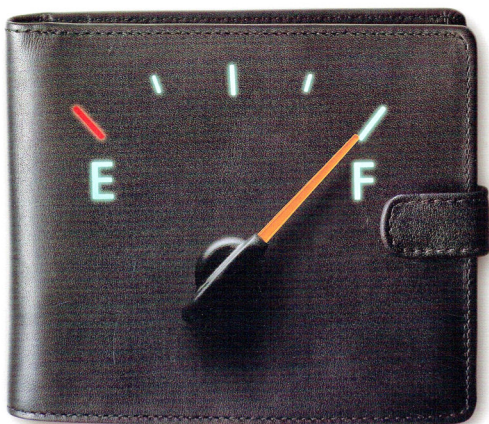
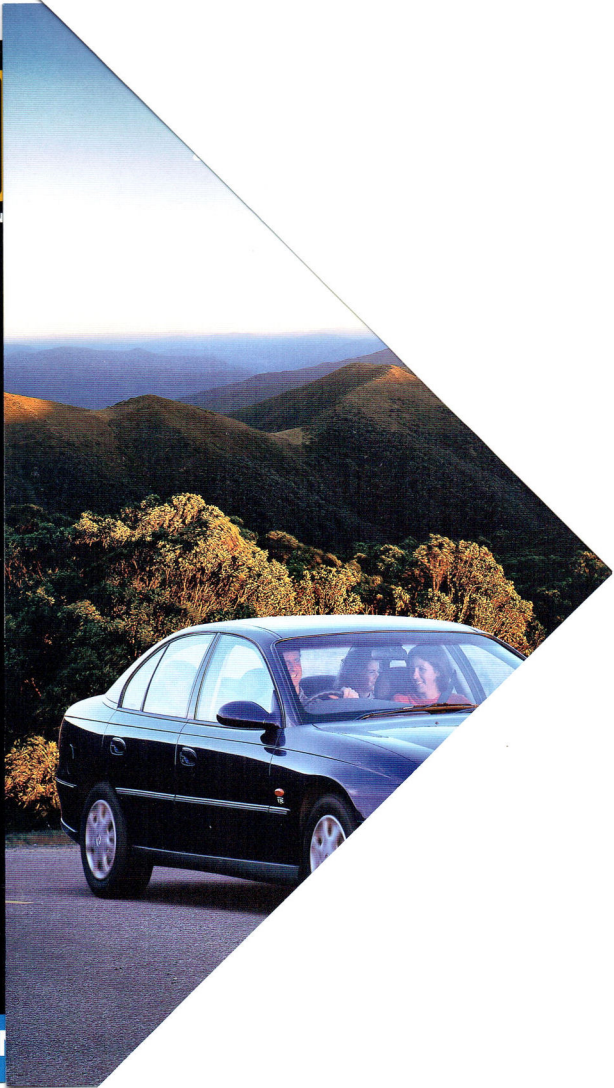


Stays full longer  
with Holden LPG.





IN



II



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*Official Automotive Partner*

Holden Ltd

241 Salmon Street Port Melbourne Victoria Australia

All correspondence to: GPO Box 1714 Melbourne Victoria Australia 3001

Telephone (03) 9647 1111 Facsimile (03) 9647 1997

A.C.N. 006 893 232



Read the advantages  
of having LPG factory fitted  
and you'll be a convert.







#### Enjoy real peace of mind

When you order LPG as a factory option, it's not an "add on" or after thought. The dual fuel system is integrated into your Commodore sedan or wagon<sup>1</sup> on the production line. Every inch a Holden. And like every other key component, it's gone through rigorous testing by Holden engineers, including barrier testing and safety checks during its development. This ensures that Australian Design Rule requirements are completely satisfied when Holden's LPG system is fitted. Holden is leading the way with high quality installation, reliability, durability and, of course, safety.

The Commodore LPG system incorporates some of the best LPG technology in the world and it's factory backed.

**Slash your fuel bill by up to 42%**  
Running with Holden LPG can almost halve your fuel bill. Using the Holden Commodore Executive ECOTEC V6 as an example that's a saving of around \$16.70 per tank of LPG or about 3.5 cents per kilometre, depending on the price of petrol and LPG in your area.

(Calculated using AS2877 city cycle, and national average capital city cost of LPG (30.42) and petrol (70.32), Dec 1997 Feb 1998 - Informed Sources Pty Ltd.

AS2877 figures are provided to assist

you in comparing the fuel consumption of Commodore with other vehicles. The actual fuel consumption will depend, however, on many factors, including your driving habits, the prevailing conditions and your vehicle's equipment, condition and use.)

