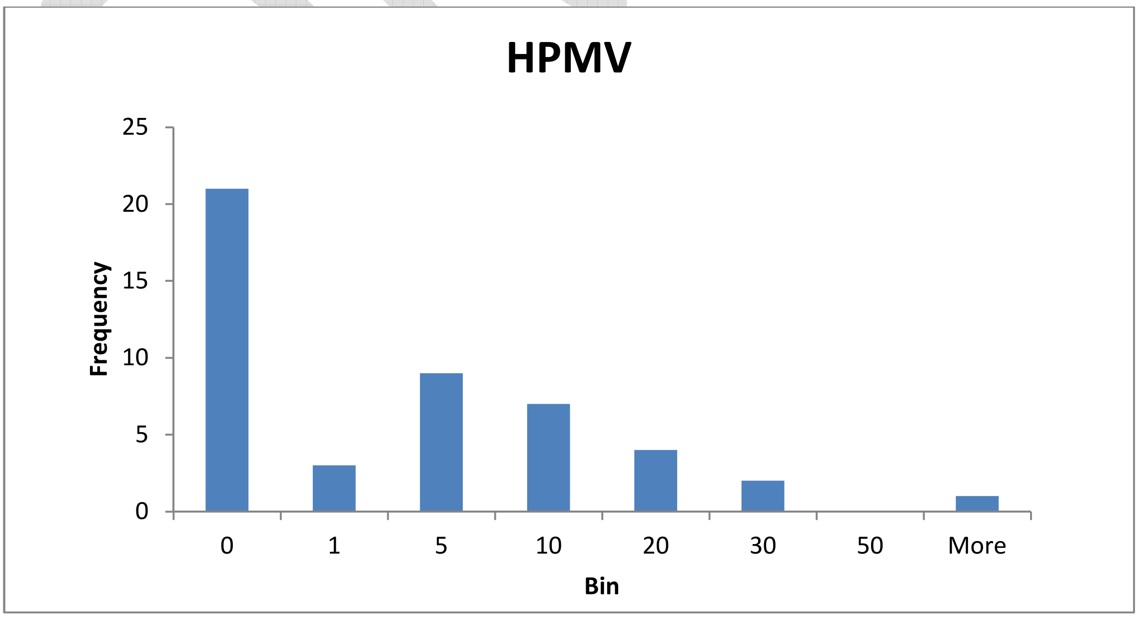

Figure 3. Distribution of HPMV fleet sizes among respondents.

When we look at the regional distribution of 50MAX vehicles and HPMVs we see the results shown in Table 3 and Table 4. Note that as discussed previously, some of the HPMV vehicles shown in Table 4 are also included in Table 3 and thus, when comparing with the RUC purchase data, Table 3 will over-estimate the number of 50MAX vehicles. Table 5 shows the number of HPMV log transport vehicles in 2016 identified through the analysis of the RUC purchase data. Of these, the 4-axle truck and trailer combinations purchasing RUCs for 44t-50t can be expected to be 50MAX vehicles and all of the others are HPMVs but not 50MAX. The percentage values are obtained by using the data for the total number of logging full trailers in the fleet. If we eliminate the 50MAX vehicles then we see that the RUC data indicates that 20.3% of the fleet are HPMVs not 50MAX. This is very similar to the value obtained from the survey shown in Table 4. However, the data for 50MAX vehicles is much less consistent. If we assume that all of the 4-axle truck and 5-axle trailer combinations shown in Table 5 were counted as 50MAX vehicles as well as some of them being counted as HPMVs, the total number of 50MAX vehicles in the fleet in 2016 was 433 which represents 21.6%. This is only just over half the values shown in Table 3. In fact, the number of 50MAX vehicles reported by the survey which represents just over half the fleet is greater than the total number of 50MAX vehicles indicates by the RUC purchase data.

Some differences are to be expected because the survey data reflects 2017 while the RUC purchase data is based on 2016. Furthermore the survey sample is not random but is self-selected which may have resulted in some bias towards operators who use 50MAX vehicles more extensively. The topic of the survey was 50MAX and HPMV use and thus operators who don't use 50MAX vehicles and HPMVs may have felt that it did not apply to them and therefore did not respond.

Table 3. Regional distribution of surveyed 50MAX vehicle numbers.

Region	Number of Vehicles	Percentage of total fleet
Northland	81	36.7%
Central North Island	143	46.3%
East Coast & Hawkes Bay	48	39.0%
Southern North Island & Nelson and Marlborough & Canterbury	42	22.8%
Otago and Southland	150	44.4%
Total	**464**	**39.5%**

Table 4. Regional distribution of surveyed HPMV numbers.

