

**NORTHSIDE AUTOMOTIVE  
CONSULTING SERVICES**

**MODIFIED PRODUCTION VEHICLE**

**ENGINEERING**

**CERTIFICATE**

**NUMBER:**

**JJK0457MP**

**For: Mr Siggs Jonsson**  
**Toyota Landcruiser 80 Series GXL**  
**Suspension & Body Lift**  
**Replacement Wheels & Tyres**

**16 June 1997**

# NORTHSIDE AUTOMOTIVE CONSULTING SERVICES

**ENGINEERING CERTIFICATE NUMBER: JJK0457MP**

I have personally examined the vehicle described below. I hereby certify that, the particulars shown in this certificate are correct and that in respect of the vehicle modifications described below, the vehicle is sound in its design and construction and it meets the requirements of the New South Wales Motor Traffic Regulations and complies with the affected Australian Design Rules specified below.

  
Jame Karaiste

M SAE-A (ASG)

Member Number 008890

## MODIFIED PRODUCTION VEHICLE

<b>DATE</b>	: 16 June 1997
<b>OWNERS NAME</b>	: Mr Siggı Jonsson
<b>ADDRESS</b>	: 6 Lionel Avenue NORTH RYDE NSW 2113
<b>REGISTRATION NUMBER</b>	: Unregistered
<b>VEHICLE MAKE &amp; MODEL</b>	: Toyota Landcruiser 80 Series GXL
<b>BODY TYPE</b>	: Station Wagon
<b>MTH/YR OF MANUFACTURE</b>	: 11/94
<b>ENGINE NUMBER</b>	: 1HD0091504
<b>ENGINE CAPACITY</b>	: 4164 ml
<b>VIN/CHASSIS NUMBER</b>	: JT711TJ8208100001
<b>UNLADEN MASS</b>	: As Per Weighbridge Ticket
<b>ODOMETER READING</b>	: 15045 km
<b>AFFECTED ADR's</b>	: 1/00, 2/00, 3/02, 4/01, 5/02, 6/00, 7/00, 8/01, 10/01, 11/00, 12/00, 13/00, 14/02, 15/01, 16/01, 18/02, 20/00, 22/00, 23/01, 24/02, 25/02, 28/01, 30/00, 34/01, 35/00, 42/02, 43/03, 44/02, 45/01, 46/00, 47/00, 48/00, 49/00, 51/00, 61/02, 70/00.
<b>STATUS OF MODIFICATION</b>	a) Engine : OE
	b) Transmission & Driveline : Modified
	c) Front Suspension & Axles : Modified
	d) Rear Suspension & Axles : Modified
	e) Braking System : Modified
	f) Steering System : Modified
	g) Wheels & Tyres : Replaced
	h) Body/Chassis : Modified
	i) Seating : OE

### NATURE OF MODIFICATION:

The vehicle as described above has undergone a 100mm suspension lift, a 100mm body lift and installation of 44x18.5x15 tyres, which required the rear axle to be relocated 150mm rearward and modifications to the wheel guards. The vehicle has also been assessed for continued compliance with all affected ADRs due to the above modifications. For further information on the status of modified systems of this vehicle, refer to the attached notes.

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### BODY LIFT

The body was raised 100mm off the chassis using fabricated steel mounts in place of the original mounts for eight out of ten body mounts. The remaining two mounts were raised using structural nylon spacers.

As the radiator is mounted to the body, its mounting brackets had to be altered to return it to its original position relative to the engine and cooling fan.

To eliminated the need to make changes to the steering column, the opening in the firewall where the column passes through it was elongated downwards sufficiently to accommodate the column, and the hole closed off using a custom made rubber grommet.

Other items that were affected and needed extending were gear and transfer case selector linkages and heater inlet hose.

No extensions were required for brake lines.

### SUSPENSION LIFT

The objective of the lift was to relocate the standard suspension travel, ie the chassis would sit 100mm higher above the axle, but the suspension travel would remain standard.

#### Front Suspension

Lift was achieved with custom wound coils, Spring rate is same as standard coils.

Both upper shock mounts and bump stops were spaced 100mm down from their original position in order to maintain standard upward suspension movement.

Caster was returned to original Toyota specifications using a combination of eccentric suspension bushes and radius arm bracket alterations.

One flexible brake hose had to be substituted with a longer unit from a Toyota Hilux.

#### Rear Suspension

Lift was achieved through a combination of using Old Man Emu after market coils and through relocation of the coil seats in the chassis (see section on relocation of rear axle).

