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But the question is relevant in the face of a global push for so called “driverless” or autonomous buses (and other vehicles). Governments want their concept of driverless vehicles (capable of moving a whole city on-demand, silently and with zero emissions in a moment?) to come in now rather than later so some serious pressure is being applied and money spent to facilitate their mass introduction. But it’s not that simple to solve 21st century mass transport problems in one fell swoop, not as easy as pulling all driver operated buses off the road and replacing them with ‘autopilot’ versions.

It is a work in progress … mostly in the ‘test’ stage at this point. We field plenty of questions and hear plenty of opinions at C&B magazine about driverless/autonomous buses and think it’s time for a reality check.

People are worried about their jobs but as far as we are concerned, bus drivers will be needed as far into the future as we are prepared to guess and that means years and years.

So bus driver’s jobs won’t be disappearing any time soon in fact, the opposite could apply as buses are increasingly being turned to as an economical form of public transport compared to the cost of building railways and other mass transportation.

You have to remember that even L5 (the highest level for autonomous vehicles) still restricts them to specific routes and other limitations.

We can’t see that changing unless there’s a quantum leap in technology that allows what many people think an autonomous vehicle is – something you jump in, set the destination and then let the vehicle take you there while you watch the news. That ain’t about to happen any time soon folks.

As it is rolling out, we are seeing small ‘buses’ driving on designated routes at slow speed. Yes, they’re here but the biggest we have seen so far is a Chinese job that carries 19 passengers around a designated circuit.

When you boil it all down, the same result could be achieved with a moving walkway, a people conveyor belt driven by steam… joking.

Initial cost is an issue for driverless buses with even the smallest and cheapest 12 passenger models currently going for about $300,000+ a pop.

Not a lot of difference between that and a full size route bus.

Nothing even approaching an interstate coach is on the reality spectrum in any viable form.

Even route buses are problematic for driverless application because there simply isn’t enough driverless infrastructure to drive them with any degree of safety or accuracy. And who is going to fund all this???

So all you busies out there, cool it and keep on doing what you do best – drive buses at the highest level of proficiency. You most probably won’t make it to the redundancy stage as a result of a driverless bus.

In this issue we take a look at the Transport for NSW’s push into transport on demand systems to take you the last mile to your workplace or home, there is a great story on Scania’s new Hybrid buses bound for our shores, we travel to China to take a look at King Long’s Apollo mission for unmanned buses, while back on our own shores we look at a new player in the bus market from China with Challenger Bus, being imported by a Far North Queensland operator. We also visit Interline Buses in Sydney’s South West to see why they have returned to the Benz camp after two decades and finally a very interesting story on Victoria Police’s new Alcohol and Drug Testing Buses which are a different and compelling use of a bus chassis.

Hope you enjoy the mag as much as we enjoyed putting it together. Until next time drive safely.
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A CONSORTIUM of engineers, manufacturers and researchers have joined forces to investigate how scandium, a rare earth mineral, can be used to help produce the next generation of lightweight electric buses.

The Bus Optimisation Project is a partnership between Volgren, Australia’s largest bus body builder; Deakin University; scandium miner Clean Teq; and the Advanced Manufacturing Growth Centre. The partnership provides an opportunity to incorporate the latest thinking in metallurgical engineering with future bus design and advanced manufacturing techniques.

Peter Dale, CEO of Volgren, said as the global market for electric buses expands significantly, a lighter bus body will be a game changer, improving both range and capacity. “Electric buses are without doubt the technology of the future, however, at the moment [they] are constrained by weight. The challenge with current battery electric vehicles is the low energy density of Energy Storage Systems (ESS) or batteries in comparison to diesel fuel. The result is a vehicle’s operating range that is intrinsically linked with vehicle mass.

“Reduced vehicle range can be managed through increased frequency of charging stations, but this is costly and complicates bus route management. “A lighter bus allows for the inclusion of a larger battery, giving extended range. It also equates to a greater passenger carrying capacity.”

Dale said the Bus Optimisation Project was initiated after Volgren approached Deakin with the challenge of removing up to a tonne of weight from their popular low-floor city bus, Optimus. This, they knew, would be a difficult task considering Volgren already boast the lightest aluminium bus body of its type in Australia — and arguably the world.

“Deakin’s extensive capabilities in design, forming and metal alloy
development have placed them at the forefront of metallurgical engineering. “Their researchers have already had success incorporating scandium into the aeronautic sector and we believe that expertise can form the foundation of the next generation of Volgren aluminium bus designs.”

The partnership between Volgren and Deakin also includes a PhD scholarship, to ensure that the research remains grounded in industry application.

Dr Thomas Dorin, Associate Research Fellow at Deakin University’s Institute for Frontier Materials, which focuses on innovation and development in materials science and engineering, said Deakin’s researchers will spend significant time at Volgren’s manufacturing facility during the research phase of the project.

“Our researchers will explore the potential of varying Volgren’s alloys’ compositions by using scandium additions to design a new alloy with the same or higher strength combined with better extrudability.”

Dr Dorin said adding scandium in only fractions of a per cent to aluminium “promotes a smaller, even-sized grain structure during solidification” and significant strength benefits without the need for heat treatment. Besides increased strength and thus potential lightweighting of parts, it can also provide benefits without diminishing aluminium’s desirable attributes.

“The beauty of scandium is you do not need a lot in the material to make it a lot stronger.”

“And because we do not put a lot of scandium in the material you do not affect the other key properties too much.”

Dr Dorin said the initial laboratory scale extrusion trials will be conducted at Deakin. During the project, contact will be initiated with billet casters and commercial extruders in order to conduct industrial-scale trials.

Dale said the partnership with Deakin, continues Volgren’s strong relationship with academia; combining world class research with industry applications to stay at the forefront of bus development.

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AND SCORES BIG HYBRID CONTRACT

MEANWHILE VOLGREN HAS SCORED AUSTRALIA’S LARGEST HYBRID BUS ORDER SO FAR WITH CDC VICTORIA PLACING AN ORDER FOR 50 VOLVO BASED HYBRIDS FOR USE ON ROUTES IN MELBOURNE SUBURBS INCLUDING WYNDHAM, OAKLEIGH AND SUNSHINE.

The new Volgren-bodied, Volvo-hybrid low-floor buses for the CDC bus fleet it is claimed by the Victorian Government, will improve passenger access and safety and boast Euro 6 emission standard which is the highest and cleanest level for diesel commercial vehicles in the world at the moment.

Volgren will build and fit the Optimus bodies at its Dandenong operation and will help secure manufacturing jobs and support the local automotive industry to develop new capacity and innovation, the government statement said.

The introduction of the new Volgren-bodied, Volvo-hybrid buses into the local CDC bus fleet will feature low-floor layouts to improve passenger access and safety, and are Euro 6 emission standard* – the “highest and cleanest level for diesel” in the

The new Euro 6 buses will be Volvo BSLH Hybrid chassis, built in Sweden and bodied in Melbourne. Trials in Victoria found hybrid buses used 30 per cent less fuel and reduced noise significantly during idling and departing from stops, it’s claimed.

The new hybrid buses will be phased into the CDC Victoria bus fleet over the next three years as part of the new contract with the operator. The first bus will enter service late 2018 with at least 30 new hybrids to be delivered in the next 12 months, it’s stated with the entire fleet of 50 buses to be delivered by 2022.

Victorian Minister for Public Transport, Jacinta Allan said: the government is continuing to invest in new technologies, new vehicles and better services to improve public transport in the state.
VOLVO BUSSES has just launched a new coach platform with a focus on design, safety and comfort to persuade more people to travel by coach, even on long-distance trips.

President of Volvo Buses, Hakan Agnevall said at the launch function late May “This is a historic step, the biggest renewal of our European coach range for more than 20 years. I’m convinced that our customers and their passengers will appreciate the result.”

The new vehicles target tourist and line-haul operations with two models available – the luxurious Volvo 9900 and the versatile Volvo 9700.

Both feature a dynamically styled exterior with crisp lines and smooth sides, taking aerodynamics to a new level.

On the 9900, the new “Z shaped” window lines combine with a gradient “theatre floor” seating of passengers to introduce a whole new design language for coaches.

Inside the coach, the design team attached considerable importance to both visual and tactile quality. Passengers are greeted with a calm and balanced light palette as well as tasteful combinations of textile and leather, set off by accent details in metal.

To guarantee passengers a high-class holistic experience, Volvo has invested heavily in comfort-enhancing solutions such as ergonomic passenger seats and a well-insulated interior with a low noise level.

The climate unit is developed to provide a steady, pleasant temperature throughout the bus irrespective of outside conditions.

The new Volvo 9900 also offers an extra-high floor and large glass windows to provide excellent views to the front and sides.

The interior roof is eight centimetres higher than before and the straighter transition between walls and roof creates an airier feel with significantly greater space.

Both the Volvo 9700 and the Volvo 9900 feature comprehensive active and passive safety features, among them are more robust frontal impact protection (FIP) and a driver alert system that monitors the bus’s movements and issues alerts if the driver is tired or not concentrating on the road.

There’s no word on powertrains at the moment so stay tuned.
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LA TIMES UNCOVERS ELECTRIC BUS PROBLEMS IN CITY OF ANGELS

THE LOS ANGELES TIMES has published an expose on the failings of the efforts to deploy electric buses in California’s largest city through its LA Metro operation.

The Times published a major story in a recent Sunday edition uncovering extensive problems with LA’s Metro’s efforts to deploy electric buses from massive Chinese bus manufacturer, BYD.

The article cited the fact that BYD had built an effective influence campaign to smooth its journey through L.A.’s procurement process, even after an initial five-bus deployment had to be sent back for failing to perform, documents and evidence in the article show.

The story reports BYD buses ran out of charge before their designated range, wouldn’t start and had trouble climbing hills in downtown L.A.

The news overturns much of the rosy narrative that electric bus proponents have been selling on their way to total domination of the public transit segment as cities commit to full electrification of bus fleets.

The title of the Times piece, “Stalls, stops and breakdowns: Problems plague push for electric buses”, refers not only to BYD but to the broader market segment.

“That was an article about a company, but the headline was about a category,” said Ryan Popple, CEO of rival electric bus maker Proterra. “I hope that people don’t paint a broad brush over the whole category,” he added.

In winning more public transit contracts with electric buses, Proterra, Canadian manufacturer New Flyer and BYD have pitted themselves against the incumbent diesel bus and the natural-gas bus industries.

Municipalities like L.A., Mexico City, Cape Town and San Francisco raised the stakes further by adopting goals for fully electrify their fleets.