Region	Number of Vehicles	Percentage of total fleet
Northland	26	11.8%
Central North Island	143	21,4%
East Coast & Hawke's Bay	28	22.8%
Southern North Island & Nelson and Marlborough & Canterbury	98	53.3%
Otago and Southland	33	9.8%
Total	**251**	**21.4%**

Table 5. 2016 HPMV log truck vehicle numbers from RUC purchase data.

	3-axle truck and 4-axle trailer	4-axle truck and 4-axle trailer		4-axle truck and 5-axle trailer			Total
	44t – 48t	44t – 48t	48t – 53t	44t – 50t	50t – 54t	54t – 58t	
Numbers	2	236	32	295	112	26	**703**
Percentage	0.1%	11.8%	1.6%	14.7%	5.6%	1.3%	**35.0%**

To investigate the question of how many new 50MAX vehicles and HPMVs entered the fleet between 2016 and 2017 we e-mailed all the significant log trailer manufacturers and asked them if they could tell us the number of 5-axle trailers that they produced for each of the last three years. The number of manufacturers who responded to this request was disappointingly low but did include the largest manufacturer and so the trends indicated should be reasonably accurate.

The manufacturer survey indicated that the number of new 5-axle trailers in 2017 is already just larger than the number of new 5-axle trailers built in 2016. The RUC purchase data shows that from 2015 to 2016 the number of 5-axle trailers increased by 154. Thus we would expect that between 2016 and 2017 a similar sized increase will have occurred. The number of HPMVS with 4-axle trailers has remained approximately constant. Table 5 shows that in 2016 there were 433 5-axle trailer combinations in the fleet. Increasing this by 154 brings the number of vehicles up to 587. This is now significantly larger than the 464 vehicles reported in the operator survey but still less than might be expected given that the survey respondents represent 53% of the total fleet. This does suggest that operators with few or no 50MAX and/or HPMVs did not respond to the survey, possibly because they felt it did not apply to them.

The regional differences in the survey data are interesting. The Northland and Otago and Southland regions both have a close to average uptake of 50MAX vehicles but a low uptake of other HPMVs. The combined Southern North Island, Nelson and Marlborough and Canterbury region on the other hand has a very high uptake of HPMVs and a lower uptake of 50MAX vehicles. Some of the 50MAX vehicles are actually HPMVs that are also being operated at lower weights on routes that are not HPMV capable. Note that these three regions were combined to preserve the anonymity of the respondents. There are some differences between the three regions but the general finding of a high HPMV use and a lower 50MAX use applies to all three. The final two regions of Central North Island and East Coast/Hawke's Bay are close to the national average for HPMV use. East Coast/Hawke's Bay are also about average for 50MAX use while the Central North Island is a bit above average for 50MAX use.

Operator Perceptions on 50MAX Use

Operators were asked to comment on whether the proportion of 50MAX vehicles in their fleet is:

- Higher than they would like
- About right
- Lower than they would like

The "higher than they would like" option was intended to capture the situation where operators felt that they had over-invested in these vehicles and were unable to fully utilise them or to operate them profitably. This situation, of course, is undesirable not only for the individual operator but also for the industry as it undermines the potential gains from increased uptake. Fortunately there was only one operator who responded this way. This operator is based in the Central North Island and the reason given was that "too many off-highway roads are not suitable for 50MAX vehicles"

21 operators responded that their number of 50MAX vehicles was about right; 24 operators responded that their number of 50MAX vehicles was lower than they would like and one operator left this response blank. Thus the responses were approximately evenly split between these two options. There were no significant regional differences in the split of responses. The possible exception of Northland where eight

respondents said “about right” and only three said “lower than they would like” but even this is not statistically significant.

Five options were given for operators to indicate why they felt that their number of vehicles was about right. Respondents could tick more than one option. The options were:

1. Not enough off-highway roads suitable for 50MAX vehicles to justify having more
2. Not enough on-highway roads suitable for 50MAX vehicles to justify having more
3. Need a mix of vehicle configurations for flexibility to cover the range of transport tasks
4. Normal vehicle replacement programme means that the change in proportions is gradual
5. Other:

Of the 21 respondents, fourteen selected option 3, seven selected option 4, six selected option 1 and six selected option 2. Only four selected option 5. Two of these were small operators whose entire fleets were already 50MAX and one was a larger operator whose fleet was largely HPMVs operating at higher weights than 50MAX. So for these three the comments were simply an explanation of why their 50MAX fleet was the size it was. The fourth respondent said that the “customer wants all the savings”, the implication being that there is insufficient financial incentive to invest in more 50MAX vehicles.