Rather than modifying shock mounts a pair of longer shocks were installed.

  
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**RELOCATION OF REAR AXLE**

In order to relocate the rear axle the chassis crossmember that carries the upper coil seats, upper panhard rod mount, and shock mounts were relocated. The coil seats and shock mounts were further braced with a secondary crossmember made from square tubing.

Then the upper and lower radius arms were extended by replacing the tubes with longer units (the ends are cast or forged) of the same diameter and wall thickness as the original radius arms.

The driveshaft was extended by a qualified workshop, as was the handbrake cable.

**GUARD TRIMMING AND FLARES**

The guards required extensive trimming in order to accommodate the larger tyres, and the inner guards were largely custom fabricated.

Fibreglass Flares are used to ensure that the tyres are completely covered.

**EXHAUST MODIFICATIONS**

The exhaust had to be re-routed inside the chassis to prevent the front right tyre from fouling on it when the steering was on right hand lock.

The original pipe diameter and Toyota muffler were used.

**TYRES**

The tyres are Dick Cepek Fun Country 44x18.5 x 15, DOT approved, six ply rated, load range C, and speed rated to 140km/h. Certified wheel size is 15 x 12JJ.

**WHEELS**

Wheels are 15 x 12JJ Weld Racing Super singles alloys certified for use with 44" diameter tyre, and load rated to 1270kg (2800lb) per wheel.

**1994 OFF-PASSENGER VEHICLE (MC CATEGORY) ADR ASSESSMENT**

**ADR 1/00 - Reversing Signal Lamps:**

OEM Toyota reversing lamps have been retained. Height above ground has been retained within ADR limits. OEM compliance with ADR 1/00 has been maintained.

**ADR 2/00 - Door Latches & Hinges:**

OEM Toyota door latches & hinges have been maintained. OEM compliance with ADR 2/00 is maintained.

  
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**ADR 3/02 - Seat Anchorages For Motor Vehicles:**

The vehicles original front bucket seats and rear seating positions have been retained and utilise the original vehicles standard anchorage points and anchorage hardware. OEM compliance with ADR 3/02 is maintained.

**ADR 4/01 - Seat Belts:**

OEM seat belts have been retained for all seating positions. OEM compliance with ADR 4/01 has been maintained.

**ADR 5/02 - Seat Belt Anchorage Points:**

All seat belt systems are anchored using the OEM Toyota seat belt anchorage points, therefore OEM compliance with ADR 5/02 is maintained.

**ADR 6/00 - Direction Turn Signal Lamps:**

OEM Toyota direction turn signal lamps have been retained. Height above ground has been retained within ADR limits. OEM compliance with ADR 6/00 has been maintained.

**ADR 7/00 - Hydraulic Brake Hoses:**

The original front flexible hydraulic brake hose has been replaced with a unit from a Toyota Hilux, which was also known to comply with ADR 7/00, therefore compliance with ADR 7/00 is maintained.

**ADR 8/00 - Safety Glass:**

All OEM glazing material has been retained on this vehicle and are permanently marked with the appropriate approval markings. Compliance with ADR 8/00 is considered to maintained.

**ADR 10/01 - Steering Columns:**

All original steering column and steering wheel components have been retained, the only modification involved elongating the opening through the firewall which did not affect the original column mounting points. Considering the above, OEM compliance with ADR 10/01 has been maintained.

**ADR 11/00 - Internal Sun Visors:**

OEM components retained, therefore OEM compliance with ADR 11/00 has been maintained.

**ADR 12/00 - Glare Reduction in Field of View:**

All items in the drivers field of view are either painted black or are not polished metal objects and are considered not to have a high specular gloss rating. OEM compliance with ADR 12/00 has been maintained.



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**ADR 13/00 - Installation of Lighting & Light Signalling Devices**

All positions of the OEM lighting devices have been retained within ADR limits, therefore compliance with ADR 13/00 is considered to be maintained.

**ADR 14/02 - Rear Vision Mirrors:**

OEM internal and external rear vision mirrors has been retained, therefore OEM compliance with ADR 14/02 has been maintained.

**ADR 15/01 - Demisting of Windscreens:**

The vehicles original hot air windscreen demisting system has been retained in working order with sufficient air flow. OEM compliance with ADR 15/01 is considered to be maintained.

**ADR 16/01 - Windscreen Wipers & Washers:**

The vehicles original windscreen wiper and washer systems have been retained. Therefore, OEM compliance with ADR 16/01 is considered to be maintained.

