

February 2005

SKILL SHORTAGE ASSESSMENT OCCUPATION: MOTOR MECHANIC

Current situation: Skill shortage

Short term outlook: Skill shortage

Executive summary

1. The Survey of Employers who have Recently Advertised (SERA) has shown that there is currently a shortage of motor mechanics. Only 7 out of 10 vacancies included in the survey were filled within six weeks of being advertised and there was an average of only 1.3 suitable applicants for every mechanic vacancy. This report considers these survey results in the context of trends in the demand for and supply of motor mechanics.

Table 1: employer survey indicators, 2004

	Fill rate	Average number of suitable applicants
Motor Mechanics	72%	1.3
All trades surveyed	41%	0.7

Source: Department of Labour, SERA

2. Employment of motor mechanics declined between 1991 and 2001. A number of factors accounted for this including a greater preference for replacing rather than repairing parts and technological developments that mean that new vehicles require less frequent servicing. While some of these factors may continue to affect future demand, they will be more than compensated for by increases in the size of the motor vehicle fleet and the amount of road travel. Demand for motor mechanics is therefore likely to grow modestly in the near future.
3. The training rate for motor mechanics (a crude measure of the rate at which the supply of fully qualified mechanics can grow through training) is low at 1.4%. It is barely sufficient to compensate for retirements, which occur at a rate of 1.1% per annum. Training levels are unlikely to increase substantially in the next three years, as total enrolments have not grown. The supply of motor mechanics through migration has improved recently and there has been a small net inflow of mechanics in the past three years.
4. The current and future level of training and supply through migration is likely to fall short of new demand (arising from job creation) and replacement demand (arising from retirement and motor mechanics leaving the occupation). This level of training is also unlikely to make an impact on current unfilled vacancies. DoL therefore expects shortages to persist in the short term.

Introduction

The purpose of this report is to investigate shortages of motor mechanics in New Zealand. This report aims to provide an assessment of whether there is a shortage of motor mechanics, the factors contributing to this situation and the outlook for shortages.

Motor mechanics (code 72312 under the New Zealand Standard Classification of Occupations) are skilled tradespeople who inspect, maintain and repair cars and light trucks. Given that more and more new vehicles have integrated electronic systems and complex computers to run them, the work of motor mechanics has evolved from straightforward mechanical repair to understanding how a vehicle's complex components work and interact and working with electronic diagnostic equipment and computer-based technical reference materials. Motor mechanics are now also known as automotive technicians. DoL estimates that there were approximately 14,600 motor mechanics employed in New Zealand in 2003.

A background and technical note to this report is available from DoL. The note provides an overview of the broader Job Vacancy Monitoring Programme, of which this report is an output. It also provides a brief description of the employer survey conducted for this report and explanations of indicators and definitions used in the report.

Demand for motor mechanics

Historical demand

Employment of motor mechanics declined by 1.0% per annum between 1991 and 2001 (table 2). This compares with a decline of 0.2% per annum for all trades and 2.2% growth for all occupations.

Table 2: employment growth of motor mechanics, 1991-2001

	Annual growth in employment		
	1991-1996	1996-2001	1991-2001
Motor mechanics	-0.9%	-1.1%	-1.0%
All trades	0.0%	-0.4%	-0.2%
All occupations	3.2%	1.2%	2.2%

Source: Statistics New Zealand, Census of Population and Dwellings 1991, 1996 and 2001

A number of factors explain the declining demand for motor mechanics over this period, including:

- The expense of repairing many older vehicles was greater than the cost of purchasing new vehicles following the removal of import tariffs in 1998, and the subsequent increasing volumes of imported cars available to New Zealanders.
- A reduction in the price of vehicle parts, leading to the replacement of those parts rather than their repair.
- Technological developments which mean that many vehicles require less frequent servicing and repair.

- The increasingly sophisticated maintenance procedures for modern cars, which have lessened the need for mechanical repair skills and increased the electrical and electronic maintenance required.