Similarly six options were given for operators to indicate why they felt that their number of vehicles was less than they would like. Respondents could tick more than one option. The options were:

1. Too many off-highway roads are not suitable for 50MAX vehicles
2. Too many on-highway roads are not suitable for 50MAX vehicles
3. Capital costs are too high
4. 50MAX vehicles are not profitable enough
5. Concerns about the safety of 50MAX vehicles
6. Other:

There were nine respondents who selected option 1 and eight who selected option 2. Five of those selected both options. These were mainly the North Island respondents. Six respondents selected option 3 and three respondents selected option 4. Only one of these respondents selected both. Reassuringly no-one selected option 5. There were ten responses for option 6 which were all different. Six of them were related to vehicle replacement issues. One of these indicated a lack of supply of vehicles. The others varied from not being able to afford to upgrade through to all replacement and new vehicles are 50MAX. The remaining four responses were:

- Not enough skilled drivers
- Good access for H95 so more profitable
- Local Council costs exorbitantly high
- Southland district council

The first of these is an important issue but it has not be raised by anyone else. The second is slightly odd as a reason for not having enough 50MAX vehicles. Clearly if the operator can run his 9-axle truck and trailer combinations at weights above 50 tonnes (H95) this is a sensible thing to do but it doesn’t mean that he has too few 50MAX vehicles. He could have too few HPMVs. The last two responses are also more likely to relate to HPMVs rather than 50MAX vehicles although the last one may indicate that the operator believes that there are too many routes excluded from 50MAX access because of bridge restrictions in Southland.

Operator Perceptions on HPMV (not 50MAX) Use

The questions relating to HPMV use followed the same structure as those for 50MAX use in the previous section. Again only one respondent said that their number of HPMVs was higher than they would like it to be. The reasons given were “Too many off-highway roads are not suitable for HPMV vehicles” and “Too many on-highway roads are not accessible for HPMV vehicles”. This operator is also from the Central North Island but it is not the same operator as the one who said that they had too many 50MAX vehicles.

Nineteen (40%) respondents said that their number of HPMVs was about right. Of these, two said that there were not enough suitable off-highway roads to justify more HPMVs and three said that there were not enough suitable on-highway roads to justify more HPMVs. Eleven said that they needed a mix of vehicle configurations for flexibility to cover the range of transport tasks and three said that the "normal vehicle replacement programme means that the change in proportions is gradual". There were five respondents who chose the "Other" option. Three of these were simply pointing out that they were small operators. Of the other two, one said that he only had one route that was 50MAX and not HPMV while the other said that HPMV was no advantage unless it was 50MAX. The first respondent is from the Central North Island while the second is from Northland. Regional differences may well explain the contradictory nature of these two responses.

Twenty three (49%) of respondents said that their number of HPMVs was less than they would like. Of these, six said that too many off-highway roads are not suitable while nine said that too many on-highway roads were not suitable. Only one respondent chose both options. Three respondents said that the capital costs are too high and one also said that HPMVs are not profitable enough. Again no respondents had any concerns about the safety of HPMVs. Eleven respondents chose the "Other" option. Six of these raised issues regarding the permitting process and dealing with local councils. The complaints were primarily about the process being difficult and time-consuming with only one respondent complaining about the expense. Four of the responses were explanatory regarding fleet replacement with two of these saying that all new vehicles would be 50MAX/HPMV and two indicating that they were unable to upgrade at present. The final respondent indicated a shortage of skilled drivers. This is the same respondent who made this comment for 50MAX vehicles.

Four respondents gave no response to the question of whether their number of HPMVs is appropriate but then did provide reasons for their answer. These were all relatively small operators with no HPMVs in their fleet. Three of them were from Northland and one was from East Coast. Two of them said that "too many on-highway roads are not accessible by HPMVs", one said that he didn't require any, while the other said that it was better to operate at 45 or 46 tonnes because the tolerances for mistakes was better.

Future Directions

The next few questions related to the operators' views of the future trends for 50MAX and HPMVs and the factors influencing those trends. The first two questions asked whether operators expected the proportion of 50MAX and HPMVs in their own fleets to reduce, stay the same or increase over the next three years.

For 50MAX vehicles, one operator said "reduce", 13 operators said "stay the same" and 33 operators said "increase". Note that the operator who said "reduce" also said that the proportion of HPMVs would "increase" so his expectation is that he will move from 50MAX vehicles to HPMVs presumably because he expects more routes to become available. There are no obvious significant regional differences in the responses to this question.

For HPMVs, three operators said "reduce", 17 operators said "stay the same" and 25 operators said "increase. Two operators did not answer this question. For this questions there were regional differences. For the country as a whole 53% of operators said "increase". For Northland only 27% said "increase" and for Hawke's Bay and East Coast only 20% said "increase". On the other hand, for the Central North Island, 79% said "increase" and for the Southern North Island, Nelson and Marlborough and Canterbury combined group, 100% said "increase".

