

AUTOMOTIVE

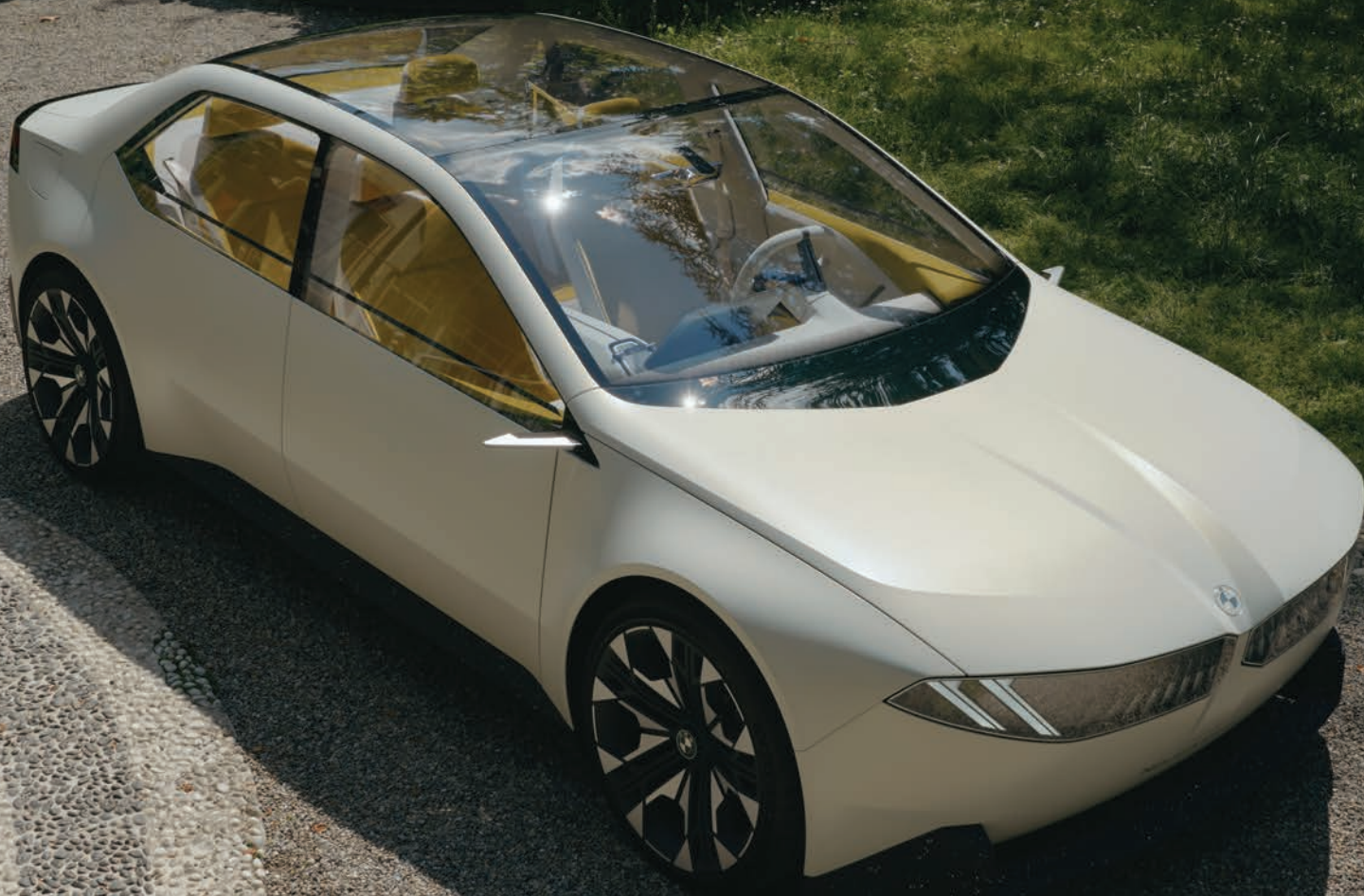
REFINISHER

THE VOICE OF THE INDUSTRY

Edition 243

January - February 2026

AUTOMOTIVE REVOLUTION



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TOP SHOPS





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Cover and contents:
BMW Vision Neue Klasse

EDITORIAL

A NEW DAWN FOR SKILLS



Claire Macfie
claire@autoref.co.za

With a positive start to the year, there seems to be a reawakening for skills as around us we see training facilities adding additional space to adjust to demand. There is also an initiative from the basic education department that is beginning to revitalise skills. **Automotive Refinisher** was recently contacted to help facilitate a first group of 35 teachers to be exposed to a full day of body and paint repair. Keep an eye out for the follow-up story.