**ADR 18/02 - Location & Visibility of Instruments:**

The original instrumentation is retained without modification. OEM compliance with ADR 18/02 is considered to be maintained.

**ADR 20/00 - Safety Rims:**

The original specification wheels and tyres have been replaced with 15 x 12JJ rims with 44 x 18.5 x 15 tyres on both the front and rear axles. The wheel and tyre combinations are in accordance with acceptable US DOT Standards and with suitable speed and load capacities. Compliance with the intent of ADR 20/00 is considered to be achieved.

**ADR 22/00 - Head Restraints:**

OEM seating systems incorporating head restraints have been retained, therefore OEM compliance with ADR 22/00 is considered to be maintained.

**ADR 23/01 - Pneumatic Passenger Car Tyres:**

The vehicle is fitted with new non-retreaded 44 x 18.5 x 15 tyres which are manufactured by Dick Cepek to an acceptable US DOT standard, approval number DOT DYE5 TDY 435. Compliance with the intent of ADR 23/01 is considered to be achieved.



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**ADR 24/02 - Tyre Selection:**

The vehicle is fitted with Dick Cepek Fun Country 44 x 18.5 x 15 tyres on 15 x 12JJ wheels on the front and rear axles, which provide a maximum total tyre load carrying capacity in excess of the GVM of this vehicle. Considering the tyre and wheel combination complies with an acceptable US DOT Standard and have adequate speed and load carrying, compliance with the intent of ADR 24/02 is considered to be achieved.

A replacement tyre placard which meets the requirements of ADR 24/02 has been affixed to the vehicle.

**ADR 25/02 - Anti-Theft Locks:**

The standard OEM specification steering column incorporating an anti theft lock has been retained. Compliance with ADR 25/02 is considered to be maintained.

**ADR 28/01 - Motor Vehicle Noise:**

As the vehicle is fitted with a standard specification Toyota 1HD diesel engine with minor modifications to the standard exhaust system, a noise test has been conducted in accordance with ADR 28/01 with a reported stationary noise level of 87 dB(A) and a reported vehicle in motion noise level of 78.5 dB(A), both of which are within ADR 28/01 limits for a MC category vehicle. See copy of test report attached.

**ADR 30/00 - Diesel Engine Exhaust Smoke Emissions:**

The only modification required to the engine system was the minor re-routing of the exhaust system, which is considered not to have induced any increase in the back pressure, and therefore it is considered not to affect the OEM compliance with ADR 30/00.

**ADR 34/01 - Child Restraint Anchorages:**

OEM CRA's have been retained and are unaffected by the modifications to the vehicle, therefore OEM compliance with ADR 34/01 has been maintained.

**ADR 35/00 - Commercial Vehicle Braking Systems:**

Although the vehicle has retained the original four wheel vacuum assisted hydraulic braking system with ABS, an abridged ADR 35/00 brake test was conducted with the 44 x 18.5 x 15 tyres. The testing included unladen service brake effectiveness, laden service brake effectiveness, fade test and parking brake tests.

The braking system demonstrated adequate effectiveness, stability and fade properties for all tests conducted. See copy of brake test summary report attached. Based on the above testing and considering the vehicle has maintained its standard proven braking system, it is considered to comply with the requirements of ADR 35/00.

  
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**ADR's 42/02, 43/03 & 44/02:**

The vehicle is considered to meet all applicable requirements of the above ADR's.

**ADR's 45/01, 46/00, 47/00, 48/00, 49/00 & 51/00:**

The vehicle has retained all of the original specification external lighting components and therefore OEM compliance with the above ADR's has been maintained.

**ADR 61/02 - Vehicle Marking:**

The vehicle has retained the original VIN, engine number and manufacturers plate in their original locations, therefore OEM compliance with ADR 61/02 has been maintained.

**ADR 70/00 - Exhaust Emission Controls for Diesel Engine Vehicles:**

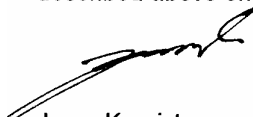
The only modification required to the engine system was the minor re-routing of the exhaust system, which is considered not to have induced any increase in the back pressure, and therefore it is considered not to affect the OEM compliance with ADR 70/00. All standard components affecting engine emissions have been maintained.

**General Comments:**

The modifications to this vehicle as described on pages 1, 2 and 3 above have been performed in accordance with sound engineering practices by suitably qualified persons. Based on the above the vehicle is considered suitable for full registration as a modified production vehicle. This vehicle has previously been registered in its standard configuration with registration number TMB 726.