The next two questions asked whether there are any issues with the operation of 50MAX vehicles and HPMVs. These questions did not have multi-choice responses so operators could write whatever they liked. For 50MAX vehicles, 28 respondents said "No" or "N/A" or entered no response. There was also one "not really". Six operators identified issues with off-highway access. Nine operators identified issues with on-highway access. Two of these had issues with both off- and on-highway access. Of the remaining five, two said that they needed to keep a mix of standard and 50MAX vehicles for flexibility. This suggests an issue with access but this is not explicitly stated. Two of the remaining three indicated a lack of profitability with 50MAX units while the third said that the "extra payload was a bonus" which effectively contradicts the other two. The only obvious regionally-based response was the issue with on-highway road access where five of the nine respondents were from the Hawke's Bay and East Coast combined region.

For HPMVs, 26 respondents said "no", "no issues", "pass" or entered no response. One respondent simply said that their uptake was increasing as more routes become available so this is effectively also a "no issues". Eight responded that difficulties with the permitting process and its complexity were the issue. Ten respondents identified issues with on-highway road access. Two respondents indicated issues with off-highway road access. One of the respondents who identified access as an issue also said that the "customer gets the savings". There are some regional differences in the responses. Overall 21% of respondents identified on-highway access as an issue. For Otago and Southland it was 50% of respondents while for Northland and for the Central North Island it was only one respondent each which is less than 10%. On the other hand, the issues were the permitting process were almost entirely from respondents in Northland and the Central North Island.

The next question asks whether there are any issues with permitting that are influencing the operators' decisions of whether to use HPMVs. A number of the respondents had already raised permitting as an issue in their responses to the previous question. 25 respondents (53%) answered in the negative or did not answer. Of the 22 respondents (47%) who had issues, the most common complaint is the time taken to get a permit (nine respondents). The second most common complaint (five respondents) is the complexity of the process and the final permit making it confusing for drivers. Two respondents complained about the cost. Four respondents raised the issue of too many route restrictions still existing but this is primarily an issue relating to the operation of HPMVs rather than the permitting process. There were no obvious significant regional differences in the number of operators who had issues with the permitting process.

The next two questions asked what steps that the forest owners could take that would increase the uptake of 50MAX and HPMVs respectively. For 50MAX vehicles 18 respondents (38%) answered in the negative or did not enter a response. Sixteen respondents (34%) said that the forest owners should ensure that the off-highways forestry infrastructure is improved to accommodate 50MAX vehicles. Suggestions included bigger turnaround areas at skid sites, lower gradients and better construction. Five respondents (11%) suggested that the forest owners should be more pro-active in lobbying and collaborating with local councils to upgrade their infrastructure. Of the eight remaining responses, three related to operational issues.

- "ensure the log cut is correct"
- "make sure gangs have suitable lifting equipment"
- "utilise the 50max units properly"

and two related to financial rewards:

- "reward the significant investment we make. We don't want all the extra revenue, it's got to be fair."
- "longer term need a 5-8 year contract".

The other three responses did not include any realistic practical steps.

For HPMVs the responses were quite similar. Twenty responses (43%) were negative. Thirteen responses (28%) said that upgrading of forestry roads and skid sites is needed. Six responses (13%) suggested lobbying local councils to improve access and upgrade infrastructure. Of the eight remaining responses, the three operational issues listed above were repeated and the longer terms contracts suggestion was also repeated. The other four responses did not include any realistic practical steps.

The final survey was an open-ended invitation to make suggestions or comments regarding the use of 50MAX and HPMVs to the forest owners. Thirty three respondents entered "no", "nil" or nothing. Sorted by theme the 14 responses that were received were:

1. They need to focus on supporting the lower height safer loads, yes there is more payload but this comes at a cost, one of our forests as an example the difference between a 50 ton max and a standard unit over a 235 day year is 111 loads, this is less trucks on the road, safer to the public, environmentally friendly and assisting the driver shortage, not to cart more for the forest company at a lesser KM rate...