Reports of electric bus performance shortfalls give opponents of the products new ammunition. Indeed, advocates for natural-gas-powered vehicles jumped on the opportunity to share the story, describing it as evidence that the rush to electrification is misguided.

Todd Campbell, chair of the California Natural Gas Vehicle Coalition, said the electric bus push was the wrong way to go and that the city needed to stop spending precious resources on buses that don’t run.

“If the technology is falling short of expectations, how certain can state authorities be of the true air quality benefits that will be achieved by heavy-duty transformational technologies with zero tailpipe emissions?” he wrote.

The story raised questions about the role of political connections in L.A.’s bid evaluations for major contracts. More challenging for the electric bus industry in the USA though, is the assertion that electric buses cannot match the operational abilities of the internal combustion engine vehicles they replace.

The initial five BYD buses performed far below the average distance travelled by L.A.’s conventional buses and some of them stalled getting up hills. Metro took them off the road within five months due to concern among staff about the vehicles’ reliability.

BYD Senior Vice President Macy Neshati attempted to explain this underperformance by saying Metro drove the buses on hills that were too steep. Such a defense may prove deeply unsettling for transit agencies who wish to purchase buses capable of operating on their assigned routes in cities with much bigger hills than the generally flat downtown areas of LA.

All of this might give the impression that electric buses as a class are have trouble driving. Proterra says it has never told a customer to change routes in order to serve them with electric buses and the company works with transit agencies to identify the range and battery capacity required to serve a given route. Particularly long and arduous routes might not be doable with the current iteration of bus batteries, other routes might require a more powerful dual-motor drivetrain.

“You’re not just going to eliminate the usage of diesel and natural gas for one of the largest commercial and diesel categories, and have natural gas and diesel go quietly,” Popple said.

Despite the recent news, Proterra’s boss Popple said he remains confident that electrification is the future of public transit.
Scania’s Communicator gives School Bus operators total peace-of-mind.

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VOLKSWAGEN GIVES NAVISTAR AN ELECTRIC LEG UP

The benefits of Volkswagen buying a significant shareholding have started to reveal themselves at US commercial vehicle maker Navistar with one of the company’s subsidiaries, IC Bus revealing a zero-emission school bus using VW sourced technology.

The IC Electric Bus chargE is a fully electric school bus that makes conventional school buses seem like ancient, smog-spewing relics.

The chargE is the latest project by IC Bus, one of the leading school bus manufacturers in the USA.

IC Bus built the charge in partnership with Volkswagen Truck & Bus and the companies plan to sell a production version of the chargE late next year or in early 2020.

Volkswagen has a 17 per cent share Navistar and has already stated it is considering acquiring a larger controlling interest in the company.

Navistar has displayed the chargE at a large green transportation conference in Long Beach, California to demonstrate the technology on public roads.

The charge has no diesel engine noise and no exhaust emissions and is said to provide a smooth and quiet ride with instant torque, which allows it to take off from traffic lights with ease.

Low noise means passengers can converse without raising their voices to a shout.

Volkswagen provided the electric motors for the chargE, taking two of the motors used in its emissions-free passenger cars and fusing them in a single custom unit. There is a one-speed transmission housed within the rear axle. The result is a powertrain that produces up to 260 kilowatts, or the equivalent of 349 horsepower. Its biggest problem could be drivers overhearing back-of-the-bus conversations with perfect clarity.

Typically a bus of this size has around 13 rows of seats for up to 78 people.

For the demo, the middle rows of the chargE seating were removed to make space for a glass bottom to showcase the electric components working underneath the floor.

Navistar is banking on the huge potential savings of electric buses. Navistar’s vice president of product marketing, Steve Gilligan said that what’s really changing is the affordability of the technology.

“Since electric powertrains have fewer moving parts they require less maintenance and repair and we believe less downtime will offset any additional up-front cost with the result being a lower total cost of ownership over the life of the vehicle,” said Steve Gilligan.

California has particularly embraced electric buses and is providing a helping hand to school districts interested in an electric bus fleet.

Three utility companies will install electric charging infrastructure as part of a $US43 million plan approved by the California Public Utilities Commission with school buses are top of mind.

The adoption of electric buses will help the environment and provide school districts with a boost in public image, said Dean Oppermann, chief engineer for Navistar.

Navistar is claiming that depending on the district’s needs the chargE is capable of a 200km range on a 10-hour charge. The average school bus route in the US is closer to 100km, according to Navistar.

The company plans to offer a modular range of powertrain options to fit each district’s needs and budget. Navistar will also assist with the planning the most effective charging schedules and infrastructure build.

“We want to work with our customers to sell them the bus they need, not the bus that fits everyone,” Oppermann said.

Navistar is looking to act quickly and the company touted its bus to dozens of school districts and government agencies on a tour from Seattle to San Diego. ■
THANKS TO OPTARE’S ADVANCED MONOCOQUE CONSTRUCTION ITS BUSES CAN DELIVER BIG SAVINGS FOR AUSTRALIAN AND NEW ZEALAND OPERATORS

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A BRITISH COMPANY which pioneered a special networking website for bus and coach operators in the UK has launched the program in Australia and is hoping to give smaller operators in particular a way of improving their efficiency and bottom line.

Don’t Travel Empty (DTE) has been operating in the UK for the past ten years and now has around 3000 members after founder Anthony Maratt who as a small bus operator recognised that even on busy days his fleet utilisation could be better.

According to Geri Clarke who has been tasked with starting DTE in Australia Maratt realised that if that was the case with his own buses it was probably the case with many other fleets.

“DTE was initially aimed at creating a resource for bus and coach operators to reduce the number of empty journeys coaches were making but it has grown into a community of bus operators with a number of tiers and a variety of services including filling empty travel legs, passenger recovery, driver sourcing, vehicle sales, safety plans and critical incident management,” said Geri Clarke.

“Our main aim is to maximise operators profits by reducing the amount of empty journeys their coaches make,” he added.

“Every year, millions of litres of fuel are wasted by coaches travelling empty so your revenue could increase if each of your empty legs were potentially filled with passengers,” said Geri.

Clarke says that DTE is looking to attract bus and coach operators Australia wide and to expand as quickly as possible and will be offering operators a free three month trial to allow them to understand what the program can do and the advantages it can deliver.

“DTE’s suite of management systems can minimise the risk of operating empty legs by matching your needs with those of other operators,” he added.

The DTE program also includes Coach Records Module (CRM) which is designed to streamline an operators business processes and maximise profits with a cloud based system that can be accessed anywhere by laptop, tablet or phone. It also features a Vehicle Maintenance System to organise maintenance of the fleet and to control costs and to aid compliance and report and record collation.

“Emergencies such as having a coach break down and the need to ensure passengers aren’t left in a remote location is handled by DTE to provide swift mechanical assistance and passenger recovery using our data base,” said Geri.

“The aim is to enable small bus operators to perform like a bigger fleet and to provide more streamlined services to operate more efficiently,” Geri added.

Operators interested in DTE can go to the company’s website at www.donttravelempty.com or phone 0011 44 8455485003 (Australian number is pending).
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* Challenger Bus and Coach will be coming to New Zealand soon!..
TORRENS TRANSIT, the Adelaide based subsidiary of bus giant Transit Systems has signed a contract to acquire Adelaide’s Light City Buses (LCB) from Broadpectrum.

The transition will involve the transfer of more than 370 buses and 700 employees into the Torrens Transit network. The services to be transferred were previously operated by Torrens Transit from 2005 to 2011.

Torrens Transit has a history spanning 18 years in Adelaide and is the only Australian-owned operator in the state. According to Transit’s announcement it will lean on its own local network knowledge to work with Government to investigate and implement service improvements including the potential relinking of services across the areas covered by Torrens Transit’s three contract areas.

Transit Systems Group CEO, and local Adelaide resident, Clint Feuerherdt added that they would be looking to reduce city congestion, while increasing frequency, connections and convenience.

“We have a successful history of performance in Adelaide, and we are keen to deliver improved services through our local knowledge, combined with our global experience in some of the world’s best public transport networks across Australia, London and Singapore,” he said.

“This transaction enables us to further bring the benefits of our experience as a leading...
operator in London and Singapore to Adelaide. We are looking forward to bringing world’s best practice to even more Adelaide commuters.”

The group also owns and operates BRTDJ, Australia’s first demand responsive public bus transport solution, holding the first contract in Sydney to blend both mass and on demand transit, as part of the Region 6 contract in the Transport for NSW network.

“We are excited to work with the South Australian Government to deliver improved services for the Adelaide community and ensure the moving public can get on with their day in the most time efficient manner possible.”

All timetables, routes, and bus stops in Adelaide will continue to be regulated by the Government, and all buses and other assets such as depots will remain under the control of Government. All LCB staff will be offered a position with Torrens Transit.

Fares will continue to be set by the Government, just as they are today, and passengers will continue to use their metrocard cards as they currently do.

The transaction is in the final stages of due diligence and is expected to complete in early June 2018.

**Meantime** the tragic death of a Transit Systems employed bus instructor during a controlled company training exercise in a Sydney car park, recently has shocked the Australian bus transport industry.

In a statement following the tragic news Clint Feuerherdt, said, the company had lost a member of its family and that everyone at Transit was devastated by this incident.

“It is with great sadness that I report one of our trainers was involved in an accident while taking part in a routine training session in a vacant car park near Smithfield Road, Smithfield [NSW].

“His injuries were fatal and the driver was taken to hospital.

“We are cooperating with officers from the Metropolitan Crash Investigation Unit, who are conducting a full investigation. We are also conducting a full investigation.

“No passengers or members of the public were involved, as it was a dedicated training session.

“All resources are being made available for counseling and other support for next of kin, trainees and staff.

“We are in a state of shock and grief and our sympathies are with the family of the trainer, who was much respected by his colleagues,” said Feuerherdt.

“We will offer every required resource to the authorities and to those affected by the accident.”

Police are investigating the circumstances that led to the bus hitting the instructor, who died at the scene.

“It was a very tragic accident,” NSW Police Assistant Commissioner Michael Corboy said.

“It’s a good reminder for pedestrians to keep a lookout especially around buses.”

Police Minister Troy Grant said the accident was “a stark reminder of how quickly a life can be taken for pedestrians”.

“It is a tragic situation that the crash investigation unit will get to the bottom of to give answers … to the families that have been devastated by [Thursday] morning’s event.”

