

SPECCING TRUCKS FOR PROFIT

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The Road Transport Industry is a 2 Billion Dollar per annum industry. In 1993 1,356 new vehicles with a Gross Vehicle Mass in excess 12 tonne were registered in New Zealand.

Of that number 175 of those vehicles were second hand imports, leaving 1,181 new vehicles registered.

This represents an investment to the industry of some \$200 million or 10% of the annual fleet turnover, not including the trailer fleet and other ancillary equipment.

The economic efficiency of all vehicles to the New Zealand economy and to your business is governed by the efficiency by which each individual operator specs his vehicle.

The potential savings to the New Zealand economy if efficient specifications were maximized is difficult to estimate. It would not be unrealistic to suggest though a 5% savings or maybe perhaps 10% saving was attainable. That small saving relates to a \$100 or \$200 million economic efficiency benefit to the New Zealand economy and to the industry's clients every year.

A new vehicle inefficiently specced at the beginning of its' life remains inefficient for its' life - 5 - 10 years or more. The correct specifications for vehicles or any equipment for that matter is crucial to the New Zealand economy.

How should you go about and what factors affect the speccing of a vehicle to maximise it's return?

THE CUSTOMER

The first factor and the most important factor and the factor that most frequently fails to be recognised is that of the CUSTOMER.

If there isn't a Customer you don't need to buy a Truck.

If you cart your own product then you may be the customer, otherwise the client you cart your product to, is the customer.

In any event there is always a customer.

What are your Customers needs, what does he actually want you to do. Often what your Customer thinks he requires you to do and what he actually requires you to do in practise are different. His requirements can change over time therefore it is important to spend time with your client to glean from him his future requirements so that you can spec a Vehicle that will meet those requirements over the 5 - 10 year vehicle lifespan.

Lack of consultation with your Customer, not providing for his needs will result in either selling your truck and re-equipping prior to the end of the economic life of the vehicle, or a competitor undercutting your price to complete your job. The potential to save costs and maximize profits by addressing your customers needs far outweigh any other potential savings.

APPLICATION

The factors affecting the type of application the specced truck is to complete its' job are:

Operational

Weight vs Bulk

OPERATIONAL determines the type of operation; i.e. logging, Tanker, Linehaul, Dump Truck. Each type of operation has different operational requirements. For example a Logging Truck one way loaded, loads back its' trailer. If it does not load back its' trailer it incurs significant extra costs and fails to maximize its' profits.

WEIGHT VS CUBIC CAPACITY

Once the customers requirements are known, an operator can start determining the most efficient method to complete the work. Will the goods he carries "weigh out" first or "bulk out" first? How can an operator maximize his payload and therefore his revenue?

(a) Weight

Reducing Tare weight to the lowest possible weight without sacrificing vehicle durability and performance will maximize revenue.

A vehicle travelling 200,000km pa on a one way loaded 100kilometre cart can afford to spend \$29.00 to save 1 kilogram of tareweight providing he replaces that kilogram of tareweight saved with payload when loaded.

If the cart is 50kilometres or the vehicle is loaded both directions at 100kilometre cart the operator can afford to spend \$58.00 to save 1 kilogram of tareweight.

These investments in tare weight reduction will provide an increase in profit or return on the investment and are based on Internal Rate of Return calculations.

Tare weight savings will be addressed later in the paper

(b) Cubic Capacity

There are benefits to be gained from cubic capacity when speccing Trucks. Cubic Capacity relates to deck space in terms of length. Increased length means increased cubic capacity - increased revenue and profit.

Increased cubic capacity when speccing vehicles is derived from the type of truck chosen. A cab-over truck will have approximately 1.4 metre shorter cab than a conventional truck and can increase the cubic capacity of a unit by 8-9% and therefore the potential to increase revenue by 8-9%. An example of this in the logging industry is the cartage of two eight point two metre logs. The practical application of the Truck is likely to provide the second largest opportunity to spec a Truck to maximize profits.

DIMENSIONS AND RESTRICTIONS

Dimensions and Restrictions are the parameters by which the government and other roading authorities set to use the roads. They may vary considerably between Highway conditions to Off Road conditions.

The parameters include length, height, width, weight and many more. The regime by which charges are levied or taxed for the use of the Roads are part of the Restrictions imposed.

An operator must be aware of all dimensions and restrictions so that he can maximize his profit by maximizing the dimensions and minimizing the restrictions.