Since 2001, data from the Household Labour Force Survey (HLFS) shows that there has been a slight rise in employment of *machinery mechanics and fitters* (the broad category grouping in which motor mechanics fall)¹. See table 3.

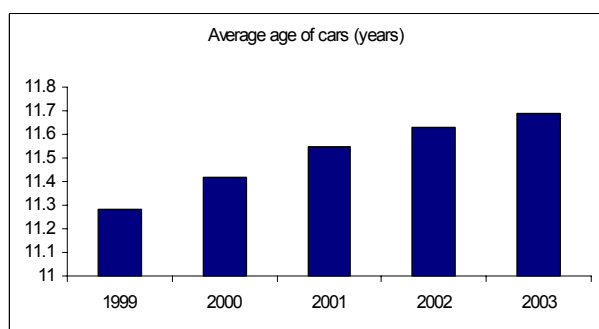
Table 3: employment of machinery mechanics and fitters (000s), 2001-2004 June years

	2001	2002	2003	2004
Machinery Mechanics and Fitters	26.9	27.0	28.0	27.0

Source: Statistics New Zealand, HLFS

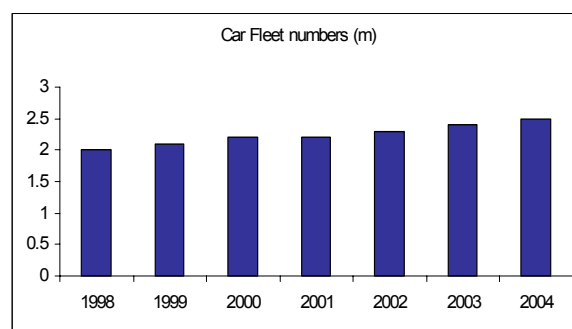
The rise in employment can probably be explained by a steady increase in the number of cars on the road, the ageing of the car fleet (figures 1 and 2), the amount of road

Figure 1: average age of cars in the fleet



Source: Land Transport Safety Authority

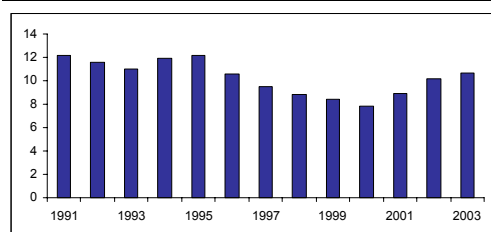
Figure 2: number of cars in fleet (millions), 1998 - 2004



Source: Land Transport Safety Authority

travel conducted and an increase in the number of road accidents. New Zealand has one of the highest rates of car ownership in the world². The number of registered cars is growing at a rate (3%), more than double the rate of growth of the driving age population (1%). Furthermore, data from the (then) Land Transport and Safety Authority (LTSA) shows that the number of crashes has been increasing steadily since 2001, due to the increasing number of vehicles on the road and people travelling more (figure 3).

Figure 3: number of crashes (000s), 1991 - 2003



Source: Land Transport Safety Authority

¹ Due to the close association of the constituent occupations included in this broad occupational group, the trend at this broad level is considered to be reflective of the trend for motor mechanics.

² Transport for New Zealand: overview, Ministry of Transport, April 2002

Future demand

Demand for motor mechanics in New Zealand over the next few years is likely to be influenced by the following factors:

- Significant growth in motor vehicle sales, driven by the strong New Zealand dollar and robust economic growth, and an increase in the number of people in paid employment.
- Increasingly sophisticated motor vehicle technology that will make it more difficult for vehicle owners to do their own car servicing and repair work.

These factors, particularly the strong growth in the fleet size, are expected to counter factors that tend to reduce demand for motor mechanics. The DoL therefore concludes that there will be a modest increase in demand for motor mechanics over the next one to two years.

Summary

Employment of motor mechanics declined between 1991 and 2001. A number of factors accounted for this, including a greater preference for replacing rather than repairing parts, and technological developments that mean that new vehicles require less frequent servicing. While some of these factors may continue to affect future demand, they will be more than offset by increases in size of the motor vehicle fleet and the amount of road travel. Demand for motor mechanics is therefore likely to grow modestly in the near future.