The idea is that over five days, these delegates are exposed to various skill sectors such as welding, spray painting, panel beating etc. They will then be able to share these experiences with their students at school and help guide them in various careers that are not always so academically bias, but are more hands-on learning, and will help other individuals exceed. With a global shortage of skills in our industry, this is surely a step in the right direction.

Our recently graduated Matric form needs to know that they can meet tomorrow's challenges today by stepping into the skills sector. The rise of AI puts many careers in jeopardy as it looks to replace many facets of the legal, medical, accounting and other job descriptions. These jobs will not look the same five years from now. This is where a hands-on career will shine.

How do you get started? Reputable training centres are a new start for beginners. Take a look at <https://autoref.co.za/recommended-centres/>. These are tried and tested facilities with passionate staff and trainers, as well as a good legacy of achieving the best for their students. It is of utmost important – this cannot be stressed enough – to find a reputable training facility. The awful stories we hear time and time again of learners who have paid hard earned money for years, who have been dupped by greedy money grabbing thieves, who leave students unqualified, penniless and a qualification that isn't worth the paper it's printed on. If you're at a training centre that relies solely on theory, they are not legit. Your centre needs to handle theory, practical and be able to qualify you once you've gained all your knowledge and skills.

For those already working, it's not too late for you either. The

Recognition of Prior Learning (ARPL) is the path for you. This route takes into account the years of experience and will help you obtain your certification. Any reputable training facility is able to join hands with you on this journey.

Changes within the world of vehicle repair are happening thick and fast, and no reprieve is on the horizon. The model variants, lack of repair information from Chinese brands, ADAS and much more, see the global world of collision repair in a state of flux.

Look within at your staff to upskill soft skills. Customer satisfaction is key in this day and age of Google Reviews. Learning to engage well with insurers, suppliers and customers is paramount to success.



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MAZDA LAUNCHES OUT OF WARRANTY SERVICE PACKAGE

Mazda Southern Africa has launched the Mazda Care Signature Service Package, an exclusive after-sales offering for Mazda vehicles that are out of warranty or serviced outside the official Mazda network.

The package lets eligible owners enjoy peace of mind with expert care and genuine Mazda components. "With the Signature Service Package, we're showing that after-sales care can be personal, thoughtful, and premium—just like our vehicles," says Deolinda Da Costa, Head of Marketing, Mazda Southern Africa.

It includes full servicing by Mazda-trained technicians using Genuine Mazda Parts such as engine oil, oil and air filters, sump washers, and model-specific additions, available at participating dealerships.

Eligible vehicles include models sold between 2014 and 2018, such as the Mazda2 1.5 (DJ), CX-3 2.0 (DK), Mazda3 1.6 & 2.0 (BM & BN), and CX-5 2.0, 2.5 petrol & 2.2 diesel (KE & KF). Pricing varies; owners should confirm details with their dealership.

The package is more than a service—it's a promise to protect your Mazda's performance, safety, and driving pleasure. Mazda Care Signature Service Package: after-sales has never cared this much. Because Wonderrrr Awaits. The Feeling Will Find You.



CONCERN ABOUT GROWING SAFETY IN THE SA AUTO INDUSTRY



South Africa is facing what the Automobile Association (AA) describes as a growing vehicle-safety crisis, with more than 50 000 vehicles recalled in 2025 across several major brands. These recalls expose weaknesses in quality control and regulatory oversight, with motorists often only learning of defects after vehicles are already on the road.

Last year alone, four major recalls were issued, involving faulty airbag inflators, ineffective seatbelt latches, overheating high-voltage batteries, and serious motorcycle engine and drivetrain defects.

The AA identifies three systemic failures: defects emerging long after sale, a recall system that relies on consumers to track notices themselves, and limited authority for the National Consumer Commissioner to conduct pre-market testing—leaving manufacturers to self-report issues.

The lack of an independent automotive testing body further compounds the problem. Through its SaferCarsForAfrica partnership with Global NCAP, the AA has shown that some locally sold vehicles offer lower protection than models sold elsewhere. The AA is calling for mandatory crash testing, star ratings, stricter certification, and stronger oversight to improve vehicle safety.

SOLAR BOOST - AXALTA'S GLOBAL COLOUR FOR 2026



Axalta Coating Systems has announced "Solar Boost", a warm and inviting orange tone, as its 2026 Global Automotive Color of the Year. This selection reflects the increasing consumer demand for vehicles that express personal identity and a broader shift toward individualistic design choices beyond traditional neutrals.

A vehicle's colour significantly influences a buyer's initial perception, impacting feelings about safety, sportiness, elegance, and resale value. Axalta's research indicates that over 80% of buyers consider colour a key factor in their purchasing decision, making it crucial for manufacturers to align their colour portfolios with evolving global consumer sentiments.