#### The other advantages of Holden LPG also keep running on and on

Some of the advantages include:

1. Advanced technology that allows easier starting, hot or cold, on LPG. All proven by Holden's severe hot and cold testing.
2. Factory calibration of the engine management system delivers performance levels similar to petrol. In fact, it's difficult to notice any difference.

3. The safety and reliability of specially formed, integrated steel fuel lines.
4. An LPG filler behind the fuel door on your Holden, enables easy, secure attachment of the LPG hose.
5. An upgraded rear suspension to maintain a high standard of ride and handling.
6. A conveniently positioned, integrated fuel selection switch that lets you change easily from petrol to LPG.
7. An accurate, integrated fuel gauge that automatically shows the level of petrol or LPG, depending on the fuel being used. It even recalculates the distance to empty on the trip computer fitted.
8. The LPG system is integrated into

Holden's world class anti-theft system.  
9. Australia-wide availability of replacement parts through all Holden Dealers.

When your Holden Commodore ECOTEC V6 auto sedan or wagon<sup>1</sup> is fitted with factory backed LPG, full new car warranty still applies.



*Specially designed LPG tank, fitted so that loss of boot space is kept to a minimum.*

When fitted in the factory by Holden By Design, your Holden is badged with an identification nameplate to verify its HBD authenticity.

So talk to your dealer now, and take off with Holden LPG.



*Just like the sedan, the Commodore wagon retains the full 75 litre petrol tank capacity as well as 60 litres of LPG, providing an extra long driving range when you need it.*

To see why the Holden LPG system always comes out on top,  
compare the features and make your own check list.

Factory backed system feature	Benefit	Other Systems
Dual fuel computer chip in Powertrain Control module	Petrol-only chip replaced by Holden to include LPG with specific spark timing calibration for each fuel, for best performance/economy.	?
Throttle switch	For easier starting.	?
LPG fuel lines in steel, not copper	Safety and reliability of specially formed steel fuel lines.	?
Integrated fuel gauge	Automatically shows the level of the fuel that the driver has selected to use. Maintains the functions of the trip computer fitted.	?
Fuel mode switch	Fully integrated 2-position switch that fits neatly into instrument panel and is styled to match existing switches.	?
LPG cylinder	Holden specify a cylinder and attachments that have passed extensive durability and safety tests.	?
Integrated LPG filler	Located behind the fuel door on your Holden, it enables easy and secure attachment of the LPG filling hose.	?
LPG wiring harnesses	LPG wiring is integrated into the main wiring harness. No reworking of the existing harnesses is necessary.	?
Underhood layout	All components are compatible with Holden's factory options.* All bracketry is factory-tested for durability.	?
Upgraded rear suspension	Maintains ride, handling and ground clearance.	?
Anti-theft system	LPG system is integrated into Holden's world-class, anti-theft system.	?
Replacement parts	Parts are easily and quickly available through all Holden Dealers Australia-wide.	?
Installation by certified LPG specialists	Ensures you're completely satisfied with the quality and safety of the fully-integrated installation.	?
ADR testing	Holden's safety and durability standards ensure your Holden satisfies all relevant Australian Design Rules.	?
Warranty	Warranty of 3 years or 100,000 km, whichever comes first, is retained.	?

The Holden LPG system is available by fitment through Holden by Design on new Commodore ECOTEC V6 auto sedan and wagon.\*

Talk with your Holden Dealer when ordering your new car.



Official Automotive Partner



OFFICIAL MAGAZINE OF **A/MA**

# Business Motoring

INCORPORATING BUSINESS FLEET MONTHLY

April 1998

# FUEL

**In the battle to reduce fleet costs is LPG the answer?**

**INSIDE: HOLDEN'S LPG VT COMMODORE**

# Fuel for thought

By Karl Gehling

Fuel is one of the largest expenses for any fleet manager, accounting for approximately 50 to 60 per cent of a vehicle's running costs. With fleet managers under pressure to reduce running costs and

quality, refinement and engineering excellence, fuel economy advances have not been forthcoming.

But do people care about fuel consumption?

ical Falcon should test fleet buyers and managers' commitment to reducing fuel costs.

But are fleet managers really looking to reduce their fuel expenses?

Impco Technologies general sales manager, Rob Mercer, believes many fleet managers are ignoring one of the most effective fuel cost saving systems on the market - LPG.



make their fleets dollars go further, it is little wonder that some people in the industry were concerned when Holden Limited released their new but heavier Commodore. The substantial increase in mass may have given the vehicle the desired big car feel and ride however, the same mass increases limited Holden's ability to improve economy over the previous model.

An automatic VT Commodore sedan will use 12 litres per 100km in the city.

While the VT may have broken new ground in terms of build

According to VFACTS, both private and fleet buyers are chafing at the bit to get a VT Commodore. Which would suggest fuel consumption is either not of great concern or the cars' other attributes far outweigh any fuel economy concerns.