This vehicle was assessed for compliance with the intent of the applicable Australian Design Rules based on a visual inspection and testing of the vehicle. The vehicle was found to comply with the intent of all the Australian Design Rules applicable to a 1994 year model MC category off-road passenger vehicle.

The issue of this engineering certificate is for the certification of the steering conversion and ADR assessment as described above only. This certificate is issued without alteration or erasure on the 16 June 1997.



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ADR 35/00 COMMERCIAL VEHICLE BRAKING SYSTEM TEST REPORT					
DATE:	11-June-97	PAGE:	1 OF 2	ENG. CERT. NO:	JJK0457MP
SECTION 1: TEST VEHICLE IDENTIFICATION & SPECIFICATIONS					

Make & Model:	Toyota Landcruiser 80 Series				
Variant:	GXL				
Category Code:	MC				
VIN/Chassis Number:	JT711TJ8208100001				
Engine Number:	1HD0091504				
Net Engine Power:	125 kW				
GVM Total/Front Axle/Rear Axle:	2960 kg				
Max. Loaded Test Mass (MLTM):	2960 kg				
Lightly Loaded Test Mass(LLTM):	2200 kg Approximately				
Unique Braking System ID:	Standard Toyota Components				
No.Of Brake Power Assist Units:	One				
Tyre & Rim size Designation Fr:	44 x 18.5 x 15, 15 x 12JJ				
Tyre & Rim size Designation Rr:	44 x 18.5 x 15, 15 x 12JJ				
Tyre Section Width Front/Rear:					
Wheel Vent Area:					
Wheelbase Min./Max.:	3000mm				
Maximum Laden Vehicle Speed:					
Variable Proportioning Braking:	Yes				
Antilock Braking System:	Yes				
Comments On Test Vehicle:					
Modified vehicle test in accordance with ADR 35/00 CL.35.5.3, CL.35.5.6, CL.35.5.9, CL.35.5.10 and					
CL.35.5.16 only to demonstrate continued compliance with ADR 35/00. Modifications included body and					
suspension lift, wheelbase extension and replacement wheels and tyres.					
Standard transmission and axle ratios were used during the testing.					

ADR 35/00 COMMERCIAL VEHICLE BRAKING SYSTEM TEST REPORT					
DATE:	11-June-97	PAGE:	2 OF 2	ENG. CERT. NO:	JJK0457MP
SECTION 2: SUMMARY OF EVIDENCE					

SELECTED DECELERATION MODES			INITIAL SPEED (km/h)	AVERAGE DECEL (m/s <sup>2</sup> )	CONTROL FORCE. MAX.(N)
SERVICE BRAKE LIGHTLY LADEN EFFECTIVENESS TEST (THIRD MODE)			100.1	5.42 (MIN.R'QD=4.19)	223
SERVICE BRAKE LADEN EFFECTIVENESS TEST (THIRD MODE)			100.8	5.16 (MIN.R'QD=4.19)	212
LADEN SECONDARY BRAKE TEST	NOT BY SERVICE BRAKE				
	BY SERVICE BRAKE	FR. SPLIT			
		RR. SPLIT			
		P.A. FAIL			
LADEN PARTIAL FAILURE TEST	ANTILOCK FAIL				
	VAR.PROP. FAIL				
SERVICE BRAKE FADE EFFECT. TEST			60.3	5.14 (MIN.R'QD=3.02)	230
SERVICE BRAKE WATER EFFECT. TEST					
PARK BRAKE TEST. MAXIMUM FORCE APPLIED TO PARK BRAKE CONTROL				HAND (N)	FOOT (N)
				518	_____
SERVICE BRAKE ACTUATING	AVERAGE OPERATING PRESSURE (AOP) (kPa)				
	TIME TO 65% AOP	IN LONGEST LINE (ms)			
		AT END OF PRESSURE VESSEL (ms)			
COMMENTS:	<p>The test vehicle was found to exceed the required deceleration for all tests conducted and demonstrated suitable stability under heavy braking. Suitable fade resistant properties were also evident during the fade testing.</p>				

ADR 28/01 EXTERNAL NOISE OF MOTOR VEHICLES TEST REPORT					
DATE:	11-June-97	PAGE:	1 OF 2	ENG. CERT. NO:	JJK0457MP
TEST VEHICLE IDENTIFICATION & SPECIFICATIONS					