"Solar Boost" aligns with growing interest in expressive colours, particularly among younger and trend-conscious buyers. Axalta's global colour research shows orange is an emerging shade that connects emotional expression worldwide: Evokes warmth, optimism, and creative energy, reflects vibrancy and celebration, and symbolising life and joyful expression.

SOUTH AFRICAN CAR OF THE YEAR



The South African Guild of Mobility Journalists has unveiled the 30 semi-finalists competing for the 40th edition of the 2026 Car of the Year title, representing 22 brands across multiple vehicle segments.

There were 55 new models qualifying for the 2026 edition. Following voting by SAGMJ members, 30 semi-finalists have been selected, with the 25-juror panel now voting to establish the finalists. Old Mutual Insure returns as title sponsor for the competition, which launched in early November.

Thami Masemola, Chairman of the COTY competition since 2024, said it was a tremendous honour to be part of this significant milestone in SAGMJ's annual competition. He noted that the stakes are higher than ever, driven by intense rivalry for the hearts and minds of South African car buyers.

The 30 semi-finalists include the Alfa Romeo Junior, Audi A5, Audi RS Q8, BMW 2 Series Gran Coupé, BYD Dolphin Surf, BYD Shark, Chery Tiggo 7 PHEV, Chery Tiggo 9, GWM Haval H7, Honda Amaze, Hyundai Alcazar, Hyundai Santa Fé, Jaecoo J5, Jetour T2, Land Rover Defender OCTA, Leapmotor C10 REEV, Lexus GX, Mercedes-AMG CLE 53, Mercedes-AMG E53 Hybrid, Mercedes-AMG GT 63 S E, MG Cyberster, MG ZS Pro, MINI Aceman, Omoda C7, Opel Grandland, Renault Duster, Suzuki Dzire, Volkswagen Golf 1.4TSI, Volkswagen Tayron and the Volvo EX90.

The qualifying vehicles span compact hatchbacks, family SUVs, performance saloons and bakkies. The surge in new-energy vehicles entering the South African market in 2025 has expanded customer choice significantly.

The jury will select finalists before conducting an intensive two-day testing process in March, scoring each contender to determine category winners. The overall winner will be crowned in May 2026.

INDUSTRY EVENT



AUTOMX INDUSTRY CONFERENCE 2026: A MUST-ATTEND EVENT

The AutoMX Industry Conference, taking place from 23–25 March at Sun City, is shaping up to be one of the most significant automotive repair and insurance events of the year. With demand already high and the event almost fully booked, organisers have opened limited additional capacity, subject to availability. For body shops, insurers, OEMs and industry stakeholders, this conference offers a rare opportunity to gain insight, build relationships and prepare for the future of collision repair.

A major highlight of the conference is the strong presence of leading OEMs, all of whom play a critical role in shaping repair standards, approvals and compliance. Attendees can expect in-depth presentations on new developments in body shop approval programmes, a topic of growing importance as vehicle technology becomes more complex and OEM requirements continue to evolve.

Ford Motor Company of Southern Africa will use the conference to award its regional and national body shop prizes, recognising excellence and best practice within its approved repair network. Certain OEMs, including Ford will have breakaway sessions to discuss matters relating specifically to their respective approval programmes. For repairers, these sessions provide valuable insight into what OEMs value most and how to position their businesses for future approvals and recognition.

Beyond formal presentations, OEMs will also host interactive Q&A sessions, giving attendees direct access to approval programme representatives. These sessions offer body shops and insurers the chance to clarify requirements, discuss challenges, and gain practical guidance directly from the source. Opportunities to meet OEM approval teams face-to-face are rare, making this an especially valuable aspect of the conference.

The programme also extends beyond technical and operational topics. Renowned motivational speaker Al Producers, best known for his role on Just Off the Highway, will take the stage to deliver a keynote address focused on mindset, resilience and performance. His presentation is expected to resonate strongly with business owners and managers navigating skills shortages, rising costs and increasing pressure from both OEMs and insurers.

An extensive exhibition area will run throughout the conference, showcasing new products and services designed to add real value to body shops. From repair technology and tooling to digital solutions and operational support services, the exhibition provides a hands-on opportunity to explore innovations that can improve efficiency, quality and profitability. For insurers, it offers insight into emerging technologies that can support faster, safer and more cost-effective repairs.

AutoMX also recognises that strong business relationships are built outside the

workshop and boardroom. On the social side, the event includes team-building activities and a prestigious gala dinner, where entertainment will be provided by Dr Victor and the Rasta Rebels. Uniquely, many attendees have chosen to bring their families, reinforcing the conference's reputation as more than just a business event. This relaxed, inclusive environment creates ideal conditions for meaningful networking across all sectors of the industry.