Supply of motor mechanics

Training – National certificate (Level 4) qualifications and equivalent

This section investigates the growth in supply of *fully qualified* motor mechanics through training. It considers three sources of supply:

1. The award of the National Certificate in Motor Industry (Automotive Engineering) Level 4 by the Motor Industry Training Organisation (MITO). This is the nationally recognised qualification for motor mechanics which is designed by MITO to meet the needs of employers of motor mechanics. It takes an average of three years to achieve.
2. The award of the National Certificate in Motor Industry (Automotive Engineering) Level 4 by other providers such as polytechnics.
3. The award of qualifications apart from national certificates which are deemed to be equivalent to the national certificate in terms of level and number of credits.

Table 4 shows that the national certificate awarded by MITO accounts for the majority of qualifications awarded at this level. The number of trainees achieving this qualification was more or less constant between 2002 and 2003. There has also been little change in the number of total enrolments so the number of achievements is unlikely to grow in the next few years. There were no non-national certificate qualifications at the equivalent level of the national certificate awarded over this time period. A list of national certificate level 4 and equivalent qualifications and the proportion of trainees enrolled for these qualifications is provided in Appendix 1.

Table 4: number of trainees achieving the National Certificate in Motor Industry (Automotive Engineering) Level 4

	National Certificate in Motor Industry (Automotive Engineering) Level 4 (MITO)	National Certificate in Motor Industry (Automotive Engineering) Level 4 (Other providers)	Total
2001	115	Not available	
2002	186	28	214
2003	172	30	202

Source: Motor Industry Training Organisation (MITO), Tertiary Education Commission

Table 5: enrolments for the National Certificate in Motor Industry (Automotive Engineering) Level 4

		National Certificate in Motor Industry (Automotive Engineering) Level 4 (MITO)	National Certificate in Motor Industry (Automotive Engineering) Level 4 (Other providers)	Total
2001	Total enrolled	1342	Not available	
	New enrolments	446	Not available	
2002	Total enrolled	1337	681	2018
	New enrolments	562	Not available	
2003	Total enrolled	1288	146	1434
	New enrolments	536	Not available	

Source: Motor Industry Training Organisation (MITO), Tertiary Education Commission

Training rate indicators are given in table 6. A comparison of the number of trainees achieving the national certificate (NC level 4) in automotive engineering and equivalent qualifications with the number of motor mechanics employed yields a training rate of 1.4%. This indicator provides a crude measure of the rate at which the supply of fully qualified motor mechanics can potentially grow through training³. This training rate for motor mechanics is lower than the average training rate of 1.8% for all trades analysed by Department of Labour, which in turn is lower than the training rate of 2.8% for all trades in New South Wales (NSW), Australia. The training rate for motor mechanics in NSW is 4.6%.

An alternative measure of training levels is the enrolment rate (NC level 4) which compares the number of trainees enrolled for the national certificate with the number of motor mechanics employed. The enrolment rate for motor mechanics was 9.8% in 2003.

Training – Other related qualifications and courses

While the level 4 national certificate may be regarded as the qualification required to be a fully qualified motor mechanic, there are other motor mechanic-related courses and qualifications (such as the Certificate in Automotive Engineering). These qualifications

³ This assumes that there is full employment of motor mechanics. This is a reasonable assumption in the current environment of low unemployment and skill shortages.

may be regarded as adequate to some employers of motor mechanics, especially during times of acute skill shortages. They are also of significance as these qualifications may staircase trainees towards the national certificate level 4 qualifications. Credits obtained in these qualifications may be recognised towards a national certificate level 4, should the trainee later wish to become a fully qualified tradesperson. A list of these qualifications and the number of trainees enrolled in courses leading to these qualifications is provided in Appendix 1.