2. Make sure the rate for carting 50MAX and HPMVs is viable for the truck owner as well as the forest owners, the truck owner is taking most of the risk - Financially in investing in a added cost of putting these trucks on and extra wear and tear on the truck as well as extra fuel, H&S in carting a larger load - a higher load which increases the risk of roll overs.
3. there needs to be more in it for the operator not just rate reduction
4. Yes, we need higher cartage rates please. ;-)
5. have the moral integrity to pay the carrier in full for his investment in equipment by way of rates, not expect to cop a discount on the back of the operator's expense.
6. share the rewards, and help build relationships with RCA's
7. More pressure on councils
8. To work with district council and other stake holders on timing and roading requirements well in advance of harvesting so all stake holders are well prepared when harvesting commences
9. Many rural roads will need improvement work to get logs out, particularly in the Waitomo / Taumarunui area where there are a lot of woodlot and forestry jobs coming on line. Cost of compliance for a small operator is also an issue, there is such a constant flow of amendments and alterations to keep up with, as well as the initial application process.
10. better off-highway roading is required for traction purposes
11. Make sure your operations are suited to the use of HPMVs especially those heavier than 50MAX (54 ton plus)before allowing their introduction to your operation
12. The 50MAX are the future, let's all work together to ensure we longer lower trucks, it's no fun coming out of road having to take 4 bites at a corner loaded in the mud & porridge. Putting river rock on the roads, is ridiculous as it turns straight to porridge, the mud comes straight through. We also have drivers that have no idea they dig the roads up, gear after gear, thrashing off, when they could easily take their time, don't blow through the gears, just digging holes, so we too can understand the forest owners position, they cannot keep fixing roads idiots keep wrecking either. It is just heartbreaking when the same wrecker gets sent in first every time, then never comes back. leaving everyone else to try & work around the mess they have made. A bit of brain matter all around would work well.
13. longer cuts are needed in general. this reduces time spent loading and unloading at destination and this in turn adds to the overall fleet efficiency to be gained operating 50 MAX units
14. we need to be doing more for less, with the increased in harvest we need more HPMV/50Max units operating in the rural roading network.

The first six of these relate to cartage rates and a feeling by the operators that they are not receiving their share of the benefits from more productive vehicles. Response number 6 and the three following responses all relate to improving the standard of rural roads through better collaboration with local councils. The next three responses after that relate to improving the condition of the off-highway roads to better accommodate these vehicles. The second to last response relates to operational practices while the last one is more of a comment than a suggestion.

SUMMARY AND DISCUSSION

The operator survey response was very good with respondents representing about half the log transport fleet. There were respondents from all regions except West Coast although some regions were represented by only a very small number of respondents. For reporting purposes the responses from some of these smaller response regions have been combined with those of neighbouring regions to maintain the anonymity of the respondents.

The reported vehicle numbers for 50MAX vehicles are somewhat higher than what was expected from the analysis of the RUC purchase data. In part this was because of how the question was interpreted. In the analysis of the RUC purchase data a vehicle was classified as either 50MAX or HPMV depending on the RUC vehicle type specified. A vehicle could not be both an HPMV and a 50MAX vehicle. It was a case of either/or. However, many operators have vehicles that have HPMV permits and purchase HPMV RUCs but also operate as 50MAX vehicles when necessary. In responding to the survey some operators (the number is unknown) counted these vehicles as both 50MAX vehicles and HPMVs and thus the operator survey over-estimates the number of 50MAX vehicles when compared to the RUC purchase data analysis.

Although this inconsistency is unfortunate, the main purpose of the survey was to identify regional differences and understanding the factors influencing operator decisions on using HPMVs and 50MAX vehicles and these aspects of the survey are not affected.

Looking at the proportions of 50MAX and HPMVs in the regions, the most obvious outlier is the combined Southern North Island, Nelson and Marlborough and Canterbury region which has a significantly higher uptake of HPMVs and a lower uptake of 50MAX vehicles than other regions. The balance between HPMVs and 50MAX is logical because if you have an extensive network of HPMV routes available, then there is no point in running the vehicles at the lower 50MAX weights. Somewhat the reverse situation applies in Otago and Southland and in Northland where the proportion of HPMVs is low but the proportion of 50MAX vehicles is similar to other regions. This suggests that there are relatively few HPMV routes that are usable by logging trucks in those two regions.

Overall the level of uptake of 50MAX vehicles and HPMVs is quite high. 50MAX vehicles were only introduced just over four years ago and could access part of the network. The proportion of the network that is accessible to 50MAX has progressively and is now quite extensive. However, with trailers having an expected life of 15 years or more, the uptake is clearly well ahead of normal replacement rates. For HPMVs, the critical factor is access to the network. This varies significantly from region to region.

The next series of questions asked operators whether the proportions of HPMVs and 50MAX vehicles in their fleets was “higher than they would like”, “about right” or “lower than they would like” and then followed this up with questions asking why they responded the way that they did. It should be noted that these questions are about the operator’s perception rather than any absolute objective assessment. For example, it is quite possible that one operator with a certain proportion of HPMVs would say that the numbers are “about right” because their vehicles are well-utilised and there are relatively few occasions when opportunities are missed because there is no vehicle available while another operator in the same region with same proportion of HPMVs would say that their number of vehicles is “lower than they would like” because they believe that there are many other routes in the region that could be opened up for HPMVs and the number of vehicles should be higher.