The conference is expected to attract a diverse audience of dealers, OEM representatives, insurers and body shop professionals, creating a truly integrated industry platform. For body shops, the value lies in understanding OEM expectations, staying ahead of approval requirements and building insurer relationships. For insurance professionals, AutoMX provides insight into repair trends, OEM standards and the capabilities of leading repairers.

With its combination of technical content, OEM engagement, product innovation and networking, the AutoMX Industry Conference is more than a diary date—it is a strategic investment in the future of collision repair. Those able to secure a place can expect three days of insight, connection and inspiration at one of the industry's most anticipated events.

Contact Charne Conradie to book for the event: charne@automx.co.za

The AutoMX Industry Conference will be held at Sun City and is shaping up to be one of the most significant automotive repair and insurance events of the year.





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THE ROAD AHEAD

AN AUTOMOTIVE REVOLUTION IN FAST-FORWARD MODE



Ian Groat
Publisher

Let us start at the beginning. More than 50 years ago, the core task of **Automotive Refinisher** was established: to deliver, through a bi-monthly journal, the very latest global trends and innovations emerging from the fast-moving theatre of automotive crash repair. At that time, change was evolutionary. Today, it is nothing short of astronomical.

The scale and complexity of transformation confronting the trade has accelerated beyond anything previously experienced. Aftermarket repair products are mutating to accommodate multiple powertrains, artificial intelligence and a myriad of external influences that are redefining how vehicles are conceived and built. This is set against an exponential increase in new vehicle model releases which, since 2018, have doubled and in some cases trebled year on year.

These game-changing disruptions are now clearly visible on the collision-repair horizon. Even the clearest crystal ball is incapable of predicting what the automotive aftermarket will look like in the next 10 to 15 years.

The USA scenario

In the United States alone, up to 17 brands are predicted to cease selling models this year. Electric start-ups are facing direct challenges from famous legacy manufacturers, with an important backdrop – most USA buyers remain wary of pure electric vehicles.

Stellantis is mired in difficulty from Chrysler to RAM, with even the Jeep division appearing to be out of step. The days of \$80 000 SUVs and pick-ups (bakkies) have well and truly hit a road-block.

The additional tariffs applied to imports have led to rapid re-thinking of what vehicles will be built in the USA – Genesis, for example, are planning to increase the number of USA built models.

Nissan's ongoing CVT transmission and variable compression ratio engine warranty problems continue to add cost, at a time when redefinition of its relationship with Renault as well as the growth of Geely-invested 'Horse' adds further uncertainty.

For the USA the short-term powertrain winner is split between HEV and PHEV – BEV remains a segment that could grow in the longer term. The uncertainty lies at the very heart of today's turmoil.

Europe implodes

In the third quarter German manufacturing industry increases its spending to prepare for the year ahead. However, in 2025 this spending was down one third compared to the same period in 2024 – and the overall production output fell 20% by year end compared to 2024. For context, 2024 was not a very good year.

This chaos is reflected across Europe as the gap between policy and product widens – the policy was to drive BEV regardless, and consumers voted with their wallets. Meanwhile European politicians have sought to be ever closer to China which resulted in apparent lack of support for the domestic manufacturers and support for China imports.

Right now, Stellantis are struggling to find reasons to keep Alfa Romeo, Fiat, Lancia and Maserati. Behind that the future of DS and even Citroën seem uncertain.

Direct taxation/penalties for domestic manufacturers continue even though the damage is profound, as the market opens up for lower cost vehicles.

China really arrives

After an internal market price war which has raged since 2022 combined with the effect of creative finance to increase the production capacity of domestic manufacturers, China is set to drench the global market with more cars and more models that we have ever seen.

The domestic market price war has purged most of the non-domestic brands, although the much-proclaimed technology advancement is not quite what it seems.

The outcome will be markets such as Europe will be dominated by Chinese brands, able to offer apparently good build quality and extensive features at prices the European automotive companies cannot match. By the time the response arrives – it will be too late.

Few spares, difficult to access repair processes and poorly integrated software access will lead to a supply only market – the car breaks, throw it away and get another. This will not only be inside China but also other parts of the world.

Software-defined vehicles set to rule

The Wall Street fast money has hopped from autonomy to SDVs. This new electronic architecture is already manifesting itself in more than 40 new BMW models, built with ultra-thin wiring looms and fully integrated control modules. Are we ready for this?

The forthcoming iX3 launch may well provide the answer.