Transit systems currently operates bus services in Parramatta, Fairfield and Liverpool, NSW. ■
DAIMLER has showed off a new electric school bus, called Jouley, with a range of up to 160 km at a major event to unveil a high-tech vision of the future at its Portland Oregon HQ as part of a major electric and autonomous vehicle announcement recently.

The Freightliner based school buses Daimler says are an ideal spot to begin electrification, because short, predictable routes provide time to recharge and because of the health hazards from diesel exhaust.

“The discussion begins with governmental agencies trying to reduce the amount of the emissions, especially in places like California,” Nielsen said.

A conventional diesel school bus might cost $AUD 130,000 or more, Nielsen said. Daimler hasn’t announced pricing for its electric buses, but he said they would likely cost two or three times that.

However, Nielsen said US states such as California are offering six-figure incentives to persuade bus companies to switch away from diesel. That’s enough to kick-start the market, he said, and Daimler plans to begin shipping its Jouley buses in limited quantities next year.

Ultimately, Daimler is counting on innovation to bring the cost down dramatically.

“The government incentives will help ease the pain, but as it gets to higher levels of adoption it has to pay for itself,” Nielsen said.

The vehicles Daimler showed off were nearly silent, a dramatic contrast to diesel’s traditional rumble. The trucks Daimler showed off boasted ranges from 370 to 400 km and can recharge 80 per cent of their battery in 60 to 90 minutes, depending on the model.

Daimler Trucks said it will invest millions of dollars to develop an automated commercial vehicle research centre at its North American headquarters in Swan Island Oregon.

Daimler showcased three large electric vehicles – including the school bus and two trucks it hopes will appeal to school districts and commercial fleet operators looking to improve air quality. ■
BYD’S INDIA PUSH

CHINESE ELECTRIC VEHICLE GIANT, BYD has teamed up with Indian industrial and tech company Goldstone and says it will manufacture 5,000 electric buses per year in India by March 2021 increase localisation content up to 70 per cent, senior company executives have said.

Goldstone-BYD recently unveiled its electric feeder bus fully manufactured in India and plans to make the country its manufacturing hub for exporting these vehicles to other South Asian nations.

“India will be the production and service base for South Asia because only India has the capability,” executive director of BYD India Mr. Zhang Jie said.

“India is a fast growing market for electric mobility and a complete ecosystem will be established in the country within the next 5 years,” he said.

Goldstone-BYD is currently assembling around 600 buses per year at Goldstone Infratech’s Telangana plant.

The company plans to scale up its manufacturing capacity to around 2,000 buses by the end of this year across various production facilities. Goldstone recently invested AU$20 billion in setting up a manufacturing facility in the Indian centre of Karnataka.

Naga Satyam, executive director at Goldstone Infratech, said the joint venture plans to scale up in a big way.

“We are in talks with a few state governments to set up a production unit. We are particularly looking to set up a facility in north India,” he said.

While the cost of battery remains the same, manufacturing in India does provide Goldstone-BYD some cost advantage due to the localisation factor. The company plans to manufacture 7, 9 and 12-meter buses in India.

The localisation content in electric buses sold by Goldstone-BYD in India currently stands at around 35 per cent. “I would like to have 100 per cent localisation if possible, but unfortunately we do not have the ecosystem here yet,” Xie said.

MCI TESTS FULL ELECTRIC COACH

MOTOR COACH INDUSTRIES say a full size MCI electric coach is set to go into production in 2020. They say coach operators in the US will be able to buy one from 2020.

The electric coach is called an MCI J4500E and will be based on a prototype that has just wrapped up the first stage of pre-production testing.

MCI is a transit bus and motor coach manufacturer and they said the tests ran flawlessly at both low and high speeds up to a sustained 110km/h on the highway.

So confident is the company in their new bus that an order book for it is open already.

The MCI J4500E features a high-torque electric drive system powered by a 450-kWh battery, rechargeable to 100 per cent in less than three hours.

“We’re enormously pleased by these early test results – our all-electric J4500E delivered smooth power across varied roadways and impressive results in acceleration, handling and ride quality,” says JP Pelletier, Vice President of MCI Engineering.

MCI engineers were particularly pleased with how quiet the bus proved to be – something sure to increase passenger comfort.

The coach will also offer potential operators best-in-class legroom, Wi-Fi, easy-access power outlets and overhead lighting.

The prototype coach will now move around North America for testing with potential public and private operators.

www.truckandbus.net.au 017
Our commuter bus habits, like taxis, shopping and entertainment are changing, largely thanks to our smartphone addiction and app culture! On demand small buses to get you from your home or work to a bus trunk route are here and if predictions are correct they will quickly become the norm. Editor Barnwell looks at how this latest disruptor is already being rolled out in NSW and how it will deliver on the Last Mile concept.
Uber has made huge inroads into Australia and the world's taxi system offering a cheaper, possibly more convenient service to the traditional cab.

Cabbies hate it but the fact remains, who doesn't want to pay less for a taxi ride.

Now, a version of the app-driven Uber model is moving to larger vehicles that see mini buses and small buses trialled in an on-demand public transport service at nine locations around NSW.

The NSW State Government wants public transport to move in this direction as it would potentially alleviate some congestion problems they are currently grappling with.

The idea behind the trial is to provide commuters with more choice in getting to large transport hubs, like railway stations, for travel to and from work or anywhere else for that matter. Some call it the ‘Last Mile’.

The on demand trial conveniently brings the bus to the commuter, or as near as practicable given timetable constraints and the volume of travellers.

C&B reported on the roll out of the Brij program by Transit Systems last year and that is just one piece of a larger jigsaw puzzle of commuter regions through Sydney, the Central Coast, Newcastle and Wollongong where Transport for NSW is signing up operators to service the Last Mile concept.

The NSW Minister for Transport and Infrastructure, Andrew Constance, said the trials would transform the daily commute for people across Sydney and the Central Coast.

Mr Constance said “We have on demand movies, on demand food, and now, NSW has on demand transport.”

Whether the trials will actually achieve the desired outcomes remains to be seen but the portents are good as pressure mounts on public and private transport in large metropolitan areas such as Sydney, the NSW Central Coast and even as far afield as Newcastle.

Eleven trials of “On Demand Transport” services are currently underway, nine using buses in the North West, Macquarie Park, North Rocks, South West, West, Eastern Suburbs, Northern Beaches, Sutherland Shire and Central Coast started to roll out in October last year with the last due to start in May on the NSW Central Coast.

The on demand service allows customers to book transport from or near their home to a local transport hub or other centres including local hospitals once they have set up an account and downloaded an app on their phone. Bookings can also be made online.
The area of Macquarie Park, an employment focal point near Ryde in Sydney, was first cab off the rank, so to speak, earlier this year providing a service to convey workers living within 15 kilometres of the precinct with fares starting at $2.60.

This service is run by Keolis Downer and uses a fleet of eight mini vans, six mini buses and one wheelchair accessible vehicle during weekday peaks and shoulders.

Keolis Downer is a joint venture between Keolis, the largest private sector French transport group, and Downer Rail, the Australian railway engineering company, which operates bus and tram services in Australia, including Melbourne’s Yarra Trams, Gold Coast’s G Link light rail, Newcastle’s bus and ferry network and a variety bus operations and routes in SA, WA and Victoria.

It’s envisaged that the NSW on demand service would boost transport capacity for people living in the region ahead of the start of Sydney Metro Northwest in 2019.

The mission is to encourage more people out of their cars and onto public transport including buses and trains.

Each of the eight trials is ‘unique’ and will have its own pricing structure ranging from $2.60 to $5.60 for a standard trip. Other areas included in the roll out of on demand trials are:

For instance in Bankstown in Sydney’s South West, the on demand bus service operates for visitors, patients and employees of Bankstown Hospital and operates 18 hours a day with a standard fare of $4 operated by Punchbowl Bus Company using a single bus).

In Edmondson Park a service to pick customers up from home or nearby location and drop them at the train station started earlier this year with a standard fare of $3.10 operated by Interline using a pair of mini buses.

On Sydney’s Northern Beaches the B-Line express trunk route from Mona Vale to the Sydney CBD started in 2017 and a service operated by Keolis Downer using eight midi buses connects passengers in various parts of the Beaches to B-Line stops with
a standard fare of $3.10. Next door in Manly, in the southern part of the Insular Peninsula, as locals refer to the area as, and also across the harbour in the Eastern Suburbs, the on demand service to pick customers up at home or nearby location and take them to ferries at Manly or Rose Bay wharves and to Edgecliff and Bondi Junction stations started late last year. This is operated by Transdev using six mini buses with a standard fare of $3.10.

Hills Bus is operating a service in the North Rocks/Carlingford area connecting customers to stations and various transport hubs in the area using a fleet of four minibuses.

Down south in the Sutherland Shire, Transdev is also operating five mini buses, with a service which started late last year in Jannali West, Sylvania, Caringbah and Gymea to pick up passengers and take them to transport hubs or local shops with a standard fare of $2.80.

As mentioned previously ‘Transit Systems’ owned operation service known as Brij, is operating its unique app based on demand system around Wetherill Park and Greystanes, connecting employment precincts to T-Way bus interchanges. The service started late last year using five mini buses with a standard fare of $3.10.

And finally starting in May on the Central Coast, Community Transport Central Coast is operating a service transporting passengers from to Woy Woy station from locations on the Woy Woy peninsula. Using a fleet of five mini buses with fares starting at $3.10.

Transport for NSW will use data from the trials to plan future public transport reforms across all areas of Sydney and potentially further afield.

All pilots in this trial will provide a standalone service that will not affect any existing local bus services.

The last of the trials to get underway is the Central Coast operation based in the Woy Woy area.

Like all the trials, it is slightly different to the others in that the trial will use a combination of taxis, hire cars and community transport vehicles (Renault mini buses) to collect passengers who book a journey.

The Woy Woy trial will operate in five geographical pick-up zones covering more than 80 pick-up points including people’s homes, and bus stops.

The new service will connect customers with existing transport hubs and Woy Woy train station.

The aim of the service is get customers to and from Woy Woy rail station with ample time to make it to Sydney or the chosen destination, and it will be there to pick customers up from the station on the way back.

If the trial is successful, multi-car families could potentially move to single vehicles, saving costs. On demand public transport also provides an alternative to walking and cycling to the station.

It’s clear that the old ideas of running large buses with capacity of more than 50 passengers across all routes with big vehicles lumbering through suburban back streets on meandering routes on at times random timetables is no longer a desirable model, particularly given the ability for apps and algorithms to bring smaller buses to places convenient to passengers and at a time that fits their schedules, transporting them to and from transport hubs, workplaces and homes, is a much more convenient and attractive proposition.