Ford dealers have to wait until August or September before they can expect to show off their flashy new Falcon, which according to executive vice-president Jae Nasser, is going to be lighter and supposedly have a fuel efficiency advantage.

The arrival of a more econom-

"There are a lot of people in the fleet industry who do not understand or know about the cost savings that can be achieved from either buying a vehicle fitted with LPG or converting it," Mr Mercer said.

"If you have vehicles in your fleet doing 40,000km a year it is possible to pay for the LPG system in the first year of operation. Even if you only keep the vehicle for two years you are still saving a lot of money for every kilometre after the first 40,000."



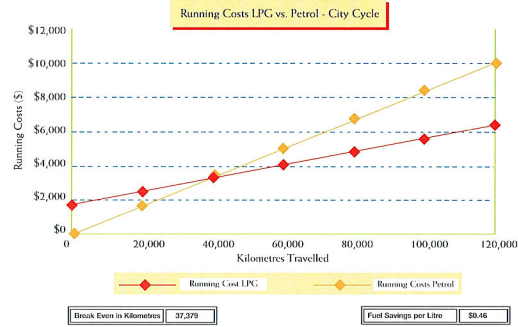
## FUEL SAVINGS OF VEHICLE USING LPG Holden VT V6 Commodore Sedan-City Style

Table supplied by Impco Technologies Pty Ltd

	LPG COSTS	PETROL COSTS
Fuel Consumption (litres/100km) CITY	16	12
Fuel Costs per litre CITY	0.240	0.699
Conversion Cost	\$2,200.00	
Resale (Added Value)	\$500.00	

\* Enter new fuel cost assumptions in the boxes for revised calculations

\*\* Enter amount that is added to the resale value of the vehicle



### SAVINGS OF LPG VS. PETROL-CITY CYCLE

Kilometres Travelled	0	20,000	40,000	60,000	80,000	100,000	120,000
Running Costs Petrol	\$0	\$1,678	\$3,355	\$5,033	\$6,710	\$8,388	\$10,066
Running Costs LPG	\$1,700	\$2,468	\$3,236	\$4,004	\$4,772	\$5,540	\$6,308
Savings	-\$1,700	-\$790	\$119	\$1,029	\$1,938	\$2,848	\$3,758

Impco is the original equipment manufacturer and supplier for Holden's, factory fitted LPG system, which is available across the VT Commodore range.

The systems are covered by the full Holden 3 year/100,000 km warranty for the VT which should allay the concerns of buyers worried about the reliability of the LPG systems.

"In the past LPG has developed a bad reputation from poor quality equipment and fitting of

LPG systems," Mr Mercer said. "But now with QS9000 accredited suppliers, authorised installer networks and factory fitted options you can get the same three year 100,000 km warranty on the Holden system as you would on any other Commodore."

"Most people are not aware that LPG is actually safer than petrol because it is less volatile and when designing the system in the VT Commodore Holden engineers had to ensure it would

meet with all rough track and crash worthiness requirements."

AGC's executive director of fleet operations, David Bray, said he has had first hand experience of running LPG cars and believes many fleet managers don't understand how easy the systems are to use and how much they can save.

"Some people still have preconceived ideas about LPG that it is not safe," Mr Bray said.

Over the past decade LPG equipment has undergone signif-

icant advancements in safety, efficiency and reliability. Ask any taxi driver and they will almost always swear by it.

In Victoria, the majority of taxis have been converted to gas. With most taxis covering 500,000km or more and with the low price of LPG, it is easy to see how they can save on their running costs.

Howard Marsden from Tickford, who install the Falcon factory LPG system, said factory installed systems are much better than aftermarket conversions.

Tickford's research has revealed that buyers are looking to firstly save money, they are not interested in the technology, they want reliability and safety.

"They love the idea that it is also cleaner for environment, but that is not why they are buying it, they are buying it to save money," Mr Marsden said.

Apollo Gas Products manager, Andrew Clifford, said there needs to be a cost benefits analysis done by people making the decisions as to whether or not it is viable to convert a car to LPG.

"The fluctuating price of LPG is probably stopping a lot of people converting to gas," Mr Clifford said. "There will always be a price differential on LPG over petrol but when the price rises seven cents overnight it has to put a lot of people off."

Mr Clifford believes there is a huge potential for growth in LPG conversions but "people just don't know about it". "There is a great opportunity to educate the people on the benefits of LPG," he said.

However, in the used car market there is already an awareness of the benefits of dual fuel vehicles, with most LPG converted cars attracting a \$500 to \$1000 premium on resale.

Impco's Rob Mercer believes fleet managers should put aside any preconceived ideas and look at dual fuel vehicles as a business decision, because "it will save them a lot of money".