However, SDVs are limited by the hardware capability. Even at the recent Consumer Electronics Show of 2026 many automotive electronic suppliers finally admitted over air updates will not refine vehicle performance endlessly. Perhaps 2026 will show SDV was a bit of a dead-end, like autonomy?

ADAS edges into big government

SAE define advanced driver assistance

from level 0 (no aids) through to level 5 (get into the vehicle, no interaction, and it will take you to the desired destination with no human assistance).

Most vehicle manufacturers selling in Europe and North America have landed on SAE level 2, which complies with legislation and gives consumers useful features such as automatic emergency braking, adaptive cruise control, road sign recognition to limit vehicle speed, lane departure warning, lane keeping and blind spot vehicle detection.

The next step – SAE level 3 – requires geo-fencing. This enables the driver to go hands free in designated zones, provided they demonstrate the steering wheel is in their hands every few minutes. This is a much more difficult system to enable – and depends on high-capacity data transfer to as well as from the vehicle – presently via 5G.

So, for the moment, until something better than 5G arrives, most vehicle manufacturers have stopped off at SAE Level 2. Guess what's headed to South Africa?

Stock demand falling across global markets

Stock levels are now telling their own story. In the USA, Mini is reportedly holding up to four months' worth of unsold vehicles. China's vast manufacturing sector is operating at around 50% capacity. Across Europe's 12 major vehicle plants, plant utilisation is closer to 85% and in some cases 97% – but overheads and high taxation challenge profitability.

What about collision repair?

If you are beginning to feel a sense of helplessness, you are not alone.

Parts availability and sales back-up for certain models in our local markets are increasingly questionable. A glance at consumer platforms such as Hello Peter reveals the frustration of Chery owners, many visibly upset by poor service levels. This represents a new frontier in vehicle repairability – and a daunting reputational risk for body shops unable to deliver timely crash repairs.

A cautious note of optimism

Finally, on a more positive note, industry pundits are forecasting up to 30% aftermarket growth as vehicle ownership expands, particularly across emerging African economies.

The real question is how we are going to train, adapt and keep pace with this technological tsunami. In a world where God made the Earth round – so that we cannot see too far ahead – perhaps that limitation is, in some ways, a blessing.

We may just be lucky on that ones.

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INITIATIVE

SANTAM TAKE A COLLECTIVE APPROACH ON THE ROAD OF TECHNOLOGICAL CONVERGENCE



Santam, South Africa's largest motor book insurer, is steering into bold new territory. The company has set its sights firmly on the fast-changing automotive landscape, where engineering marvels and technological leaps are reshaping the way collision repair is understood, managed, and delivered.

The pace of change is relentless. Autonomous vehicles, electric drivetrains, and connected car technologies are no longer distant concepts but realities already rolling onto our roads. For insurers and repair professionals alike, these shifts present unprecedented challenges. Damageability, repair complexity, and calibration requirements are redefining service levels, while customer expectations are climbing higher than ever.

Locally, the decline in vehicles carrying insurance is still decreasing. There is a definite correlation in the drop of insurance repair volumes in body shops due to this fact. Affordable – and compulsory vehicle insurance – is called for and would have a reverse effect on the current negative trend.

In response, Santam has initiated a comprehensive review of its national service supplier network, with process partnerships

to be focused on body shop service level agreements.

Rowan de Villiers, Executive Head: Claims Solutions, explains: "This process is about understanding how well we, together with our repair partners, are positioned to meet the innovation curve head-on. Right-first-time repair isn't just a goal – it's becoming an obligation as technology and consumer protection frameworks evolve. A customer centric approach needs show an excellent experience, along with swift quality repair, restoring their vehicle to as good as new with as little friction and disturbance to their everyday life."

Historically, cost control has carried much of the weight in collision repair strategy, balancing affordability against the risk of vehicles becoming uneconomical to repair. But the ground has shifted. Legislative pressures around warranties, combined with consumer protection mandates, now demand fresh thinking in the insurance-to-repair value chain.

For Santam, the challenge is not simply about keeping insured vehicles on the road – it is about embracing a broader responsibility. The company acknowledges that collision repair is no longer a matter of replacing

panels and matching paint. It's an intricate process involving sensors, software, and systems that must be recalibrated to factory standards. The margin for error is thin, and the cost of getting it wrong is high.

Santam's ongoing market analysis aims to chart a sustainable course through this era of technological convergence. There is also continued commitment and support for transformation for exempt micro enterprises (EME) and qualifying small enterprises.

The insurer is looking at global safety legislation, rising customer demands, and the wave of mobility solutions redefining how people move. This includes the rapid increase of Chinese models finding their way onto local roads, without a clear path as regards the provision of parts or repair strategies and techniques.