We stand on the edge of an urban transport revolution and that last mile will be the critical one. 

IF THE TRIAL IS SUCCESSFUL, MULTI-CAR FAMILIES COULD POTENTIALLY MOVE TO SINGLE VEHICLES, SAVING COSTS.
Improve Your Fuel Economy
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Allison has taken fuel economy to a new level with FuelSense™ 2.0. Through a set of proprietary software enhancements, FuelSense 2.0 provides city buses with a 4.3% improvement in fuel economy.* Using an infinitely variable combination of shift points, rather than relying on fixed points from a shift table, FuelSense 2.0 uses a learning algorithm to continuously find the ideal balance of fuel economy and performance. It'll even stand up to the heavy start-stop duty-cycles of fleets like yours. Discover the difference FuelSense 2.0 can make today.

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*Over current production baseline

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The arrival down under of the Optare bus brand really took flight in April when the British bus maker delivered the first batch of buses in a big 114 bus contract for major NZ bus operator Transit.

Some might chalk the achievement of winning that big contract down to the legendary Kiwi attachment to the mother country, which seemingly has lived on long after it passed by across the ditch in Australia. However, that would e a very superficial and largely false premise.

So who the hell is Optare and where did they come from? Well for those who are old enough to remember, Optare grew out of the ashes of Leyland, the bus brand that for many was the staple of Australian fleet operators through the 1940s, 50s, 60s and 70s.

Leyland went through hard times in the 1980s and 90s and morphed into Optare to give it a new and brighter image. It became ensnared in a financial malaise but was rescued by the Indian Hinduja Group a few years back.

The Hinduja Group is controlled by brothers, Srichand and Gopichand Hinduja, who are rumoured to be the United Kingdom’s wealthiest businessmen, with an estimated net worth of somewhere between A$12 billion and A$23 billion.
British bus maker Optare is relatively new on the bus scene down under but its recent success with a 114 bus contract in New Zealand has given the company some instant cred. We take a look at why the Kiwis have given the British brand a try and just who Optare really is.
The Hinduja group took a 75 per cent ownership position in Optare and has helped reshape the company. It is certain the Group would not have considered ‘rescuing’ the once ailing bus manufacturer lightly. The efficiency drive by the Indian group has so far seen it close down two Optare in efficient factories and the opening of a new one as part of the company’s ‘salvation’.

The Hinduja Group already owns Ashok Leyland in India and also has significant joint ventures in the sub-Continent with Nissan and John Deere. That is just the Group’s interests in automotive industries, it also has interests in a Swiss bank, major oil company Gulf as well as major media companies in India.

The would be enough to give prospective Optare buyers some confidence that the brand will be around for the long term even with its long history in its previous incarnation as Leyland.

The fact is Transit made the decision to purchase Optare buses on the basis of the economics and economics alone. MD of Transit, Paul Snelgrove explained that the Optare decision was largely predicated on the weight advantage the monocoque buses offered, along with the service and parts back up that would come with the British buses.

“The bottom line is that these buses weigh 900kg less than a similar sized body on frame model and that has implications right down the line, because it means the Optare offers 30 per cent more seating capacity while still fitting within New Zealand’s 12 tonne GVM tax bracket,” Snelgrove said.

“So we save on road taxes, we save on fuel usage because they are almost a tonne lighter and we can carry more passengers, so it was a very compelling proposition,” he added.

The first 14 of Transit’s buses were delivered in Wellington in April with the handover ceremony taking place at the British High Commission. The remaining 100 buses are flowing into New Zealand with the entire order due to be delivered from the UK factory by the time July rolls around.

Much of the credit for clinching the deal can be sheeted home to Graham Belgum,
Optare's Global president and CEO who worked hard to clinch the deal and convince Transit that Optare was the way to go.

"It was selling the proposition that the life cost and particularly the day to day operating cost of Optare would deliver a better bottom line for Transit," said Optare's vice president for sales in the Asia Pacific, Shannon Taylor, who first got to know the Optare brand when he worked for then Australian distributor, Patico.

So why monocque and why has this concept taken so long to flow into the bus sector after being the preferred construction for cars and mini buses for decades? Well for a start the 'structural shell' style, delivers better all-round strength for each vehicle. If you are building something as a single entity rather than a chassis with an add on body it naturally will be stronger, however as Paul Snellgrove pointed out it also means the structure can be lighter overall as well.

Green credentials were clearly also a factor for Snellgrove and Transit, to ensure it can satisfy the demands of statutory bodies it is tendering to operate bus services in a country that is well known for its environmental concerns. Wellington Regional Council in this instance was well pleased it would see lighter and cleaner buses operating on passenger routes around its jurisdiction.

"They’re top-of-the-line and exactly what we need to give the region’s commuters the very best service possible and most importantly Euro 6 certified, which is the highest possible and newest global emissions standard," said Snellgrove.

This was echoed by Greater Wellington Regional Council chair Chris Laidlaw who was keen to point out that environmental credentials were an important part of the council’s decision making in choosing Transit for the contract.

"At Greater Wellington we’re on our way to a more integrated public transport network so we can take more people to more places, more often and an important part of our strategy is reducing the emissions from our fleet.

"Our transport are doing that through a major renewal program that will mean 80% of the buses on the region’s roads are
new vehicles, providing a 68% reduction in harmful emissions."

Metlink is the Wellington region’s public transport network which along with buses also includes train and harbour ferry services. The Wellington Metlink network has four rail lines, more than 100 bus routes and 200 school bus services along with four harbour ferry stops.

Greater Wellington Regional Council works in partnership with the New Zealand Transport Agency to plan and fund the region’s public transport network and contracts operators to provide most of these services of which Tranzit is clearly a significant contractor.

Its goal is to deliver an effective, efficient, and integrated public transport network for the people of Wellington. The Council works in partnership with the New Zealand Transport Agency to plan and fund the region’s public transport network.

The Metlink network stretches from Wellington north to Otaki and east to Masterton, so it is a significant area of operation and the Optares will be operating across a wide part of that network, not just on the inner city runs.

Paul Snellgrove explained that the order is not just based around one size of bus.

“We’ve ordered a combination of 10.1m and 10.8m Metrocity buses, which means we’ll have the right buses available to best service the mix of the city, suburban and semi-rural routes we’ll be operating. The shorter buses are much easier to manoeuvre and are ideal for tight, twisty routes,” said Snellgrove.

Since mid-way through 2017 Optare’s distributor in Australia and NZ has been a company called Bus Corp Oceania, an Australian based company which has moved quickly to put in the infrastructure to support an expansion to the Optare customer base on both sides of the ditch.

General manager of Bus Corp Oceania or BCO as it calls itself is Jason Pecotic, who pioneered the Higer brand in Australia but is now very much a fan of the British Optare product.

“The product is very good and its qualities are self-evident, the monocoque construction, Euro 6 drivelines and also hybrid and electric drivelines and a lot of new technology that makes these buses not just favourable for operators but for passengers as well,” said Pecotic.

“In the case of Tranzit and the Wellington contract we estimate that the Metrocity buses it has purchased will deliver savings of around $4000 per bus per year in road user charges and that is before taking into account the double digit savings in fuel consumption and operating costs,” he added.

Pecotic says his main task at the moment is to ensure the back up and to deliver a support network for Optare customers on both sides of the Tasman.

“I learned some strong lessons in my previous roles that service and back up is the most important element for any bus operator and so to that end we have moved quickly to establish our network in both countries,” he added.

BCO has expanded from its original base in Melbourne, recently opening a Sydney office in Smithfield and has appointed BCSA as a dealer in Brisbane and South East Queensland. At the same time it has announced new offices in both Wellington and Auckland to offer Kiwi operators support over there.

“The Tranzit contract is very significant for us and will enable other operators to get a handle on and understand the advantages Optare offers and we are already receiving a lot of inquiry from Australian and Kiwi operators,” said Pecotic.

“We have invested heavily in a demo fleet to give operators the chance to try the buses on their own routes and in an environment that will enable them to compare with their current fleet vehicles,” he added.
YOU’RE NICKED
Buses and coaches seem like such straightforward and mundane objects at times, then something innovative and different bobs up and you realise these big hulking passenger carrying behemoths can be versatile vehicles capable of a whole range of vocations including keeping our roads safe. Coach & Bus takes a look at Victoria Police’s innovative state of the art Alcohol and Drug Testing (ADT) buses and how the design was developed.
he design and look of the Victoria Police ADT Buses was what first caught our attention, a big futuristic Iveco bus with a spectacular blue on blue colour scheme and emergency light pods, it was clear this was no ordinary bus and one we would really like to feature in the page of G&B.

The aim of the buses is to remove drink and drug drivers from the roads with a purpose built bus-enabling police to randomly test motorists anytime anywhere.

The buses have been designed to meet operational police’s every need, while enhancing police safety, transport police and equipment statewide and also double as mobile command posts during major incidents.

Despite the controversy that had overtaken the Victoria Police in recent weeks no one would argue that the task of searching out motorists driving under the influence of alcohol or drugs is a vital thing and that units such as these Vic Police buses are an important weapon in that mission. The operation of the fleet of roadside alcohol and drug testing is actually under a different command to the general duties police officers who have allegedly faked roadside breath tests to meet specified KPIs. This unit’s sole responsibility is to operate roadside tests to uncover and rid our roads of drivers under the influence.

A total of 10 buses, were funded by the Victorian Government in the 2015/16 state Budget and have been rolling off the production line in recent months and put into service.

The buses represent an all up investment of $11.7 million and they were built by specialist vehicle manufacturers Brimacco, based in Ballarat and Derrimut-based Byron Wade.

The awarding of the contract to local manufacturers is claimed to have created 18 new jobs in Victoria, including tradespeople, designers and engineers.

The new fleet includes six smaller buses that can access locations that are currently difficult for larger buses to reach including narrow and difficult to access country roads.

This flexibility means police can target more areas, more often and keep our roads safe.

The buses are fitted out with the latest technology, including LED lights, Guardian Detection System, side lights, a rear-mounted variable message sign and programmable emergency lights and siren control.

The Police claim that up to 3,000 full-licence drivers are caught with
THE NEW BUSES REPLACE THE AGEING FLEET OF TRUCK-BASED UNITS WITH VEHICLES AIMED AT GIVING POLICE GREATER FLEXIBILITY IN TARGETING LOCATIONS ACROSS REGIONAL VICTORIA.