# Are **you** wasting your profit **\$\$** on fuel costs?

Save as much as 48% on your total fuel bill  
by contacting IMPCO® Technologies P/L on  
03 9584 5644 ext 4-211.

You'll be glad you made the call.

- OEM and AfterMarket supplier
- QS9000 accredited
- Detailed fleet support network  
(commercial, technical, financial analysis  
and recommendations)
- Factory backed warranty Australia wide
- 40 years industry experience
- Australia wide technical support
- Program management expertise

**IMPCO®**

*"A company dedicated to a better world through cleaner air"*







## Fill'er up – but not yet

by Joe Kenwright.

You can now buy an Australian family car which will easily make the long-distance trip from Sydney to Adelaide without stopping for fuel.

It's the VT Commodore with Holden's factory dual fuel – petrol and LPG – option.

In fact, you could almost make a Sydney-Melbourne return trip without a single refuelling stop.

A one day trip from Sydney to Adelaide last week in Holden's family car showed that travelling large distances across Australia is now more limited by safety considerations, and toilet stops, than filling the fuel tank – or tanks. Try these statistics.

The VT Commodore's standard 75-litre fuel tank gave 824 km on regular unleaded petrol at an average fuel consumption of 9.1 litres per 100km or 31 miles per gallon. The trip time was eight hours four minutes.

After a quick flick of the Commodore's centre console LPG switch, the final leg of 552.6 km was completed on gas in five hours and 26

minutes at an average of 11.03 litres per 100km or about 26 mpg. Total LPG consumption was 60.9 litres.

The fuel still in the tank when we arrived in Adelaide would have been good for another 150km, giving the dual-fuel VT a total range of more than 1500km.

And this was no feather-footed economy run. The average speed for the trip was 101.9 kmh. This included traffic in and around Sydney and Adelaide, slowing for every local speed limit, stopping at several roadworks and negotiating road-bound cattle herds.

This meant that the car had to be driven at the open road speed limit of 110 kmh whenever possible to post a realistic average speed.

Trip time from Sydney to Adelaide was 13 hours and 30 minutes for a total distance of 1376.6 km, while specified safety rest breaks added to the actual time on the road.

The car carried two men and their luggage, adding 240kg or the equivalent of three average adults.

If overtaking was needed, I revved the engine hard to minimise the amount of time on the wrong side of the road, as anyone would. It wasn't just a chance to trickle along and help give Holden a good fuel figure. A warm day on the

desert fringes of the Sturt Highway also meant the air-conditioning was working overtime.

The VT Commodore has been criticised for its extra weight, but during the Sydney-Adelaide run I was surprised to find the figures were better than many four-cylinder cars.

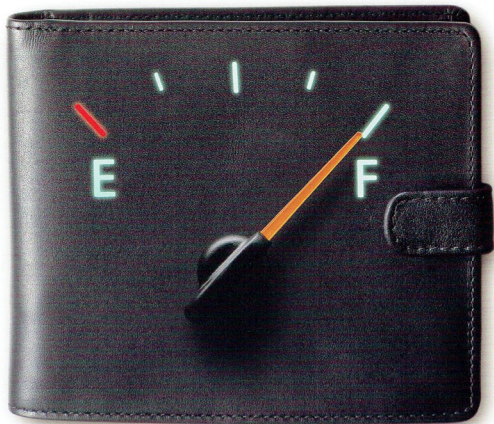
There were also some interesting money numbers, including LPG use which cut overall fuel costs by 55% at city prices despite the extra consumption. It's a worthwhile saving, but there is still the extra \$2000 for the dual-fuel option.

But the more fuel you use the more you save, so with mainly city running the LPG option will have paid for itself by 40,000km. A mix of city and rural running similar to the Sydney-Adelaide run will push the break-even figure out closer to 50,000kms.

Footnote: Figures were calculated using the Commodore's trip computer after a speedo check leaving Sydney. A fill-up check against the computer showed it took on 74.5 litres of ULP when the trip computer showed that 75.01 litres had been used, a tiny half litre discrepancy over 824 km.

ULP cost: \$52.43 LPG cost: \$15.80  
Total Fuel Cost: \$68.23 or under \$35 for each occupant.

# Stays full longer with Holden LPG.



Is money going out of your wallet in the fast lane? Then ensure your



new Commodore sedan or wagon<sup>†</sup> is factory fitted with genuine Holden LPG. Only fully integrated Holden

LPG is designed and tested specifically for the sophisticated engine management system of your Commodore, ensuring maximum performance and economy from every litre. In fact, it can almost halve your fuel bill.

According to the authoritative fleet magazine, *Business Motoring*, you only have to drive around 40,000km for the system to pay for itself.\*

What's more, Holden LPG is backed by the full 3 Year/100,000km new car warranty.