The goal is clear: to ensure that South Africa's collision repair ecosystem remains fit for purpose in an automotive world that is rapidly transforming. In a sector defined by rapid innovation, one truth has become inescapable – the future is not tomorrow, it is already here. And for Santam, that means working collectively with the collision repair industry to ensure readiness for what lies ahead.





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TECNOLOGIA NUOVA DI VERNICIATURA

MIPA PUR-HS COVERS CITY SIGHTSEEING SA

Another customer switches to MIPA PUR-HS: City Sightseeing SA joins a growing community of users benefiting from the leading pure 2K commercial system.

City Sightseeing SA, started in Cape Town in 2002. Their iconic double decker red buses are seen all over the Mother City, allowing locals and tourists alike, to experience the best that Cape Town, and the surrounds, has to offer. Cruising the canals and the harbour have been added to their repertoire with an additional fleet of small boats, one of which is the first full electric boat in Cape Town. The company have their own body shop complete with commercial spraybooth, to keep their vehicles and boats always looking their best.

City Sightseeing have recently changed their refinish coatings system to MIPA PUR-HS, Germany's most advanced pure 2K commercial paint system.

MIPA's solution is easy-to-use and provides higher coverage. Quicker drying times speed up the process and help with productivity in the shop. Superior gloss retention ensures the vehicle or boat, maintains a perpetually striking and fresh appearance.

“

**“THE EFFICIENCY
GAINED IN TIME AND ON
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MAKES THE MIPA PUR-HS
SYSTEM AN OBVIOUS
CHOICE.
THIS SYSTEM COMBINES
ECONOMIC AND COST-
SAVING APPLICATION
WITH FIRST-CLASS LOOK
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Warren Melville
head of KAPATAL team in
Cape Town

”

MIPA also provide state-of-the-art colour matching technology and an extensive commercial vehicle colour database. Primer and filler are the base of a successful top coating. The MIPA product range for commercial vehicles offers solutions for every substrate and every requirement. This system allows economical wet-in-wet coating structures as well as high gloss finishes with intermediate sanding.

City Sightseeing SA is saving significantly with PUR-HS, achieving 50% better coverage on all their red buses and reducing overall application time.



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KAPATAL

After BMW South Africa's R4.2 billion investment to hybridise Rosslyn's X3 production line in 2023, the automaker has produced over 403 114 new-generation X3s in petrol, diesel, and plug-in hybrid variants for export to 40 countries, including 14 in Africa. The X3 has impressed South Africans so much that it was named the 2025 South African Car of the Year.

It was therefore exciting to get behind the wheel of the new BMW X3 M50, built at BMW's Spartanburg plant in South Carolina, USA, which produces the marque's M Performance SUVs.

The X3 M50 sits at the top of the new X3 range and perfectly blends everyday practicality with impressive performance. Its sleek geometric design, flared wheel arches, illuminated kidney grille, and signature M styling give it a dynamic stance, while 20-inch M alloy wheels, quad exhausts, and a rear spoiler reinforce its sporty identity.

Under the bonnet lies BMW's most powerful six-cylinder petrol engine ever fitted to an M Performance X3. The 3.0-litre turbocharged engine with 48V mild-hybrid assistance produces 293 kW, launching from 0–100 km/h in 4.6 seconds – performance on par with many sports cars. Power is delivered through an eight-speed Steptronic Sport transmission to all four wheels, ensuring smooth, rapid acceleration and excellent grip in all conditions.

Standard M Sport features include adaptive suspension, sport steering, powerful brakes, and an M Sport differential for agile cornering and outstanding control. In Sport mode, the X3 M50 feels sharp and composed; switch to Comfort mode and it transforms into a quiet, efficient everyday cruiser. The autonomous highway

assist system – activated from the steering wheel – manages speed and following distance, easing long commutes.

Inside, the cabin combines luxury and sustainability, with premium materials and a modern design featuring recycled polyester knitted dash fabric. Highlights include heated sport seats, a new flat-bottom steering wheel, and BMW's curved digital display running Operating System 9, which emphasises voice and touch control. While the clean, minimalist dashboard looks futuristic, more physical buttons for basic functions would improve usability.

Connectivity is excellent, with a wireless charging pad, four USB-C ports, and 12V power sockets in the cabin and luggage area. A fixed panoramic glass sunroof enhances the sense of space, and the outstanding sound system creates a concert-like experience.

The new X3 also raises the bar for semi-automated driving. Standard features include front collision warning, lane departure warning, and speed limit information, while the Driving Assistant package adds lane change warning and manual speed limit assist. The Reversing Assistant and Reversing Camera make tight parking effortless, adding to its high-tech appeal.