In 2016, more than 55 per cent of drivers and riders killed on the roads were drug or alcohol impaired while country Victorians are four times more likely to be killed on the roads than drivers in metropolitan Melbourne.

Until now Vic. Police used adapted truck chassis to fulfil the role as a command centre for major road side drug and alcohol testing operations and this design marks a major shift in the way it handles these tasks.

The new buses replace the ageing fleet of truck-based units with vehicles aimed at giving police greater flexibility in targeting locations across regional Victoria.

The main attraction was a low flat floor on one level, which could be achieved with a bus but not with the truck chassis design. The bus enables everything on one level and that fulfils necessary OH&S obligations.

The innovative design of Vic Police ADT buses play an integral role in reducing road trauma.

Another factor in the change of concept was the ability for officers to set up the test site without exposing them to passing traffic. This meant storage ‘drawers at the front and rear of the bus where marker cones, emergency lights, signs and other necessary equipment are stored for transport and then removed when setting up for a roadside test. In the past the truck based command centres had belly lockers with officers having to extract the equipment at the side of the vehicle exposing them to danger from passing vehicles. Now they are either accessing the lockers at the front or at the rear where they always have a police vehicle parked as a potential buffer in case an errant motorist runs into the vehicle.

When the force put the idea out to tender it chose Brimmarco Byron Wade using a design by Cobalt Design and specified four large buses and six smaller units with the Force chose the design on an Iveco chassis for the larger bus and four smaller ones based on a BCI chassis.

Three of the Ivecos have already been delivered when this story was written and the fourth was set to be delivered at the end of June while the six smaller BCI units are already in service.

The Iveco uses a Cummins 320 hp turbo diesel mated to an Allison 375 R automatic with retarder making it easy to drive and with enough power to drive the bus along at normal traffic speed.
while delivering good fuel efficiency. It’s a front engine chassis allowing enough room for a front storage drawer and with no engine at the rear a large storage drawer there as well.

Inside the Police testing bus there is a kitchen for the officers manning the unit to warm food and to make a cuppa during breaks, a crew rest and eating area with seating for seven along with two interview rooms for processing offenders.

The design was good enough to attract a nomination and to win a Good Design Award, which was presented at the Sydney Opera House last month.

The Award cites the design by the vehicle builder Brimarco Byron-Wade, and designer Cobalt Design for its Industrial Design as well as Ottimo Design for its mechanical engineering.

The design award nomination cited the innovative design of the ADT buses as playing an important role in reducing road trauma with a design to meet every need of operational police, enhancing police safety while also being able to double as mobile command posts during major incidents.

The Good Design Awards Jury was impressed by the level of cooperation between the diverse disciplines of the end user, industrial design team and the engineering team to bring the project to reality on time and budget.

The jury mention to cite the level of functionality in confined spaces, simplification of complex processes and technologies required to meet the statutory compliances and health and safety issues, and allow access to police databases, all necessary for the efficient operation of the vehicle, appear well resolved.

“The vehicle can be deployed for emergencies, such as terrorism and bushfire call-outs, and with dominant police graphics be highly visible, giving the public confidence in the police presence at any major incident,” said the design award jury.

Current design and technologies will enable the vehicle to operate with a ten year life and the jury believed the vehicles have been future-proofed with provision for the installation of advanced technologies such as vehicle number plate and facial recognition technologies, features that VicPol intend to use in the future, subject to available budget.

In summary, the jury felt the ADT vehicle met the needs and in places exceeded, the original project brief in terms of local design and material content, cost and delivery timing.
WELCOME TO GRAVEL ROADS AUSTRALIA

AN ALL-NEW niche publication will be hitting your desk in early 2018 when Gravel Roads Australia arrives on the scene.

Gravel roads make up almost 66 per cent of the nation’s road network with close to 600,000 kms of unsealed thoroughfares across this wide brown land. Many have low traffic volumes while others are vital arteries providing access to some of our most valuable resource assets.

Building and maintaining our unsealed road network is a major industry in itself with Local Govt, Civil Contractors, Mining Companies, Forestry, Farmers and a myriad of others all involved in ensuring these vital routes are available to industry and travellers alike.

Now, for the first time, this sector will have its own journal featuring interesting stories about road construction practices, new equipment, case studies, planned projects and new techniques - in fact anything that involves the building and maintaining of gravel roads.

Gravel Roads Australia will be a high quality 64-page publication, produced four times a year by Grayhaze Publishing, publisher of Transport & Trucking Australia and Coach and Bus magazine as well as the highly successful transport website, www.truckandbus.net.au

Gravel Roads Australia will feature great writers with features and news produced by some of the best journalists in Australia with high quality photography and design.

The first edition will be published in March 2018 and then in June, September and December each year. The magazine will be direct mailed to more than 3000 Local Govt Works Officers, Civil Contractors, Transport Operators, Machinery Dealers and Manufacturers as well as Mining Companies.

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If you pick up any commercial vehicle publication or article lately you would think that electrification was coming and will probably be here tomorrow. The fact is that unlike many cities and urban centres around the globe, Australia has long distances, even for city bus routes and a low level of electric vehicle infrastructure. That being the case it will be a challenge for electric vehicles to get a strong foothold in this country in the short to medium future. Peter Barnwell takes a look.
With that in mind perhaps hybrid technology may be a better option for route bus operations down under rather than going full battery electric vehicle (BEV) technology. In fact that is what Swedish maker Scania believes will be the best option for our cities in the medium term and in fact a Scania hybrid powered bus chassis fitted with a locally sourced body arrives here soon for assessment as to its suitability for Australian city operating conditions.

It flies in the face of the international trend towards fully electric city buses but Scania clearly has a more realistic approach to what is needed here and now and that is low emission, economical buses that provide reliable service over a long period. Electric buses are relatively expensive and technology surrounding their operation is not fully resolved, in fact, Australia is way behind the eight ball when it comes to heavy electric vehicle infrastructure, as we have already mentioned.

The alternative powertrain situation as it stands, reveals Australia is late to the alternative fuels party for buses, despite several operators diving in early many years ago.

Gas and ethanol have been tried, and biodiesel when and where available, is under consideration or in use in small volumes. But the reality here is, unless there’s a government incentive or new legislation, we look set to continue leaving the same emission signature from diesel across the skies of our increasingly densely populated cities, despite several viable options being available in Europe.

Without Euro 6 legislation, Australia is slipping behind Europe in terms of emissions reduction. Thanks to Europe’s Euro 6 rules, noxious exhaust emissions are now significantly reduced compared with previous generations, so the emphasis has turned to carbon dioxide emissions reduction.

As with NOx, one of the easiest ways to reduce CO2 emissions is to reduce fuel use. Scania offers a complete selection
of alternative fuels in European markets and they are growing in popularity and the latest is a diesel hybrid bus that teams a traditional (though biodiesel compatible) diesel engine with an electric motor and batteries mounted on the roof.

This technological combination has been proven in tests and is now fully implemented in several locations, one of which is in the Spanish capital, Madrid where the drive to cut emissions is at its peak. So, what's Madrid got that we haven't?

Madrid glories in being Europe's highest capital city at 867 m above sea level and is already home to 51 Scania Hybrid Citywide buses. It swelters in 40-degree summers and freezes through very cold winters, quite similar to Melbourne or Canberra in fact.

The upside for Madrid's route bus operators using these Scania Hybrids is a consistent and reliable 23-25 per cent reduction in diesel consumption, plus added driveability its drivers love.

The smoothness of the drive is remarked upon not only by drivers, but by passengers as well. And they have proven to be exceptionally reliable in service.

The routes used by these Madrid-based Scania Hybrids are broadly similar to the suburban and peri-urban routes commonly found in Australia's major conurbations, where there's a decent gap between stops and the roads aren't clogged all day, every day. This means the engines get up to speed and maintain speed, allowing the electric motor to assist the diesel, which for short periods can drive the bus entirely on battery power. Using the Scania system, the diesel engine is employed to maintain battery charge as well as propel the bus, though a refined version (coming very soon to Australia) allows the bus to shut down the diesel motor and run silently through the city for a short distance.

The refined version of the Class II bus is especially designed for suburban traffic where higher speeds can be attained and more kinetic energy harvested to take the full advantage of the hybrid system. The buses in Madrid comprise 34x12.7-metre 4x2s and 17x14.8-metre 6x2'4 vehicles.
The new Class II specification Scania Hybrid Citywide can be operated at speeds of up to 100 km/h.

The hybrid powertrain includes the traditional high-performance Scania 9.0-litre engine with 320hp on tap and SCR-only after treatment technology that can run on up to 100 per cent biodiesel and hydrotreated vegetable oil (HVO).

The hybrid unit comprises an electric machine (motor and generator) and automatic clutch and is located between the engine and gearbox. The electric machine is rated at 150kW and 1,050Nm.

A total of 1.2 kWh of energy storage is provided by a lithium-ion battery integrated in the roof structure at the front of the bus and is housed in a neatly styled bulb together with a DC/DC voltage converter and a cooling unit.

The use of a Scania Hybrid system together with a DC/DC converter, stop-start function and ecoroll (coasting down hill) provides significant fuel savings.

To clean the air even more, in Madrid they’re running the combustion engine on up to 100 per cent biodiesel, providing CO2 savings of 60-65 per cent.

“Accelerating urban growth in the world is largely rapid suburbanisation rather than expanding city centres. That means longer commuter trips to work and, in fact, suburban public transport presently consumes three times more fuel than city centre transport. Thus we need a greater focus on finding non-fossil alternatives for these journeys,” says Karin Radstrom, Head of Buses and Coaches at Scania.

“This Scania Hybrid bus is ideally suited for combined city and suburban operations. It gives customers the opportunity to invest in carbon-saving operations with an estimated payback of just over five years, including battery replacements during the lifespan. By comparison, payback is some two years later in purely inner-city operations,” Karin says.

“We are excited to be bringing the Scania Hybrid chassis to Australia and we are very confident its on-road performance, its low fuel consumption and its drastically reduced emissions will spur a lot of interest from local operators in outer-urban areas,” says Julian Gurney, Scania Australia National Manager, Sales for Bus and Coach.

“Hybrid offers extra passenger comfort at no extra cost, and the fuel savings go straight to the bottom line. And as for emissions, anything that helps clean up the air we’re all breathing has to be a step in the right direction,” he says.

ITS PLAIN IN SPAIN
HYBRID’S THE GO FOR CLEANING UP THE CITY

The City of Madrid has devised tough temporary measures to tackle pollution, including speed limits and banning passenger car access to the city centre if nitrogen oxide levels exceed acceptable limits.