ADR 28/01 Noise Check For: Siggs Jonsson 6 Lionel Avenue NORTH RYDE NSW 2113	
Make & Model	Toyota Landcruiser 80 Series
Variant:	GXL
Category Code:	MC
VIN/Chassis Number:	JT711TJ8208100001
Engine Number:	1HD0091504
Net Engine Power:	125 kW
Engine Speed At Max Power (ESMP):	3600 RPM
Maximum Engine Speed:	
Gross Vehicle Mass (GVM):	2960 kg
Unladen Mass:	
Off Road Design Use Features:	Yes
Tyre & Rim size Designation:	44 x 18.5 x 15, 15 x 12JJ
Engine Model/Type:	Toyota 1HD-FT Turbocharged Direct Injection Diesel
Noise Reduction System ID:	Standard Toyota Components
Muffler/Resonator Part Numbers:	Standard Toyota Components
Tail Pipe Diameter/Length:	Standard
Number/Space Between Outlets:	1 Outlet
Height of Each Exhaust Outlet:	850mm
Transmission Model ID:	Toyota A442F
Transmission Type:	Automatic With Manual Selector
Number Of Forward Gears:	4
Sound Limits Motion/Stationary:	79/90

ADR 28/01 EXTERNAL NOISE OF MOTOR VEHICLES TEST REPORT					
DATE:	11-June-97	PAGE:	2 OF 2	ENG. CERT. NO:	JJK0457MP
RESULTS FOR NOISE TESTS.					

**AMBIENT CONDITIONS & CALIBRATION CHECK:**

Calibration Reading dB(A)	94.0	Temperature °C	19
Background Reading dB(A)	50.0	Wind Speed m/s	0

**VEHICLE IN MOTION NOISE TEST:**

<b>Gear Selected For Reported Test:</b>			<b>Gear Selector in 2 Position</b>			
<b>Test Number:</b>	<b>1-RHS</b>	<b>2-LHS</b>	<b>3-RHS</b>	<b>4-LHS</b>	<b>Max. Noise Level</b>	
<b>Vehicle Speed AA:</b>	50.3	50.7	50.7	50.5		km/h
<b>Engine Speed AA:</b>	1755	1760	1760	1755		rpm
<b>Noise Meter Reading:</b>	78.0	78.5	78.4	77.9	78.5	dB(A)

**REPORTED READING:**

<b>Reported Vehicle in Motion Noise (max sound level recorded. average in the case of 2 conditions) dB(A)</b>	78.5
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**AMBIENT CONDITIONS & CALIBRATION CHECK:**

Calibration Reading dB(A)	94.0	Temperature °C	19
Background Reading dB(A)	50.0	Wind Speed m/s	0

**STATIONARY NOISE TEST:**

<b>Test Number</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>		<b>Rounded Mean</b>
<b>Stabilised E.S.</b>	3200	3200	3200	3200	rpm	
<b>Noise Level</b>	87.1	87.3	87.2	87.4	dB(A)	87

**REPORTED READING:**

<b>Reported Stationary Noise. dB(A)</b>	87
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**AMBIENT CONDITIONS & CALIBRATION CHECK:**

Calibration Reading dB(A)	94.0	Temperature °C	19
Background Reading dB(A)	50.0	Wind Speed m/s	0

Phone: (02) 449 3500  
Fax: (02) 9988 4823

TICKET No: 13277

TIME 2:15 DATE 19/09/97

**WEIGHBRIDGE**  
**ARTHUR H. GILLOTT PTY LTD**  
West Street, Pymble NSW 2073  
**DIRECT MEASUREMENT**

**WEIGHBRIDGE**

**FOR REGISTRATION  
PURPOSES ONLY**

GOODS MEASURED 410P  
MARKS & BRANDS OF GOODS MEASURED 2x RWD CRUISER  
PLACE OF DISPATCH OF GOODS MEASURED RYPK  
DESTINATION OF GOODS MEASURED MULTIPLY  
REGISTRATION No. OR Nos. OF VEHICLES MEASURED 1TT711184010001  
NAME OF DRIVER OF VEHICLE JONSSON

	TONNES (Including Decimal Submultiples of Tonnes)
GROSS MASS	<u>TARE 0141</u>
TARE MASS	<u>2-35</u>
NET MASS	<u>TARE 0141</u>
	(SIGNATURE OF OPERATOR) <u>[Signature]</u>

CHARGE CASH  NAME OF OWNER JONSSON