Talk to your nearest Holden Dealer about all the advantages of factory fitted LPG. Or you can call 1800 035 464 for more information.

**HOLDEN COMMODORE**  
Wouldn't you love to drive one?



Official Automotive Partner



# A little something on the side

Holden is addressing the devastating results of side-impact crashes.

Paul Ellis reports

**B**ANG – you're alive! It happens with the sound and speed of a bullet firing, but when an airbag is triggered a life is often saved, instead of lost.

The newest airbag explosion – and potentially the greatest life saver – comes from the side airbag which inflates to prevent possible fatal chest and head injuries in a side crash.

Holden has developed the first side airbag for an affordable new car and will begin fitting it into the front seats of its latest VT Commodore within three weeks.

## Affordable

It is not the first side airbag system in the world, but Holden says it is one of the best – and most affordable.

It will add around \$1000 to the price of a VT Commodore when ordered as a pair on Acclaim, Berlina and Calais. But side bags will be standard on the limited-edition 50th Anniversary Calais, due soon.

The side-impact airbags are also expected to be available in the smaller Holden Vectra when the car is made in Australia – instead of being shipped from Europe – next year.

Holden spent three years and \$5 million developing the first Australian-made side airbag.

The arrival of the side airbag system continues Holden's work on safety, which is giving the company – and its safety chief Laurie Sparke – a worldwide reputation.

It was the first Aussie carmaker to fit a driver's airbag, passenger airbag and now the side airbags.

But Holden is not getting carried away, maintaining airbags do not provide immunity to injury, just increased protection.

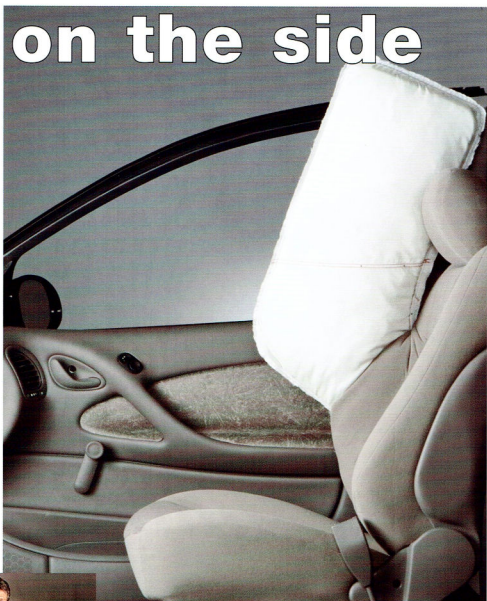
"They are a huge step forward, but please don't think they provide immunity," said Mr Sparke. Holden's manager of advanced engineering.

"Reducing injuries is the major focus of Holden's safety development. We have again used the best available protection."

Ford's airbag approach to the new AU Falcon will be revealed in less than six weeks.

Holden's side airbag was developed in response to research by the Monash University Accident Research Centre (MUARC) and Holden into more than 300 serious Australian crashes.

It showed that fatalities and serious injuries from side crashes are almost as frequent as those from frontal crashes, despite severe front crashes out-numbering side crashes.



**Air apparent:** Holden's seat-positioned sidebag (above) which will deploy effectively no matter what your seating position (below).  
**Left:** Holden safety chief Laurie Sparke.



"Side-impact crashes are more hazardous for the vehicle occupants than frontal crashes," Mr Sparke said. "This is because of the limited structure (amount of car)

for energy absorption in a side crash." The Commodore side bag is similar to the one in the new Saab 9-5 and 9-3 models. It is mounted in the outer side of the front seats' backrest and blows through the seat foam and trim material.

## Quick fire

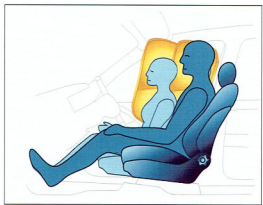
Sophisticated electronic sensors decide in around five milliseconds into a crash whether the side bag is needed, compared to 20 milliseconds for a frontal crash where evaluation speed is less crucial because of the extra bodywork between occupants and the crash object.

Holden says they might not fire in a frontal impact or a crash on the other side of the vehicle, and cannot be accidentally triggered by minor bumps, scrapes, or by slamming a door heavily.

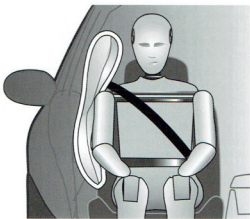
The side bag inflates at the bottom first to provide chest protection before filling at the top to cushion the head.

The whole process from contact to cushioning takes between 25 and 80 milliseconds – less time than it takes to blink an eye.