VEHICLE COMBINATION

The next question is what vehicle combination would most efficiently cater for your customers requirements, meet the application, traverse the route and maximize the dimensions and restrictions.

A financial comparison of differing configurations will indicate the most cost effective configurations. There is significant differences in running costs between a 44 tonne 7 axle Truck/Trailer and a 39 tonne A Train. The cost differential can exceed 30cents per running kilometre.

The two most efficient configurations identified when speccing a Truck may have a 6cents per running kilometre differential which if the most efficient configuration is chosen provide up to 3% cost savings and substantial increase in profits.

ROUTES/ROADS

To spec a truck efficiently the routes to be traversed must be analysed and classified; which type of road conditions are experienced and in what proportions:

- Class A Highway conditions - State Highways.
- Class B Highway/Mountain Conditions - Napier/Taupo Rd.
- Class C Off Highway - Kaingaroa Forest Roads
- Class D Off Road - Mungatu Forest Roads.

In addition to the class of road the Maximum Grade Percentage should be considered as that percentage will help determine the important issues of Horsepower, Torque, Differential Ration choice and Gearbox selection. It may be the Maximum Grade is the ramp that is reversed onto to off load. If the gearbox spec has not been

considered (the unloading ramp) frequent clutch repairs may be required

To overspec or to underspec a Truck for the intended road conditions, will reduce its' economic efficiency.

A Truck specced for Class A conditions operating in Class C conditions will have excessive repairs and maintenance costs and a shortened economic life.

A Truck specced for Class D conditions operating in Class A conditions is likely to have excessive tare weight and the capital cost is likely to be excessive reducing profit.

MECHANICAL COMPONENTRY

Operators tend to give reasonable consideration to mechanical componentry without really addressing the profit principles as follows:-

- (a)- Factory Cost is cheapest cost.
- (b)- Benefits should be weighed against costs.
- (c)- Can afford to spend considerable capital dollars to save tareweight to increase payload
- (d)- Enticement of skilled Drivers.
- (e)- Obtain the latest Technology

(a) Factory Cost

Everything that needs to be specced for the Truck should be specced at the time of ordering the Truck. Truck factories survive on economies of scale. They purchase items as Original Equipment suppliers at a substantially reduced cost than can be purchased from a parts outlet.

The labour to put an item, for example an airconditioning unit, in a Truck is virtually negligible compared to the labour cost to have your repair shop complete the job.

The Factory also offers additional warranties on various components such as Engines, Gearboxes, Differentials and Drivelines. For a relatively small additional cost some manufacturers offer 600-700,000 kilometre warranties on component failure.

The Factory costs is always the cheapest cost and should be utilized to the fullest to maximize profit.

(b) Benefits vs Costs

If the Benefits either real or perceived exceed the Costs then there is a profit. Lets consider a simple water temperature warning light. Cost - less than \$50; tareweight - 1 kilogram - and as we calculated before \$29 could be spent to save the weight. It could just be deleted from the specification which would save the cost and the weight. But what are the ramifications of not having a water temperature warning? An engine rebuild costing \$10-20,000. The risk is too great. Sure this is a simplistic example and other componentry can be considerably more difficult to determine. Consider the Benefit/Cost of providing a Driver with an adjustable steering column.

A Benefit Cost analysis is the only method to determine the true profitability of componentry.

(c) Tareweight

As mentioned earlier \$29 of Capital funds can be spent to save 1 kilogram of tareweight providing that tareweight is replaced by payload whilst the vehicle is loaded and assuming it is loaded 50% of its' time.

Where can Component Tareweight reductions be made without incurring additional capital funding?

	<u>Weight Saving</u>
1. One 375litre fuel tank instead of two	350 kg
2. Correct minimum wheelbase and rear overhang specifications	Proportionate to measurements over specced
3. Correct specification 40,000lb diffs when 46,000lb not required	200 kg
4. Deleting Sleeper specifications	324 kg 60" sleeper
5. Correct Tyre specification Example, why use 295/75 Tyres when 275/80 Tyres will meet specifications. 295/75 Tyres are heavier and cost more.	Depending on tyre/ weight comparisons
6. Single Exhaust.	60 kg

Where can component Tareweight reductions be made by incurring additional capital funding?