Training in these courses is reflected in the training enrolment rate (all related training) which compares the number of trainees enrolled in all motor mechanic-related training with the number of employed motor mechanics. The enrolment rate (all related training) is measured at 19.0% for 2003 (table 6).

A number of other government-funded vocational educational and training programmes (including Training Opportunities Programme, Youth Training and Skill Enhancement Training) offer trades related training which lead to credit achievement on the National Qualifications Framework⁴. More than a thousand trainees were enrolled for this training related to motor mechanics in 2003 (see Appendix 1).

Table 6: training rates for motor mechanics, 2003

Indicator	Explanation	Motor Mechanic (NZ)	All SERA trades surveyed (NZ)	Motor Mechanic (NSW, Australia)	All trades (NSW, Australia)
Training rate (national certificate L4)	Number of trainees achieving relevant national certificates (level 4) expressed as a percentage of employment in that occupation.	1.4%	1.8%	4.6%	2.8%
Training enrolment rate (national certificate L4)	Number of trainees enrolled for relevant national certificates (level 4) expressed as a percentage of employment in that occupation.	9.8%	16.1%		
Training enrolment rate (all related training)	Number of trainees enrolled in all relevant courses expressed as a percentage of employment in that occupation.	19.0%	26.4%		

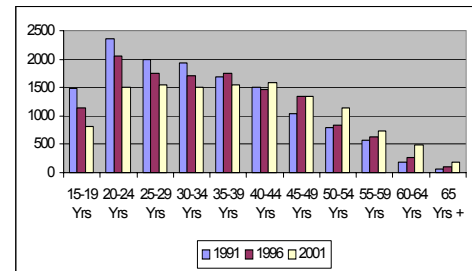
Source: Department of Labour (New Zealand), Department of Employment and Workplace Relations (Australia)

⁴ Enrolments in these programmes are not included in the training enrolment rate (all related training).

Training – employer perceptions

Employers contacted during the SERA survey confirmed the low national certificate level 4 training rate, saying that there were limited numbers of young people entering the occupation. Figure 4, a census age profile of motor mechanics, confirms this. It shows the large drop in numbers of motor mechanics aged 15 – 24 years between 1991 and 2001. For example, in 1991, 17% of motor mechanics employed were aged 20 – 24 years. This dropped to 12% in 2001.

Figure 4: age profile of motor mechanics



Source: Statistics New Zealand, Census

Migration

There was a net migratory gain of *machinery mechanics and fitters*⁵ in the three years to June 2004. This was preceded by three years of net migratory losses (1999-2001) which in turn was preceded by a net loss in 1998. Overall, there was a net loss over the entire seven year period. However, the loss is small compared with many trade occupations which experienced large net losses over the period whole period.

Table 7: annual permanent and long-term (PLT) arrivals, departures and net migration of machinery mechanics and fitters, June years

	1998	1999	2000	2001	2002	2003	2004	1998 – 2004
PLT arrivals	501	191	145	176	222	287	275	1797
PLT departures	398	357	211	282	177	202	207	1834
PLT annual net migration	103	-166	-66	-106	45	85	68	-37

Source: Statistics NZ, External Migration

Employers had divergent attitudes about the employment of motor mechanics from overseas. Some reported positive experiences employing migrants, while others found migrants an unsuitable source of skilled labour. Reasons ranged from poor English language ability to 'not working to New Zealand standards' and 'not having a New Zealand work ethic'.

Retirement

It is estimated from the 2001 population census that approximately 1.1% of motor mechanics retire each year. This amounts to an annual loss of over 150 mechanics.

Summary

The training rate for motor mechanics (a crude measure of the rate at which the supply of fully qualified mechanics can grow through training) is low at 1.4%. It is barely sufficient to compensate for retirements, which occur at a rate of 1.1% per annum. Training levels are unlikely to increase substantially in the next three years, as total enrolments have not grown. The supply of motor mechanics through migration has improved recently and there has been a small net inflow of mechanics in the past three years.

⁵ External migration figures are available for machinery mechanics and fitters which is the broad occupational category that includes motor mechanics.