This is a good start but I'm sure it will be another 10 years before we've got the optimum system," Mr Sparke said.



# COMMODORE THE FIRST AUSTRALIAN BUILT CAR WITH SIDE IMPACT AIRBAGS



Designed specifically for Australian conditions, Commodore's unique 2 stage side impact airbags first help protect the chest then the neck and head.

The advanced technology and thinking that has gone into Holden's side impact airbags is considered to be amongst the best in the world.

Commodore's optional side impact airbags\*\* are just one part of

Holden's comprehensive list of safety features.

Other features include Independent Rear Suspension, ABS brakes, seat belt pre-tensioners as well as the protection of passenger and driver's airbags.

All of which adds to Commodore's leading status as the current Wheels 'Car of the Year' and Australia's most popular car.\*

See your Holden Dealer, call 1800 035 464 for a brochure or visit <http://www.holden.com.au/commodore>.

**HOLDEN COMMODORE**  
Wouldn't you love to drive one?

\*Sales leader (FACTS 1386/1987/1988) \*\*Available as an option on Accolam, Berlina and Holden C-Series.



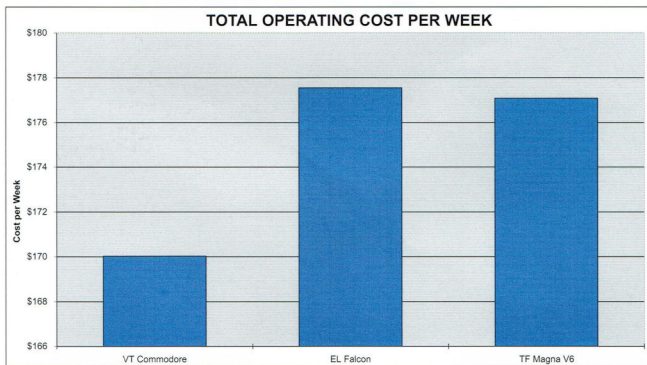
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<b>TOTAL VEHICLE OPERATING COSTS</b> (BUSINESS USE, TRAVELLING 30,000KM PER YEAR OVER 3 YEARS)			
<b>DEPRECIATION (Using Glass's Guide Residuals)</b>	<b>VT Commodore</b>	<b>EL Falcon</b>	<b>TF Magna V6</b>
Original new price of vehicle (as at June 1998)	\$30,500	\$29,950	\$29,800
Residual Value of vehicle at 3 years / 90,000KM	57.0%	0.55	0.52
Depreciation cost over 3 years	\$13,115	\$13,478	\$14,304
<b>Depreciation cost per week</b>	<b>\$84.07</b>	<b>\$86.39</b>	<b>\$91.69</b>
<b>RUNNING COSTS: As published by NRMA</b>	<b>VT Commodore</b>	<b>EL Falcon</b>	<b>TF Magna V6</b>
	<b>AVERAGE RUNNING COSTS IN CENTS PER KILOMETRE</b>		
Fuel	10.40	10.90	9.10
Tyres	1.90	1.90	1.90
Service & Repairs	2.60	3.00	3.80
Total Running costs (Cents per KM)	14.90	15.80	14.80
<b>Total Running cost per week</b>	<b>\$85.96</b>	<b>\$91.15</b>	<b>\$85.38</b>
<b>TOTAL OPERATING COST PER WEEK</b>	<b>\$170.03</b>	<b>\$177.55</b>	<b>\$177.08</b>

SOURCES: COMBINATION OF GLASS'S GUIDE RESIDUALS AND NRMA VEHICLE OPERATING COSTS - JUNE 1998 EDITIONS

Note:

1. Total operating cost excludes Rego, Insurance, and interest costs associated with Financing the vehicle purchase.
2. Original new Prices as at June 1998.
3. All costs calculated on 6 cylinder base model sedan with Auto transmission.



SOURCES: COMBINATION OF GLASS'S GUIDE RESIDUALS AND NRMA VEHICLE OPERATING COSTS - JUNE 1998 EDITIONS  
**CONCLUSION**  
 BY CHOOSING COMMODORE OVER ITS COMPETITORS, FLEET OPERATORS STAND TO SAVE \$366 PER VEHICLE PER YEAR. THEREFORE A FLEET OPERATOR RUNNING A 1,000 VEHICLES STANDS TO SAVE IN EXCESS OF \$366,000 PER YEAR ON FLEET COSTS SIMPLY BY CHOOSING COMMODORE OVER ITS COMPETITION.