	<u>Weight Saving</u>
1. Alloy Wheels	75 kg
2. Aluminium Hubs - Rear Axles	54 kg
3. Aluminium Chassis for approved applications	120 kg + depending on chassis length.
4. Use Aluminium Cab Construction	Saving dependent upon what it is being compared with

The Benefit/Cost analysis will determine whether the addition of a sleeper will pay its way. It will pay its' way only if the operator saves hotel charges \$60 per night for 180 nights of the year

Alloy Wheels are only of benefit if they cost less that \$2,200 more than steel wheels.

Alloy Hubs are only of benefit if they cost less than \$1,600 more than steel hubs.

Tare weight saving will provide significant profit increases provided the tare weight is replaced with payload.

(d) The Driver

Everyone knows an owner operator requires "the best" when speccing his truck. Generally he knows why he wants "the best" and that is because he has spent hundreds of thousands of kilometres behind a wheel of a truck and only he can tell you those little things that make the difference between a tough day or an easy day in the driving seat. Operators know that it is becoming more difficult to employ skilled responsible drivers they would wish to entrust a \$300,000 rig.

Competition between operators today is more evident than it ever has been before.

A driver considering employment views the Company equally with the wages he would receive and the third consideration is what sort of truck with trimmings he will be driving.

An unskilled or careless driver can cost an operator its' insurance excess, higher insurance premiums and a substantial period of lost profits while a truck is being repaired after an accident.

Taking that as the Cost, there are considerable Benefits in spending Capital Funds to provide reasonable trimmings to a Truck to entice a good driver.....there is a catch though.

If that driver is not accident free during the life of the vehicle there is a double lose situation:- Extra Cost of Capital and Cost of Accident.

(e) Obtain the Latest Technology

The Truck purchase is a decision you live with for 5 - 10 years.

Technology changes so fast these days it is of prime importance to purchase the very latest technology.

Failure to latch onto the latest in technology reduces the chance of maximizing the efficiencies and maximizing profits.

FUEL IN PERSPECTIVE

Most operators rate fuel as one of the most important ways of reducing costs. It is a relatively low priority when speccing your truck.

Todays electronic engines do not vary greatly in fuel consumption when comparing apples with apples.

Driver trainers claim substantial fuel savings by progressive shifting and driving below your means, additive companies claim savings by using their products, companies claim savings by using their tyres and engine manufacturers claim savings over their competitors.

They all forget about reality. Reality in operating a Truck is about achieving as many kilometres as possible in the 11 hour log book driving time. This is not compatible with driving below your means and maximizing fuel consumption. The reality is on todays fuel costs by saving 0.5 mile per gallon by sloping along

the highway the savings per annum relate to \$3,250 per annum when completing 200,000km per annum or \$1,625 per annum when completing 100,000km per annum.

It goes without saying that these amounts are very small in comparison to achieving an extra load per week or achieving an extra backload every two weeks or meeting the customers needs.

Never the less the savings can be made if the opportunity to slope along the road presents itself.

CAPITAL AND EQUITY

Now that the Truck specification has been finalised the cost of the Truck will finally determine the efficiency of the Truck.

Can the operator afford the price and what is the equity ratio. If the equity ratio is too low the finance company will consider their risk and charge an interest rate reflecting a premium above market rate. That premium is a cost of which the operator should apply the Benefit/Cost formula.

The question is, will it be better to pay extra interest to maximize the efficiency of the Truck or will it be better to purchase a less efficient Truck and obtain the market value interest rate. The only thing that can be said is: "Those operators that maximize their efficiency are the wealthy, smart operators that can and do operate on lower cartage rates with equal or higher profit margins."

SUMMARY

This has been a quick overview of the important issues involved in Truck Specifications for Profit. Those of you out there that expected me to tell you which is the best engine, gearbox, differential or what gauges or suspensions to install or what make of Truck to buy - I am sorry but they are not the important issues that affect the bottom line.

- Profit.

Today we have covered the major issues, the ones that have the greatest impact on profit.

All operators have an obligation to their clients and an obligation as citizens of New Zealand to maximize efficiency within the Road Transport Industry. Unfortunately there is no requirement to operate at a profit. Those that are unprofitable bring the industry to disrepute. New Zealand is a country dependent upon being able to compete internationally. If other competing countries can perform the internal road transport function more efficiently than NZ can, and they do, then our exporters have to be more efficient in other areas to compensate for our Road Transport inefficiencies.

TO MAXIMIZE PROFIT BY EFFICIENT TRUCK SPECIFICATION