Only one operator said that their proportion of 50MAX vehicles was “higher than they would like” and one operator said that their proportion of HPMVs was “higher than they would like”. These were different operators but both were from the Central North Island. In both cases they said that “too many off-highway roads were not suitable…” while the HPMV respondent also said that “too many on-highway roads are not accessible…”. This response would be of concern if it was widespread because it implies that these operators feel that they have over-invested in the higher productivity vehicles. However, because this response is limited to only two operators out of 47, it is probably not a major issue. The forest owners should be wary of encouraging operators to increase the numbers of 50MAX and HPMVs in their fleets beyond the levels that can be sustained by the projected log harvest.

The remaining respondents were reasonably evenly split between "about right" and "lower than they would like" with slightly greater number choosing the latter option. This was similar across both vehicle types. There were no significant regional differences in these responses. In the questions asking the reasons for their responses, the operators were given a number of specific options as well as an open-ended option allowing them to give a reason that was not listed. Operators were not limited to a single response; multiple reasons could be given.

Of the respondents who indicated that their vehicle numbers were "about right", over half for both vehicle types said that this was because they "Need a mix of vehicle configurations for flexibility to cover the range of transport tasks". For 50MAX vehicles, a significant proportion of respondents said that there are not enough suitable on-highway roads and that there are not enough suitable off-highway roads to justify having more of these vehicles. Each of these options was selected by 33% of the respondents. For HPMVs a smaller proportion (16% and 11% respectively) of respondents gave these two reasons.

For the respondents who indicated that their HPMV and 50MAX vehicle numbers were "lower than they would like", the two most common reasons given were "too many off-highway roads not suitable…" and "too many on-highway roads not suitable". The levels of these responses were similar for the two vehicle types but for HPMVs there was slightly more emphasis on the "on-highway" issue. The capital cost of the vehicles was an issue for a number of respondents and more so for 50MAX vehicles than HPMVs. Presumably this is because the greater productivity gains for HPMVs warrant the additional capital investment while the gains from 50MAX vehicles are more marginal. "Concerns about vehicle safety" was given as an optional response to this question but no respondents selected it. This is reassuring.

The next series of questions was more future-focussed. The first two questions asked about operators' future intentions with respect to HPMVs and 50MAX vehicles. The final six questions were all open-ended with no optional answers provided. They asked about operational issues, permitting issues, potential interventions by the forest owners and general comments.

For 50MAX vehicles, 70% of respondents believed that their vehicle numbers would increase over the next three years, 28% believed that they would stay the same and one operator thought that they would reduce. However, the operator who said that they would reduce was expecting his number of HPMVs to increase and thus he was anticipating a move from 50MAX to HPMV operations rather than an overall reduction in high productivity vehicles. There were no obvious regional differences in these responses

For HPMVs, 53% of respondents believed that their vehicle numbers would increase while 36% believed that they would stay the same. However, 6% believed that they would reduce and 4% did not answer this question. There were significant regional differences in the responses to this question with Northland and Hawke's bay/East Coast operators being considerably less optimistic than Central North Island and Southern North Island/Nelson and Marlborough/Canterbury operators.

The next three questions asked about issues with operating 50MAX vehicles and HPMVs and with permitting HPMVs. These questions had open-ended responses with no multi-choice options. Fewer than half the operators entered responses to these questions. The others either did not answer or answered "No" or "No issues" or something similar.

For 50MAX vehicles the two main operational issues were difficulties with on-highway access (9 respondents) and difficulties with off-highway access (6 respondents). Over half the respondents who said issues with on-highway access were from the Hawke's Bay/East Coast region which indicates that this is a particular issue for these regions.

For HPMVs the responses to questions regarding operational issues and permitting issues overlapped and so we should consider them together. On-highway access was raised as issue by a significant number of respondents particularly from Otago and Southland. Interestingly relatively few Northland and Central North Island respondents had issues with on-highway access but almost all of the issues relating to the permitting process came from these regions. Permitting issues included the time taken to get a permit and the complexity of the process and the final permit. Only two respondents complained about permitting costs which suggests that this is not a major issue for most.

The next two questions asked what steps the forest owners could take to increase the uptake of 50MAX vehicles and HPMVs respectively. For both vehicle types, the largest response was for upgrading the off-highway infrastructure to better accommodate the larger and heavy vehicles. Suggestions includes bigger turnaround areas at skid sites, lower gradients and better construction. The second largest response was that the forest owners should be more active in lobbying and collaborating with local councils to upgrade the on-highway infrastructure. There were also a small number of responses relating to operational issues and to financial rewards.

The final question was an open invitation to add any comments or suggestions to the forest owners regarding the use of these vehicles. Again this was an open-ended question with no multi-choice options. Only 14 of the 47 respondents supplied answers to this question. Six of these related to cartage rates so this is the number one issue for those who responded to this question. The general thrust of these responses was that the operators had invested considerable capital and effort into these more productive vehicles but that the economic benefits were not being shared fairly and they were not being adequately rewarded for this investment. Four of the responses suggested that the forest owners need to collaborate more with the local road controlling authorities to improve the standard of the rural roads and three of them related to improving the off-highway infrastructure to better accommodate these vehicles.