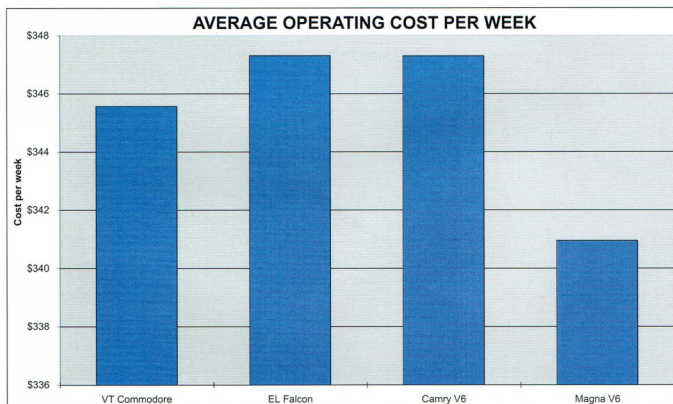
**MOTOR VEHICLE OPERATING COST COMPARISON  
BUSINESS USE TRAVELLING 30,000 KM PER YEAR**

<b>STANDING COSTS:</b>	<b>AVERAGE COST IN CENTS PER KILOMETRE</b>			
	<b>VT Commodore</b>	<b>EL Falcon</b>	<b>Camry V6</b>	<b>Magna V6</b>
Depreciation*	20.60	20.30	21.10	20.10
Fringe Benefits Tax	7.70	7.60	7.90	7.50
FBT Parking	6.30	6.30	6.30	6.30
Interest	5.30	5.30	5.50	5.30
Registration, Insurance, NRMA M/ship	5.10	4.90	4.60	5.10
<b>RUNNING COSTS:</b>				
Fuel	10.40	10.90	9.50	9.10
Tyres	1.90	1.90	1.90	1.90
Service & Repairs	2.60	3.00	3.40	3.80
<b>TOTAL AVERAGE COST PER KM (Cents per KM)</b>	<b>59.90</b>	<b>60.20</b>	<b>60.20</b>	<b>59.10</b>
<b>TOTAL AVERAGE COST PER WEEK</b>	<b>\$345.57</b>	<b>\$347.31</b>	<b>\$347.30</b>	<b>\$340.95</b>

**SOURCE: NRMA VEHICLE OPERATING COSTS - JUNE 1998 EDITION**

Note:

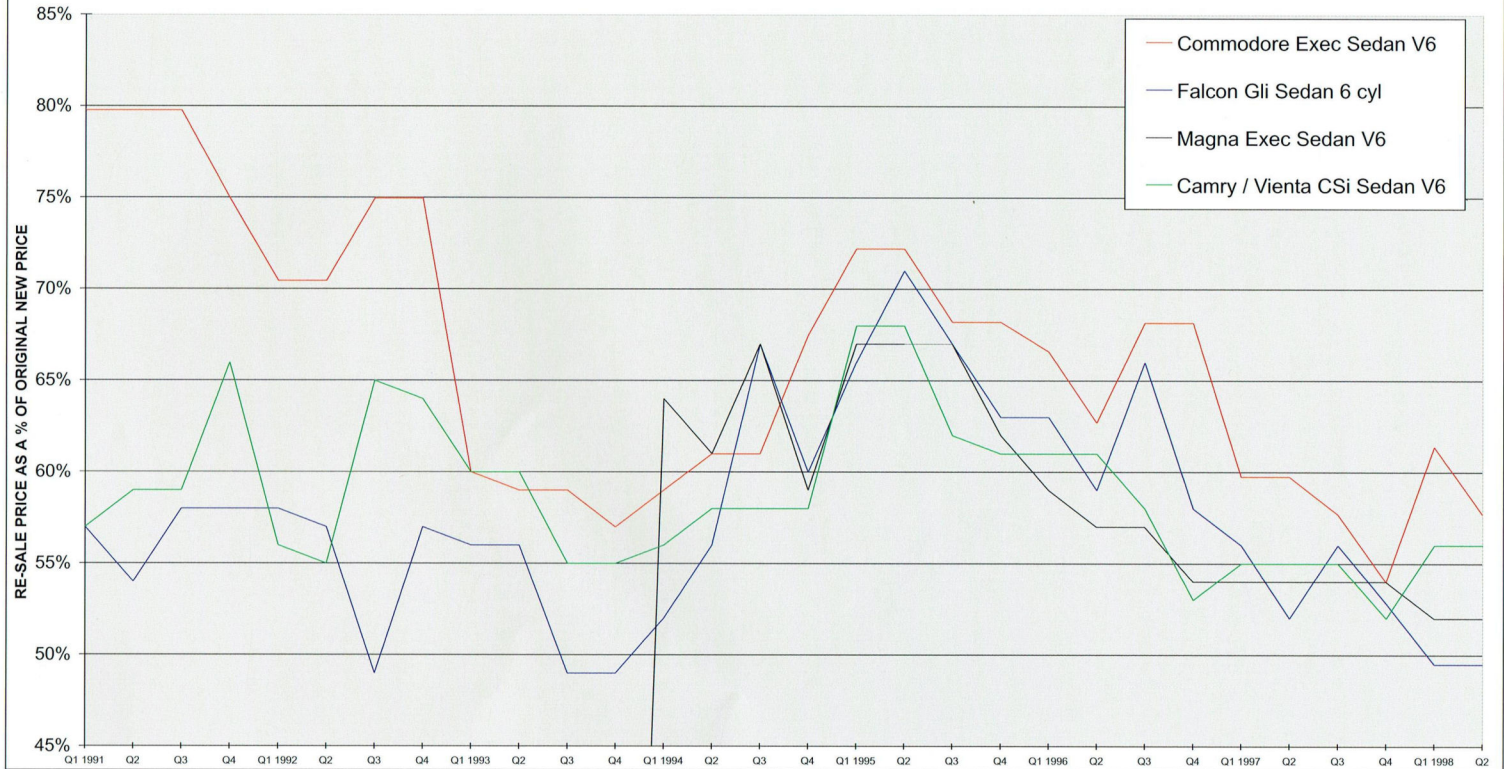
1. Operating costs on the above four vehicles calculated on 6 cylinder base model with Auto transmission.
2. \*Depreciation has been calculated using the taxation rate of 22.5% diminishing over a three year period.