Employer recruiting experiences

Is there a shortage of motor mechanics?

Results from the SERA show that there was a substantially higher fill rate for motor mechanics (72%) than the average for all trades surveyed (41%). There was also a slightly higher number of suitable applicants: 1.3 compared with 0.7 for all trades surveyed (table 5). This suggests that shortages of motor mechanics may not be as acute as other trades. However, with just over 7 out of every 10 positions advertised being filled, motor mechanics are still deemed to be in shortage.

Table 8: SERA results for motor mechanics

	Number of employers	Number of Positions	Positions filled	Fill rate	Suitable applicants	Average number of suitable applicants
Motor Mechanic	13	18	13	72%	23	1.3
All trades surveyed	240	453	186	41%	337	0.7

Source: Department of Labour, SERA

Employers reported spending a great deal of money on advertising but were not able to attract enough suitably qualified motor mechanic applicants. They emphasised the importance of holding appropriate qualifications and having good communication skills. Motor mechanics who were able to work on European cars and held warrant of fitness certificates were highly sought after. Employers reported coping with the shortage of skilled motor mechanics by using unskilled or semi-skilled labour, making more use of overtime, and contracting work out.

What are employers paying?

Table 9 shows that the motor mechanic wage rates offered by employers in the SERA were equivalent to the average of all trades surveyed. Data from the Labour Cost Index (LCI) show that wages for motor mechanics increased by 4.4% in the year to June 2004, indicating that wages have responded to shortages.

Table 9: motor mechanic average hourly wage rates

	Mean
SERA – motor mechanics	\$20.43
SERA – all trades surveyed	\$20.60
LCI – motor mechanics	\$17.87
LCI – all trades	\$19.54

Source: Statistics New Zealand (LCI), Department of Labour (SERA)

Changes in market conditions

As part of the SERA, employers were asked whether it was harder or easier to fill their recent vacancies for motor mechanics compared with twelve months earlier. A net 15%⁶ of employers felt that it was harder. Based on this information, DoL concludes that over

⁶ The net estimate is calculated by subtracting the percentage of employers who found it harder to fill the vacancy from the percentage of employers who found it easier to fill the vacancy. This sum is then divided by one, less the percentage of employers who did not answer this question.

the past year, recruiting conditions have become slightly more difficult for employers of motor mechanics.

Outlook

The current and future level of training is likely to fall short of new demand (arising from job creation) and replacement demand (arising from retirement and motor mechanics leaving the occupation). This level of training is also unlikely to make an impact on current unfilled vacancies. DoL therefore expects shortages to persist in the short term.

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APPENDIX 1. TRAINING ENROLMENTS FOR MOTOR MECHANIC TRADE: 2003

Enrolments in National Certificate Level 4 and equivalent qualifications: 2003

Qualification Title	Qualification Code	Provider Name	Level	Credits	Share of Enrolments (%)
NC in Automotive Engineering		Motor ITO	4	271	87.2%
NC in Automotive Engineering	NC5215	Unitec New Zealand	4	271	12.8%
Total					100.0%