The open-ended questions clearly require more effort to respond to than the questions with multi-choice options even when the operator's answer to the multi-choice question is "other" and an explanatory note is required. The multi-choice options help to focus the thought patterns as to the types of answers that might be applicable. However, they also direct and lead the respondent to particular groups of answers. The design of the questionnaire therefore has to aim to include all of the most likely expected answers in the multi-choice list.

Although the open-ended questions did not provide direction on possible answers, the multi-choice answers for the questions prior to them may well have had an effect on the responses. The multi-choice answers for the reasons for current fleet proportions included off-highway and on-highway access limitations. A number of the responses to the open-ended questions also focussed on infrastructure and access. None of the multi-choice answers mentioned cartage rates although there were options for capital costs and profitability for respondents who had fewer vehicles than they would like which are related issues.

CONCLUSIONS

There were 47 respondents to the survey with a total of 1175 vehicles. Based on the size of the fleet estimated from the analysis of the RUC purchase data, this represents 53% of the total national log transport fleet. This is an excellent response rate for an email-based on-line survey.

The survey data indicated a higher proportion of 50MAX vehicles and HPMVs than the analysis of RUC purchase data estimated. There was an issue with some (possibly all) respondents counting the same vehicle in both the 50MAX and HMPV categories when the vehicle operates in both modes. This means that these vehicles are counted twice in survey analysis where they were only counted once in the analysis of the RUC purchase data. Another factor was the timing because the latest RUC purchase data was for 2016 while the survey was undertaken in August 2017. An informal survey of trailer builders showed that the number of 5-axle trailers has probably increased by over 30% in the 2017 year to date. Most operators are expecting the number of 50MAX vehicles and HPMVs in their own fleet to increase over the next three years.

There are some regional differences in the uptake of these vehicles and in future expectations. The combined region of Southern North Island, Nelson and Marlborough and Canterbury had a substantially higher than average uptake of HPMVs and a lower than average uptake of 50MAX vehicles. This indicates good access to HPMV routes in these regions. Northland and Otago and Southland had a substantially lower than average uptake of HPMVs which indicates a lack of access to HPMV routes in these two regions. Central North Island had a little above average uptake of 50MAX vehicles. All other values were close to average.

70% of operators expected their number of 50MAX vehicles to increase over the next three years and there were no obvious significant regional differences in these responses. 53% of operators expected their number of HPMVs to increase over the next three years but this response varied between regions. For Hawke's Bay and East Coast only 20% and for Northland only 27% expected an increase. On the other hand, for the Central North Island, 79% expected an increase while for the Southern North Island, Nelson and Marlborough and Canterbury combined group, 100% expected an increase.

Operators were asked whether their numbers of 50MAX vehicles and HPMVs was too high, about right or too low. Fortunately only one respondent for each vehicle type indicated that numbers were too high. Slightly over half said that their vehicle numbers were too low and slightly under half said that they were about right. For those that said that were "about right" the main reason given was that they needed a mix of vehicle configurations for flexibility to cover the range of transport tasks. For those who said that their vehicle numbers were too few, the main reasons were: "too many off-highway roads not suitable" and "too many on-highway roads not suitable". The responses were about evenly split between these two responses although for HPMVs there were a few more responses for the "on-highway" option.

The final part of the survey contained a series of open response questions on issues with vehicles operations, issues with permitting, steps that the forest owners could take to increase uptake and general suggestions and comments. Fewer than half of the survey participants responded substantively to these questions. The main issues raised were the standard of the off-highway and on-highway infrastructure. On-highway access was particularly an issue for Otago and Southland operators. The permitting process was seen as complex and slow. These responses came particularly from Central North Island and Northland operators. It was suggested that the forest owners should ensure that off-highway infrastructure is suitable for these larger vehicles and that they should be more proactive in collaborating with local road controlling authorities to ensure that the on-highway infrastructure is upgraded to an appropriate standard.

The other significant issue that was raised in the final question on suggestions and comments was cartage rates and financial rewards. The feeling was that the financial benefits of these more productive vehicles are not being shared fairly between the forest owners and the operators. This issue was raised by six of 14 respondents. The other 33 survey respondents did not enter any response. This view could be interpreted as representing 43% (six out of 14) or 13% (six out of 47) of operators. The reality is probably somewhere in between these two figures.

APPENDIX

Log Transport Operator Survey - HPMVs and 50MAX

This survey is being conducted on behalf of the New Zealand Forest Owners Association. Its purpose is to understand the level of uptake of HPMV and 50MAX vehicles within the industry and to identify barriers to greater uptake.