Overall, the BMW X3 M50 is a thrilling and sophisticated all-rounder that balances power, comfort, and technology with everyday practicality. Whether tackling a daily commute or an open-road adventure, it delivers a premium driving experience that justifies its flagship status.

Built to the same exacting standards whether in South Africa or the U.S., the new X3 generation proves why BMW remains a leader in performance SUVs.

Price: R1 545 447 (including VAT and BMW Motor Plan).

DRIVEN

BMW X3 M50 xDrive



WHAT'S HOT?

A FAIR RATE FOR COLLISION REPAIR

Are modern cars more complex? The quick answer is approximately 800 to 1 200 documents are needed for a new model type, depending on the vehicle manufacturer. Vehicles engineered way back in 2010 for example often required only 400 documents.

Every single vehicle starts with some form of body structure made from multiple parts which then sealed and painted. Once the Assembly is complete, many, many parts are fitted to the structure. In manufacturing each task is broken down into units of around two minutes, which is linked to the speed and length of the assembly line. The line moves in lock step from pressing panels through to just in time delivery trackside of everything from SRS airbags to seat sets.

Of course, collision repair is not manufacturing

So, whereas an assembly line copes with no more than two or three body styles, a collision repairer has to deal with almost anything turning up outside the business. Similarly, the assembly which absorbed some collision impact energy, the body, is buried beneath a whole gaggle of parts.

Getting to the core of the repair means taking of multiple layers of parts.

The more complex the vehicle, the more layers there are, the longer it takes.

Over the past decade each model range has had many possible powertrains added (hybrid, plug-in hybrid, pure electric) in addition to a host of other systems as well. To compound this, there are fewer big volume sellers, meaning more models chasing a given new vehicle market. This means less opportunity to hone great ways to remove entire sub-assemblies rather than component by component, and so less opportunity to save time.

While the Bugatti Tourbillon is super-fast, and super complex, compare it to a typical mass market HEV or PHEV vehicle. While the body can take more people and more luggage as well as accelerating without causing whiplash for the occupants, the front end is full to the brim with systems.

What can a 'system' include?

Let's consider a base vehicle with a manual transmission and internal combustion engine powertrain. To comply with prevailing legislation and so be legal to sell, the tail pipe emissions need to be controlled. So, we shall add but one system of the many systems required to do this: EGR (exhaust gas recirculation). Here are the parts that need to be created for one sub-system.



- A revised exhaust manifold with a port for exhaust gas
- A revised intake manifold with a port to allow exhaust gas to enter it
- A valve to allow exhaust gas to be controlled
- A cooler to reduce the exhaust gas temperature entering the intake manifold
- Pipes / gaskets to link the two manifolds, the cooler and valve together
- Coolant hoses for the cooler
- Clamps, screws and brackets.

If we add serum dosing, particulate filter regeneration, an electric drive system in addition to the engine – each will attract a gaggle of features such as 'EGR' complete with all the bits to make it work. Every single part is in addition to our relatively simple starting point.

If that enhanced vehicle is in a collision, more parts need to be removed before we can reach the area of the body which absorbed the impact energy.

Is there a move to integration?

A favourite of modern powertrain design is to make the most amazing intricate pipe assemblies, which take less than a few seconds to fit in manufacturing. Yet, inevitably, these parts are in the way of other things in repair; can easily be damaged during impact or even in subsequent removal.

The old way was to make castings, for example, carry internal ducts to carry fluids. Tesla did this with the 'super manifold' which first appeared on Model 3, making a front strut tower cross brace perform several other tasks as well. In the battle of the European automotive business for survival, there is a move to make fewer parts do more jobs, so reducing assembly cost during manufacture.

The flip side is if those highly integrated parts which reduce assembly time during manufacture cause extra cost/complications during repair; it will make a bad situation worse.

The collision repair business needs to be able to keep vehicles alive for longer, so that we have a more prosperous long-term business. The issue is with pressure on vehicle values and complexity not only in the products but also the smaller number of any single model being sold, makes throwing away the vehicle more likely than less.

Re-thinking the hourly rate

Not all vehicles in collision repair are new, or even nearly new. The majority of the vehicle population has an average age close to 10 years old. An idea presented by Wayne Mason-Drust is based on pre-accident value, which could mean:

- A brand-new model/type needs proper research of all the repair documents, and that will scope how many systems need to be taken apart along with requirements for recommissioning them when the repair is complete. The residual value of the vehicle will be higher, so there's more room to work before it becomes an economic write-off

- A 10-year-old vehicle, especially one that's quite common, needs a refresher session to ensure the correct documents are at hand, and the full repair is scoped. However the research time will be reduced thanks to retained knowledge, there is less likelihood of needing to recalibrate things such as ADAS, so the allowable repair cost per hour could be lower

- This means a repairer will get the opportunity to work on a range of vehicles rather than being governed by the most expensive labour rate regardless of vehicle value. More repairs, more profit.