In parallel, the Madrid transport authorities have required bus operators to gradually switch to greener technology. Conventional diesel has not been permitted in new bus acquisitions since 2010.

The regional authorities are encouraging passenger transport companies to operate at least 20 percent of their fleets on gas, as hybrids or as electric buses. Restrictions on the use of gas vehicles in non-adapted underground bus depots have prompted operators to select hybrid technology. ☝
JOST Forged Alloy Wheels

JOST Premium Forged Alloy Wheels are manufactured to exacting standards to suit Australian conditions.

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* average weight statement compared to a quality 22.5 x 8.25 Steel disc wheel equivalent.
China has been a fertile ground for the bus industry with a variety of new brands coming down under from the Peoples Republic over the past decade with the likes of BCI, Higer, King Long and Yutong to name a few. Now there is another new Chinese bus brand set to take on the Aussie market with an adventurous Far North Queensland bus and coach operator deciding to become a vehicle importer. Editor Peter Barnwell takes a look at our latest Chinese brand.

A desire to move from being a regional bus operator in the tropical centre of Mossman to become our newest bus and coach distributor has seen FNQ Bus Lines start an all new company with a new line of Chinese built buses to be known in Australia as Challenger Bus and Coach.

Based in the unlikely location of Mossman, north of Cairns, Challenger Bus and Coach (CBC) has secured the rights to the latest Chinese brand to come here from a company called iWarrior part of the giant An Yuan Bus Manufacturing company, a serious player in Chinese bus manufacturing.

Two models will be available initially, the Challenger Coach V12 a 12-metre vehicle and the Challenger Coach V10, naturally a 10-metre model and both, according to CBC execs, come engineered for Australian conditions.

The man behind CBC is Greg Sloan, as we said a long time bus operator who says he knows the demands and needs of bus operators after years in the industry.

“Are bus operators and we know the issues that you deal with day-to-day,” Greg Sloan told us.

The company says it has offices in Victoria, South Australia and of course in Far North Queensland and Sloan says he guarantees the product.

“If you have a problem, we have a problem and we will respond immediately,” Sloan assured us.

Sloan came to acquire the distributorship almost by accident, when trying to source transmission and wiring spares for one of his fleet buses.

“After fixing the problem, I got talking to the engineer and a few other people there who got involved and we came up with the basic concept for this new bus and then just kept improving on it.”

“We had a broken down bus that we couldn’t use and the iWarrior people helped me out even tracking down the company that built it and that is how the relationship began over the past 16 months,” Sloan said.
Sloan says Challenger will handle all aspects of the brand from importation to the actual distribution and retail sales along with servicing and spares.

“The buses are specifically designed and built for the Australian bus and coach industry and our particular conditions,” says Sloan.

“We regularly host engineers from iWarrior who have come to Australia to evaluate certain mechanical components and systems as they find our environment particularly demanding on machinery,” he said.

“These guys have been manufacturing buses for a long time and know their stuff so we benefit from their experience and know how,” Sloan added.

Known as Challengers here in Australia, the new buses from the iWarrior Bus Company come from the An Yuan factory with specific detail changes for Australian conditions. The buses coming here under CBC distributorship are similar in spec to the bus An Yuan sells in its domestic China market as the Star of Australia or model PK6139A3. In fact An Yuan names its models as Star of, with the Star of South East Asia, the Star of America, the Star of Africa and of course the Star of Australia.

What Challenger has done is taken the Star of Australia and with engineering and design input worked with An Yuan to develop the models for local demands and conditions.

The Chinese bus industry is nothing if not adaptable as it can pretty much build a ‘bespoke’ bus to any requirement or specification.

This according to Sloan has allowed CBC to virtually purpose-build the V12 and V10 models for our market, again using highly experienced engineers who have previously worked in manufacturing buses destined for Australia.

Sloan claims a significant difference between these and other China-built buses sold here is the use of European sourced stainless steel in their chassis.

“Some of our other buses operating here in FNO develop serious chassis and body corrosion in just a few years,” Greg Sloan said.

“For longevity and strength, An Yuan builds the chassis and frame using stainless steel sourced from Finland,” he added.

“It’s called Stalatube — a high quality product and very resistant to corrosion.”

“Other high-end components go into CBC buses such as Styleride TST seats for additional passenger comfort.”

Sloan said Challenger buses can be customised to practically any specification within the boundaries of parts availability.

“Whatever the customer wants…,” he says.

“Our initial vehicles will be equipped to day-coach spec, which features 53/57 leather recliner seats.”

CBC promo literature says their buses have the advantage of durability and longevity thanks to the use of premium grade materials and components.

For example due to corrosion problems in a coastal Australian environment, bodywork is compressed fibreglass and aluminium,
light in weight and corrosion resistant. Flooring is reinforced PVC material, again for strength and durability, with added sound deadening to maintain a quiet cabin ambience with minimal intrusion of tyre and engine noise.

Local validation of certain parts and components is carried out for quality and performance while only high grade welding and sealant finish are used.

Large luggage bins span the width of the bus with doors each side. USB ports are provided to each seat.

CBC is confident its vehicles will deliver reliability and offers warranty cover for up to two years on the vehicle including chassis and body with the running gear covered for two years/200,000km.

Greg Sloan is putting his money where his mouth is by personally placing orders on several buses as “a testament to the superiority of the product,” he said.

He said the CBC buses were similar to others on the market in terms of body and chassis construct but they have Cummins engines underneath plus Allison or ZF transmissions, Webco brakes along with full multiplexed electrics using CANBUS.

“If customers want to order something different to the initial vehicles, for example changing the air conditioning system or door location, pretty much any changes they like, then we can accommodate that…ex-factory.”

Sloan says CBC is in the process of establishing a parts supply network at their main depot saying “When people buy this bus we’ll keep a parts inventory for it – so if they need something and use it then we’ll get a replacement for our stock.”

Sloan points out that CBC is a start-up company from small beginnings admitting they aren’t “big” but says the company does care about the product and as an operator itself will be able to answer customers needs with an intimate industry knowledge.

Let’s hope this Challenger goes the distance and has a satisfactory landing in Australia. 😊
BENZ YA BACK

After some years using a variety of other bus brands, most recently Korean Daewoo, South Western Sydney based bus company; Interline Bus Services has been tempted back to the Mercedes-Benz buses after 20 years. We take a look at Interlines reasons for going back to Benz.
The company, which services the growth areas of Sydney's South West, has just taken delivery of its first Euro VI Mercedes-Benz OC 500LE bus chassis using a body by Gold Coast builder Bustech.

This is the first of eight low floor city bus models ordered with the Mercedes-Benz chassis and Bustech body to join the Interline fleet.

Interline is a family business, which operates more than 94 buses housed at two depots in Macquarie Fields and Leppington and another 31 buses in another division that operates from a depot near Ipswich in Queensland.

Interline's operations manager, Joe Oliveri, is an industry legend and the Oliveri name is closely linked to the development of bus routes in Sydney's South West and as a family has deep and close ties to the region and to bus operation.

Joe Oliveri had not bought a Mercedes-Benz bus for two decades, but was tempted back by what he describes as the company's commitment to deliver a bus specification that met his needs.

Oliveri was impressed that Mercedes-Benz salesmen Mick Neskes and the rest of the team at its Huntingwood sales facility were prepared to help him order a city bus with his preferred transmission and a non-standard differential ratio.

"Michael and the other guys at Mercedes-Benz were so supportive in helping me get the type of bus that best suits our operating conditions," says Joe.

What Interline ordered and specified was a Mercedes-Benz OC 500LE city bus chassis with the latest generation 7.7-litre six-cylinder Euro VI engine, which uses less fuel than larger engines of the past.

Joe Oliveri is an operator who is totally across the bus business, knowing the operating costs of all the major components in minute detail. He carefully studies the average operating speed of his buses and their fuel consumption.

"Selecting a smaller Euro VI engine is no brainer because of the massive fuel economy savings," says Mr. Oliveri.
“It’s not like the old Leyland Leopards of a similar size that made 145hp, they are putting out 300hp now which is more than enough.”

Mr. Oliver’s first new OC 500LE bus was from Mercedes-Benz stock and came fitted with the standard ZF EcoLife automatic transmission and standard factory differential ratios.

Given his experience of similar buses in his operation, Oliver wanted Voith automatic transmissions for the next seven Benz’s with his preferred differential ratio. The Benz Bus and Coach team at Huntingwood was apparently more than happy to help.

“We worked closely with Voith on a specification that would best suit Interline,” says Mick Neskes, Benz’ Bus sales executive at the Huntingwood operation.

“We feel that we have come up with a specification that will perfectly suit the Interline Bus Services operation and can’t wait to see them in operation,” Mick said.

The low average speed and stop/start nature of city bus operation means that the smaller capacity Euro VI Mercedes OM 936LA engine is well-suited.

It still packs a punch, generating 220kW (300hp) and 1200Nm of torque, but its a hi-tech powerplant, developed with the engineering strength of Mercedes and as a result has a lot of innovative efficiency innovations, in fact Benz claims the design is protected by more than 180 patents.

The intelligent engine uses high-pressure common rail fuel injection and weight optimised materials as well as the latest turbocharging technology. The engine uses a controllable three-stage engine brake, in addition to retarders on available transmissions.

Benz says that by utilising the latest technology, engineers were able to achieve the characteristics of a larger engine with the more efficient unit, while also dramatically cutting the nitrous oxides and particulate matter in the exhaust.

The company also says that engine durability also benefits from the innovations, with the Euro VI engine displaying similar
“WE FEEL THAT WE HAVE COME UP WITH A SPECIFICATION THAT WILL PERFECTLY SUIT THE INTERLINE BUS SERVICES OPERATION”

operating life to the larger displacement OM457LA engine during testing.

Mercedes-Benz commissioned an independent fuel consumption test, where the Euro VI engine was pitted against Euro V engines. Running in Citaro buses on an identical urban route, after approximately 1400km and 120 hours of running, the Euro VI engine used 8.5 per cent less fuel than the previous generation Euro V OM906HL 6.4-litre engine.

Total Cost of Ownership with the Euro VI chassis was significant focus for designers as it was for an operator like Joe Oliveri, with Benz extending engine maintenance intervals up to 80,000 km, while engineers have also managed to reduce rear axle oil change volume while extending maintenance intervals at the same time.

AdBlue and oil consumption have also apparently been reduced by up to 40 per cent and 50 per cent respectively.