*Required

1. **Email address** *

2. **What region do you operate in? (if you operate in more than one region, please complete a separate survey form for each region's operations)** *
   Mark only one oval.
   - Northland
   - Central North Island
   - East Coast
   - Hawkes Bay
   - Southern North Island
   - Nelson and Marlborough
   - West Coast
   - Canterbury
   - Otago and Southland

3. **In total how many logging trucks do you operate in this region?** *

4. **How many of these are currently operating as 50MAX vehicles?** *

5. **How many of these are currently operating as HPMVs (not 50MAX)?** *

6. **Is the proportion of 50MAX vehicles in your fleet in this region?**
   Mark only one oval.
   - Lower than you would like it to be *Skip to question 6.*
   - About right *Skip to question 8.*
   - Higher than you would like it to be *Skip to question 7.*

7. **What are your reasons for not having more 50MAX vehicles?**
Tick all that apply.

- [ ] Too many off-highway roads are not suitable for 50MAX vehicles
- [ ] Too many on-highway roads are not suitable for 50MAX vehicles
- [ ] Capital costs are too high
- [ ] 50MAX vehicles are not profitable enough
- [ ] Concerns about the safety of 50MAX vehicles
- [ ] Other: ______________________________

Skip to question 9.

8. **What are the reason(s) that you consider that you have too many 50MAX vehicles?**
Tick all that apply.

- [ ] Too many off-highway roads are not suitable for 50MAX vehicles
- [ ] Too many on-highway roads are not suitable for 50MAX vehicles
- [ ] 50MAX vehicles are not profitable enough
- [ ] Concerns about safety of 50MAX vehicles
- [ ] Other: ______________________________

Skip to question 9.

9. **What are the reason(s) that you consider that your proportion of 50MAX vehicles is about right?** *Tick all that apply.*

- [ ] Not enough off-highway roads suitable for 50MAX vehicles to justify having more
- [ ] Not enough on-highway roads suitable for 50MAX vehicles to justify having more
- [ ] Need a mix of vehicle configurations for flexibility to cover the range of transport tasks
- [ ] Normal vehicle replacement programme means that the change in proportions is gradual
- [ ] Other: ______________________________

Skip to question 9.

10. **Is the proportion of HPMV (not 50MAX) vehicles in your fleet in this region?** *Mark only one oval.*

- ( ) Lower than you would like it to be — *Skip to question 10.*
- ( ) About right — *Skip to question 12.*
- ( ) Higher than you would like it to be — *Skip to question 11.*

11. **What are your reasons for not having more HPMV vehicles?**
Tick all that apply.

- ☐ Too many off-highway roads are not suitable for HPMV vehicles
- ☐ Too many on-highway roads are not accessible by HPMV vehicles
- ☐ Capital costs are too high
- ☐ HPMV vehicles are not profitable enough
- ☐ Concerns about the safety of HPMV vehicles
- ☐ Other: ______________________

Skip to question 13.

12. **What are the reason(s) that you consider that you have too many HPMV vehicles?**
Tick all that apply.

- ☐ Too many off-highway roads are not suitable for HPMV vehicles
- ☐ Too many on-highway roads are not accessible for HPMV vehicles
- ☐ HPMV vehicles are not profitable enough
- ☐ Concerns about safety of HPMV vehicles
- ☐ Other: ______________________

Skip to question 13.

13. **What are the reason(s) that you consider that your proportion of HPMV vehicles is about right?**
Tick all that apply.

- ☐ Not enough off-highway roads suitable for HPMV vehicles to justify having more
- ☐ Not enough on-highway roads accessible by HPMV vehicles to justify having more
- ☐ Need a mix of vehicle configurations for flexibility to cover the range of transport tasks
- ☐ Normal vehicle replacement programme means that the change in proportions is gradual
- ☐ Other: ______________________

14. **Over the next three years do you expect the proportion of 50MAX vehicles in your fleet in this region to**
Mark only one oval.

- ◯ Increase
- ◯ Stay the same
- ◯ Reduce

15. **Over the next three years do you expect the proportion of HPMV vehicles in your fleet in this region to:?**
Mark only one oval.

- Increase
- Stay the same
- Reduce

16. **Are there any issues with the operation of 50MAX vehicles that are influencing your decision on whether to use them or not?**

17. **Are there any issues with the operation of HPMV vehicles that are influencing your decision on whether to use them or not?**

18. **Are there any issues with the permitting of HPMV vehicles that are influencing your decision on whether to use them or not?**

19. **Are there any steps that the forest owners could take that would increase the use of 50MAX vehicles in this region?**

20. **Are there any steps that the forest owners could take that would increase the use of HPMVs in this region?**

21. **Do you have any other suggestions or comments for the forest owners regarding the use of 50MAX and HPMVs?**

☐ Send me a copy of my responses.