Enrolments in other qualifications

Qualification Title	Qualification Code	Provider Name	Level	Credits	Share of Enrolments (%)
Certificate for Entry to Automotive Trades	CH3825	Christchurch Polytechnic Inst of Tech	2	91	3.2%
Certificate in Automotive Engineering	HB3860	Eastern Institute of Technology	2	121	5.1%
Certificate in Automotive Engineering (Service Technician)	BP3236	Bay of Plenty Polytechnic	2	136	7.0%
Introduction to Automotive Engineering	OP2301	The Open Polytechnic of New Zealand	2	120	7.9%
WITT Certificate in Automotive Trades	TK0010	Western Institute of Technology Taranaki	2	120	2.0%
Certificate in Applied Technology	WK2448	Waikato Institute of Technology	2	60	3.4%
N C Motor Industry (Entry to Automotive Trades)	NC2822	Unitec New Zealand	2	84	7.6%
Certificate for Entry to Automotive Trades	MA4119	Universal College of Learning	3	134	5.2%
Certificate in Automotive Engineering	ST4994	Southern Institute of Technology	3	120	3.1%
Automobile Servicing	PC3489	Metro Training Services	3	140	2.1%
NC in Automotive Dismantling & Recycling	na	Motor ITO	3	137	0.2%
NC in Automotive Parts & Accessories	na	Motor ITO	3	na	25.0%
NC in Automotive Steering, Suspension & Alignment	na	Motor ITO	3	na	0.1%
NC in Brake Service Engineering	na	Motor ITO	3	101	0.4%
NC in Exhaust Servicing	na	Motor ITO	3	94	0.1%
Certificate in Automotive Engineering (Advanced)	PR4725	Whitireia Community Polytechnic	4	121	0.3%
LCP - Automotive Engineering "A" Grade	na	Motor ITO	4	na	12.0%
NC in Air Conditioning (L4)	na	Motor ITO	4	131	0.2%
INSTEP - Funded	BPS006	Bay of Plenty Polytechnic	na	na	7.0%
Short courses in Automotive Engineering	G52421	Unitec New Zealand	na	na	7.2%
Short courses in Automotive Engineering	G52421	Unitec New Zealand	na	na	0.1%
Automotive Advanced Trade Certificate.	AT5410	Waikato Institute of Technology	na	na	0.2%
MIT Certificate of Achievement In Vehicle Technology	MN4387	Manukau Institute of Technology	na	na	0.7%
Total					100.0%

Enrolments in Training Opportunities Programme, Youth Training and Skill Enhancement Training related to the motor mechanic trade

Course name	Programme type	Share of Enrolments (%)
Building/ Automotive Kerikeri	TOP	3.9%
Panelbeating/Automotive/WBT	YOUTH	6.1%
NC Employment Skills Auto	YOUTH	2.5%
NC Employment Skills Auto	YOUTH	6.1%
Career Towards Auto Trades	YOUTH	1.2%
Automotive Options	TOP	4.7%
Automotive Options	TOP	4.8%
Automotive Trades Training	YOUTH	6.1%
Automotive Trades Training	SE	1.3%
N.C.E.A & Emp Skills - Auto	YOUTH	1.7%
N.C.E.A & Emp Skills - Auto	TOP	0.3%
Auto, Retail or Web Design	YOUTH	5.3%
Automotive and Hospitality	TOP	4.2%
Automotive Trade Training	YOUTH	1.7%
Nat. Cert Automotive Trades	YOUTH	3.0%
Automotive Trades - Wang	TOP	2.7%
Intro to Automotive - PN	YOUTH	1.9%
Nat Cert Entry Auto Trades	YOUTH	2.1%
Entry to Automotive Trades	YOUTH	2.6%
Entry to Automotive Trades	YOUTH	2.1%
Primary & Automotive Trades	TOP	5.1%
Primary & Automotive Trades	YOUTH	6.3%
Intro to Auto Trades & Welding	YOUTH	1.7%
Heavy Auto/Civil Construction	TOP	0.8%
Heavy Auto/Civil Construct	YOUTH	1.5%
Pre Apprenticeship Motor	YOUTH	0.5%
Automotive Trade	YOUTH	1.5%
Automotive Trade	YOUTH	1.6%
Prep for the Automotive Trade	TOP	1.4%
Prep for the Automotive Trade	TOP	2.1%
Automotive Trades and Services	TOP	0.5%
Intro To Automotive	YOUTH	0.3%
Automotive Training	YOUTH	1.7%
Automotive Training	YOUTH	1.4%
Automotive Training	YOUTH	1.8%
Automotive Training	YOUTH	1.5%
Pre Apprenticeship Motor	TOP	0.2%
Automotive	TOP	1.8%
Automotive Trades	TOP	1.7%
NCEA & Emp Skills - Auto	YOUTH	2.3%
Pre-apprenticeship Automotive	SE	0.2%
Total		100.0%