Oliveri was impressed that the 7.7-litre Euro VI engine also delivers almost all of its maximum power from just 1400rpm and there is plenty of torque, which enables a smooth ride for passengers.

Benz engineers used three technologies in order to meet Euro VI emission standards, including exhaust gas recirculation or EGR, a diesel particulate filter or DPF, which has been in service in US and European Daimler product since 2007 and selective catalytic reduction SCR system, which has been in European Daimler trucks and buses since 2005.

One element of the Euro VI standard that is often overlooked is the requirement for noise reduction and the new OC 500LE engine is significantly quieter, which leads to an improved customer experience.

Oliveri was equally impressed that the Benz OC 500LE came standard with a suite of safety and driving aids including ABS anti-lock brakes, traction control, electronic braking system, electronic stability control (ESC) and a fire detection system in the engine compartment.

Other comfort items included cruise control, a multifunction steering wheel that enables the driver to keep their hands on the wheel and start-off assist with Hill Hold function all of which added to Oliveri’s decision to switch back to Mercedes Benz.

It’s safe to say that after running successful bus operations across South Western Sydney for many decades Joe Oliveri and the Oliveri clan know what they are on about so after experimenting with other brands Joe believes the move back to the three pointed star will be a success.
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One Small Step

In the 1960s the Apollo mission was the USA’s pride and joy, the aim to launch a manned mission to the Moon. Now the Chinese have an Apollo mission of their own with the aim of producing autonomous buses to land more people in the places they need to get to without a driver. Editor Barnwell looks at the Unmanned Apollo Mission from King Long.
If you thought Chinese buses were just cheap and cheerful basic people movers with established technology then think again. The People's Republic is racing ahead in technology across a huge number of industries including buses and King Long is pushing the envelope as much as any bus maker in China.

King Long’s Apollo is already way past the validation stage and is being test run in China to iron out any last minute potential issues. King Long’s Autonomous experiment made an appearance driving itself at the recent First Digital China Construction Summit transporting patrons around the exhibition.

The bus is considered to be so important in China that it’s first public test drive made front page news in The People’s Daily and lead story on China’s CCTV China News network among blanket coverage from other Chinese media.

The First Digital Summit test drive was the first time that a Chinese driverless vehicle had been tested for public transportation in that country.

Needless to say it attracted plenty of attention with thousands of people at the exhibition clamouring for a ride. In the end about 1700 passengers were conveyed in the King Long Apollo during the exhibition. This is not a far off pie in the sky project, in fact mass production of the new autonomous Apollo bus is due to start in July, that’s right next month! This is heralding a milestone in the rapidly growing Chinese auto industry.

King Long has teamed up with Baidu to develop the technology for Apollo’s autopilot system and to facilitate the pace of commercialisation.

Apart from being fast tracked, autonomous vehicle development is highly competitive in China mainly due to the commercial benefits the technology will bring to public transport as well as the private sector.

Along with the driverless vehicle, King Long has trotted out its new artificial intelligence (AI) technology that will be deployed in the Chinese auto industry in various applications including passenger cars and all commercial vehicles.

However the focus right now with King Long and Baidu is in the commercial vehicle area.

Unmanned bus development has been rapid with King Long’s Apollo 1.0 Micro-Cyclic Electric Bus completing, without sensors, an automatic tracking drive with “smooth control experience,” only breaking cover last September... just in time to go on display in November.

It smoothly operated in a driverless mode on a 4km road, fully demonstrating the unmanned vehicle’s potential in the commercial vehicle field.

The tie up between Baidu and King Long was only signed last October to provide strategic cooperation with plans to realise mass production and trial operation of commercial-grade unmanned ‘micro-circulators’ in 2018.

Their advances are a huge leap forward for the Chinese auto industry which had expected the domestic autonomous drive production plan to take at least another two years.

The same applies to the implementation of AI into Chinese passenger cars with King Long’s efforts speeding up the process.
Already, some of China's government departments have placed orders with King Long including the Public Security Traffic Management Department of Fujian Pingtung Comprehensive Experimental Zone signing up earlier this year for a batch of autonomous vehicle licences.

Elsewhere, the Pingtan autonomous bus test base selected a main thoroughfare road in the central and western part of Pingtan Island as the first phase test site. The total length of the test site was more than 6 km.

New energy charging piles, high-speed mobile information and communication base stations and other supporting facilities were built for the test phase. Autonomous drive testing will be carried out soon on the island.

Pingtan is a tourist destination that lends itself to autonomous vehicle use.

The Apollo "Golden Dragon" has an autonomous driving level of L4 (Note: highly automated driving, where all piloting operations are carried out by the unmanned system).

The initial scenario for public use is aimed at the "last mile" commuter but plans are in place to take the lead in implementing specific scenarios.

Commercialization, such as automatic connection of scenic spots, parks, and airports is on the agenda as Apollo can perform specific service tasks through human-computer interaction.

With the gradual development of technologies, regulations, infrastructure, costs, and other issues, autonomous buses will be expanded to semi-enclosed venues and even open roads, such as dedicated lines, tourism, and public transportation.

Apollo is equipped with Baidu's latest systems and has three major capabilities: high-precision positioning, intelligent sensing, and intelligent control.

Apollo’s body is covered with "high-precision weapons", such as laser radar, high dynamic range camera modules, stereo cameras and other sensor devices to capture the surrounding information.

A variety of sensors work together to give Apollo more sensitive obstacle recognition and road condition awareness, ensuring safe driving in rain, fog, and other weather conditions and under different road conditions.

In addition, the Apollo’s integrated navigation and positioning system, which combines GPS positioning and laser radar, can achieve point cloud positioning, and can accurately locate GPS signals when they are missing.

Baidu's high-precision maps can achieve centimetre-level accuracy, which are two orders of magnitude higher than ordinary GPS positioning.

Based on high-precision maps and intelligence, Apollo’s “Car Brain” perceives environmental information and high-precision map data in real time to achieve optimal planning of routes, predict vehicle and pedestrian behaviours and intentions, and make driving decisions for appropriate road conditions.

It’s a brave new world coming at us at light speed.

Best to get in, sit down and buckle up for the ‘driverless’ ride.

HOUSTON, THE APOLLO MISSION HAS LANDED!
X MARKS THE SPOT

One of the most anticipated utes in recent time, the Mercedes Benz X Class has arrived and we slipped behind the wheel for a test of the first dual cab pick up from the German giant.
Mercedes Benz is a fascinating company because while it enjoys tremendous prestige as a luxury and performance car maker it also makes the vans that deliver your eBay purchases along with big trucks that ply the highways and buses that carry passengers across the globe. Someone said to me a few years ago that Benz was taking a risk selling working vehicles because someone buying a $400,000 S Class or SLS sports car would be put off if old mate pulls up in a van or truck with the same three-pointed star on the front.

Despite that observation it hasn’t ever really affected the company’s prestige, it can juggle the difference between working class and upper end prestige, and it seems everything in between, better than any other maker out there.

So it was of huge interest across the industry when Mercedes announced it would develop a pick up and even more interest when it was realised that the Benz X Class would share underpinnings with Nissan’s Navara and in the future Renault’s Upcoming Alaskan ute.

When parked next to a Navara you realise that it is quite different to the Nissan in looks although the basic body shape is
the same, most of the panels have been redesigned and given a more Benz family look. Similarly the interior is very different from its Nissan cousin with naturally quite a dollop of Benz luxury touches as you might expect, particularly since we were testing the top of the line Power X250 model.

Indeed it has done a very good job at hiding its origins in the backbone of the ladder frame chassis underneath.

In fact the X Class is wider from front to rear than the Nissan and has a much more substantial look than most other utes in the segment and there is that three-pointed star on the grille. In our week behind the wheel of the X Class this was something that attracted the most attention, a Mercedes Ute certainly dragged some looks and I reckon it is that coveted symbol that will make the X class a popular choice in the upper end of the market.

That three pointed star certainly adds the class to X Class. It has an air of luxury and presence that other utes in the class will have trouble matching. It has a wide track, a wider tray and a nice shape all adding to that presence on the road.

The Power model we tested is only available with a ute tub (there are lower entry level cab chassis versions on the Pure and Progressive models) and will set you back $61,600 for the manual and for the 7-speed auto is listed at $64,500.

The range kicks off at a much lower and quite reasonable $45,450 for the entry level Pure cab-chassis rear-wheel drive manual. The range then climbs through other variants and models up to the Power, which was on our test sheet.

The Power scores chrome-accented bumpers, 18-inch alloy wheels LED headlights and tail-lights power-folding and heated side mirrors. Artico faux leather trimmed dash panel with contrast stitching, Artico and ‘microsuede’ seat trim, an 8.4-inch ‘Command Online’ multimedia system screen with an eight speaker sound system and DAB radio, Garmin satellite navigation and an auto-dimming rearview mirror.

If that is not enough it also gets power front seats with lumbar support, a 360-degree camera system, semi-automated park assist, dual-zone climate control and keyless entry/start and aluminium sill protectors.

It may not be an S class but the X Class is pretty well equipped for a ute and is also chock full of safety features as you would expect in a Benz.

Surprisingly it doesn’t come with a tub liner which is an option at around $899 or for that matter a tonneau cover which will set you back an extra $1046, while a hard,
lid is a massive $3020 and a roller cover $3295. It’s worth noting that Ford’s Ranger Wildtrak gets a roller cover as standard.

As you would expect the car is finished perfectly and while the Power we had was finished in basic black and greys there is a variety of interior colours to choose and I have seen some rather smart versions with brown leather seats, beige headliner and wood trimming.

The comfort levels are good with the front seat offering good room and support with bottle holders in the doors, while there is a covered console locker between the seats along with some small cup holders and a limited amount of loose item storage in front of the gear shift.

Room in the back seat is not overly abundant and taller occupants will find it fairly cramped.

One aspect that really annoyed us was the low roof line, which for this relatively short road tester made it difficult to enter and exit the X Class while we also found the driver and passenger seats mounted quite high, which made it feel a little claustrophobic and tight and it was the same in the rear seat as well.

Back-seat space is okay but not terrific, taller people will feel cramped and it could be quite uncomfortable on longer trips, although it is fine for children or shorter people.

For someone who actually owns an Amarok, as we do, the X Class cabin doesn’t feel as spacious or roomy as its VW rival, just saying.