**SOURCE: NRMA VEHICLE OPERATING COSTS - JUNE 1998 EDITION**



## RE-SALE VALUE OF 3 YEAR OLD / 60,000 KM UPPER MED VEHICLES

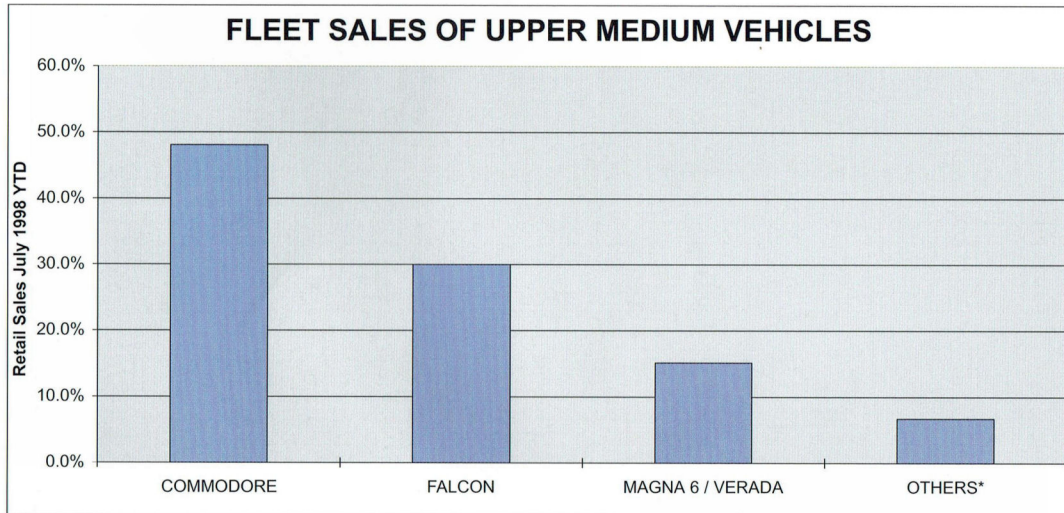


**SOURCE: ALL DATA SUPPLIED DIRECTLY BY GLASS'S GUIDE PTY LTD**

- NOTE:**
1. Re - sale %'s = Trade price as a % of original new price.
  2. Trade Price = The price a Franchise car dealer would pay for the vehicle in "good condition" considering its age.
  3. New Price = Manufacturer's recommended retail price including sales tax.
  4. Time periods on the X axis refer to the year and quarter in which the 3 year old vehicles were re-sold.

### UPPER MEDIUM SEGMENT ANALYSIS

Commodore, Falcon & Magna 6 / Verada are the three vehicles that have been analysed in terms of Operating costs and residual values. This is due to the fact that other carlines such as Camry 6, Mazda 626 and Vectra 6 account for a combined market share of less than 7% of the Upper Medium Fleet Market and consequently these vehicles can be considered only minor players.



UPPER MEDIUM FLEET SALES		
JUL 1998 YTD	UNITS	SHARE
COMMODORE	44134	48.1%
FALCON	27589	30.0%
MAGNA 6 / VERADA	13929	15.2%
OTHERS*	6195	6.7%
TOTAL	91847	100.0%

Source: Vfacts Retail Sales buyer type report

\*Others includes Camry 6, Vienta 6, Mazda 626 6 cyl, Vectra 6 cyl