Out back in the tradie’s playground of the tub there is plenty of room with the longest tray in its class at 1581 mm. As for the tray, the internal measurements are 1581mm long and a more than adequate width of 1560mm wide and notably enough room between the arches to fit a standard Aussie pallet with a width of with a 1215mm between the wheels, while the tub is 475mm deep, a good roomy and practical tub space, just a pity that a tub liner is an optional extra. The X250d Power we tested boasted a 1016kg payload while the less highly optioned and lighter models such as the Pure range up to a 1067 kg payload.

Initially X Class is only available with a pair of Nissan sourced turbo diesels just the same as in the Navara, with the choice of either the single turbo 2.3 litre X220 with 120kW and 430 Nm of torque or the twin turbo 2.3 litre X250 with 140kW and 450Nm as was fitted to our test vehicle.

The 250 is available only available in 4Matic four-wheel drive with the choice of either a six-speed manual or seven-speed automatic although our test rig had the auto fitted.
The entry-level X220 is only available in the Pure variant and only with the six-speed manual with the choice of rear drive or four-wheel drive.

Of course what everyone is waiting for is the mooted three-litre V6 turbo diesel, the X350d with 190kW/550Nm and permanent all-wheel drive with a low-range transfer case, which is due later this year, but at a significant price premium as we understand it.

For this tester we found the 250 had more than enough grunt to hurry along in city traffic and a brief run on rural roads and freeways showed it had good cruising ability with plenty in reserve for overtaking and climbing.

We did a limited towing test with the X-class taking a rally car across town on the car trailer and it did the job easily, grunting up some steep hills with the seven speed auto shifting well as it should with Benz claiming a towing capacity of 3.5 tonnes for a braked trailer.

Fuel economy was quite good and in a variety of conditions, as previously mentioned we recorded around 8.6 litres per 100km average, which was impressive in our view.

Not surprisingly the X-Class has earned a five star ANCAP safety rating, which makes it the only ute under the current lighter testing regime to earn the maximum five stars. This is thanks to the seven airbags including dual front bags, a driver’s knee bag as well as front side and full curtain airbags.

Some believe it is a plus but this tester gets annoyed with the standard auto emergency braking (AEB). Driving requires focus and AEB gets really annoying when it believes you are too close to something and applies the anchors, blah – so annoying!

There is also lane departure warning, again a really annoying thing for drivers who are paying attention but may have to straddle lanes for various reasons. This vibrates the steering wheel if you stray over the lines.

The hefty prices at Mercedes service centres only have to be tested once a year with service only due every 12 months or 20,000km while there is a three-year/unlimited-kilometre warranty and road side assist for the length of the warranty.

So it has plenty of grunt, is a good towing vehicle, has good interior luxury and safety equipment but it is a bit low in the roof department, so does the X-Class measure up in the driving experience when it comes to ride and handling?

Well it wasn’t as good as we had hoped for, or we would expect from a Benz. While it steered very positively and with good feel and certainly cornered flat and well on smooth road surfaces, it displayed a bit of choppy ride and had a tendency to become disturbed on bumpier surfaces.

It is certainly well damped and calibrated for smooth European roads more than Aussies give and take tarmac or choppy gravel surfaces, with a nice firm but reasonably compliant ride. On a nice smooth country road we hurled it through some twists and turns with a good deal of aplomb, but on choppy stuff it was quite nervous.

It is certainly better than most of its Japanese rivals, especially its cousin the Navara. Part of this is down to the fact that the X-Class uses double wishbone front suspension and a five-link coil spring rear suspension putting it well ahead of its opponents in most cases.

Just about everyone I spoke to when testing the X class asked if it was like a Navara or better than that, such has been the interest in Mercedes first dual cab pick up and its true origins. However we have to say it is better than the Navara in every way, but then again it is more expensive.

Is it a game changer? Well no but it offers good performance, luxury, safety, towing and driving and comes with that ethereal quality that lingers around that three pointed star on the grille. The attention it aroused while we had it on test was enough to confirm that to us.

Would we have one? Probably but then again we like our Amarok and still reckon that is a better overall package at a lower price.
PAUL CLITHEROE

AVOID DODGY LENDERS AND THINK ABOUT INCOME PROTECTION INSURANCE

No one likes being in debt, but taking on some level of debt is, for many of us, necessary to reach our financial goals. So, it's understandable that anyone with a tarnished credit history may be eager to do whatever it takes to be eligible for a competitively priced loan. However, our money watchdog ASIC is warning about companies that claim they can cure a poor credit rating or offer a quick fix for debt problems.

In my experience, most people know when they are in debt over their heads, even if it's only a gut feeling. Of course there are some obvious signs like regularly spending beyond your budget, or carting valuables off to the local pawnbroker to drum up some extra cash.

A key warning sign is approaching non-mainstream, high interest, “fringe” lenders for funds. But think carefully about turning to so-called credit repair and debt management firms. These companies can charge high fees without actually fixing credit and debt issues, potentially leaving people in a worse financial situation.

An ASIC report found debt management firms can use of high-pressure sales techniques, in some cases asking for payment upfront without clearly explaining their fees and costs.

Credit repair companies may try to clear a customer's bad credit record by getting in touch with an external dispute resolution (EDR) service like the Financial Ombudsman Service or Credit and Investments Ombudsman. It's a service these companies charge for. Yet working with an EDR is something consumers can do themselves at no cost at all.

In fact, there is a whole range of free services that can help you fix poor credit reports or resolve debt problems.

If you’re finding it hard to get a loan because of an incorrect default listing on your credit report, speak to the creditor and ask for it to be removed. If you get no joy, contact the appropriate EDR service.

If you’re battling runaway debt, free help is available through the National Debt Helpline (1800 007 007). Or head to ASIC's MoneySmart website and follow the links to financial counsellors. Most offer a free or very low cost service that can include negotiating debt repayments with your creditors, applying for hardship variations on loan repayments, and developing a plan to get your finances back on track.

I am more than aware that sometimes debt can ensnare us no matter how hard we try to avoid it, through say, our income unexpectedly drying up, an investment going bad or just rotten luck. Under these circumstances professional advice and assistance is very useful, if not essential. But you don’t have to pay for services that can promise a lot and deliver very little. Meanwhile, several years ago, media reports uncovered dodgy practices among some life insurance companies. It may have rattled consumers’ confidence in what is an important financial product, so it's good to know that the industry has lifted its game.

A review by money watchdog ASIC found that these days a high proportion of life insurance claims are paid out in the first instance – 97 per cent in the first six months of 2017, with over half these claims settled within a fortnight.

Life cover plays a vital role protecting the financial wellbeing of many Australians – particularly families. So any move that increases our confidence in life insurance is a step in the right direction.

With 30 June fast-approaching, it's worth taking a close look at another type of insurance – one that protects what is arguably your most valuable asset, your ability to earn a regular pay packet.

Income protection insurance provides a steady income stream if illness or injury mean you’re unable to work. There is a limit to the amount of cover you can take out – typically worth around 75 per cent of your normal wage or salary. But one of the pluses of income protection cover is that the premiums are generally tax deductible. That's why, as we head towards the end of the financial year and many people are looking at ways to save on tax, it's worth checking out income protection insurance.

As with any type of insurance it pays to shop around as premiums and policies will vary widely between insurers. A variety of factors will determine the premium you pay, including whether or not you want the benefits to be adjusted in line with inflation, how long you're prepare to wait for the premiums to kick in, and the type of work you do. White collar workers often pay lower premiums than blue collar workers due to a lower risk of injury.

According to research group Canstar, income protection insurance can cost around $40 per month for a male 20-something accountant. That sort of premium buys a monthly benefit of $3,125 if you need to call on the policy.

Sure, it's another expense to wear. However, if the unexpected happens, income protection insurance could be the safety net that lets you and your family stay on track financially.

Paul Clitheroe is a founding director of financial planning firm ipac, chairman of the Australian Government Financial Literacy Board and chief commentator for Money magazine. Visit: paulclitheroe.com.au for more information.
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Master Bus is easy to get into. It has an exceptional headroom space, a wider than average aisle and an electric sliding door and step*. There’s also class leading 3.5 cubic metres of luggage space in the back which stops the cabin getting clogged up with bags. It’s easy to get into financially as well. With a 3 year or 200,000km warranty and roadside assist*, 3 year capped price serving* combined with Renault’s reliability and low running costs – we challenge you to find a better value mini-bus.

For more information visit renault.com.au

*Electric sliding door and step is optional on Master Bus. There (3) year/200,000km warranty offer and 5 year/200,000km Roadside Assistance both apply to all new or demonstrator Master Bus models. Warranty and Roadside Assistance valid for 3 years or 200,000km (whichever comes first) from new. Demonstrator vehicles involve balance of new vehicle warranty and Roadside assistance. Roadside Assistance terms and conditions apply. Call our Customer Service Team on 1800 029 008 or view the Terms and Conditions statement at www.renault.com.au drivingprescribedmind for detail. *Post 3 scheduled maintenance services capped at $1,999 per service on new and demonstrator MASTER models, based on standard scheduled servicing from new and non-commercial operations conditions. Scheduled maintenance services required every twelve (12) months or up to 10,000km (whichever occurs first). However, Master is subject to adaptive servicing requirements, as determined by the Oil Condition Sensor, and may require servicing prior to the standard twelve (12) months or 10,000km service interval. If vehicle is not presented within three (3) months of when the scheduled service is required, right to that capped price service under the program is forfeited.
MARCOPOLO

One of the world’s largest body manufacturers, Marcopolo, is making a major mark in the Australian bus industry.

Brazilian based, Marcopolo, have partnered with Volgren since 2012 - launching their first vehicle, the Audace three years ago. Marcopolo have sold more than 100 Audace’s locally and in 2017, they announced a full acquisition of Volgren - Australia’s leading bus body company.

Who is Marcopolo?
Founded in Brazil in 1949, Marcopolo has grown to become one of the biggest bus body manufacturers in the world. The company has manufacturing facilities in 12 countries, employs 20,000 people around the world and has produced more than 400,000 buses in nearly 70 years.

There are Marcopolo vehicles running on the roads of more than 100 nations, from Spain to Sudan, India to Iceland, Portugal to Peru.
One such model is the Audace, the first Marcopolo vehicle to land on Australian shores. A versatile vehicle that can be used as a charter bus or coach, the Audace emphasises driver and passenger comfort while showing off stop-you-in-your-tracks European styling.
Matching global strength with Volgren’s local know-how, Marcopolo continues to turn heads in Australian bus market.

BUILDING BETTER BUS PARTNERSHIPS
FOR MORE INFO CONTACT VOLGREN ON 03 9791 4255
OR VISIT VOLGREN.COM.AU/MARCOPolo