This is the start of a discussion.

How do vehicles presently going to salvage get the opportunity to be repaired instead. Yes, that will involve discussions about how much money a repairer gets paid per job.



Ruvann Brink (third from left) was well supported in his VDQ qualification journey by his team members from Telesure Investment Holdings, IT-C and the VDQSA.

GROUND BREAKING

RUVANN BRINK ACHIEVES FIRST VDQ CERTIFICATION

It only takes one person with the courage and vision to pave the way for others to follow. In a South African, and world first, Ruvann Brink has qualified with the Vehicle Damage Qualification (VDQ) certification.

Insurers and repairers are subjected to ever growing demands on cost effectiveness due to increased safety features and parts pricing on vehicles. The focus of the VDQ skill is to understand and apply relevant knowledge of vehicle body construction, active and passive safety system, mechanical, electrical and other intricate information

used to restore a motor vehicle to as good as new after an accident.

With 504 credits – more than many B-Com degrees – this is a tough qualification to attain. It is also equivalent to a level NQF 4 and can achieve a level 5 and 6 after adding extra information in the future. To pass there is a level of 70% on the theory and 80% on the practical. A very high standard indeed.

With the help of IT-C and the full support of Telesure Investment Holdings (TIH), where Ruvann is employed, he took full advantage to realise this goal. Ruvann's path was that of

Recognition of Prior Learning (RPL), as he has already been working in the industry for several years.

TIH have been so impressed with the qualification, that they have enrolled all their assessors onto the course via RPL with IT-C, a first for the company, that will stand themselves, and the industry, in good stead for the future.

The VDQ qualification will only increase skills to meet the needs of the avalanche of new technology already seen throughout vehicle models on the road, and in the future.

WHAT'S HOT?

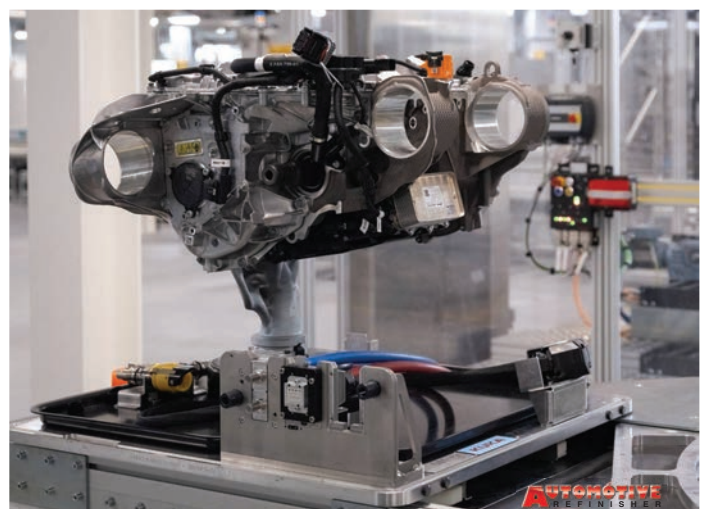
BMW BEGIN SERIES PRODUCTION OF ELECTRIC MOTORS

The BMW Group plant in Steyr has commenced series production of the first fully electric drive system dedicated to the sixth generation of eDrive technology (Gen6). This will form the basis for the future Neue Klasse model range.

The most important components – the rotor, stator, two-stage helical gearbox and highly integrated converter – which form the heart of the electric drive, are manufactured at this Austrian factory, while the aluminium housing is produced at the foundry in Landshut and then sent to Steyr for further assembly.

A significant development is the establishment of a clean room environment at this facility, where the converter is manufactured, marking the factory's entry into the field of advanced electrical engineering.

Thanks to improved geometry, optimised cooling, reduced transmission friction and the use of silicon carbide semiconductors, the new 800-volt architecture has enabled the development of completely redesigned components – the rotor, stator and converter – which significantly increase the efficiency and dynamics of the motor.





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FUTURE SHOP

WHAT DOES IT MEAN TO BE A SHOP OF THE FUTURE?

Are you in it to win it? Does repairing electrical vehicles and advanced driver assistance (ADAS) excite you? Do the computers on wheels today stimulate you to learn more? Does your shop feature a dust-free environment? An ADAS calibration bay? An EV repair bay? An aluminum repair room?

Then you are a 'shop of the future.'

Are you not looking for an exit ramp but instead punching the pedal to the metal? Do you review the numerous challenges facing the collision repair industry as opportunities, not obstacles? Are you investing heavily in training your staff on today's spaceships on wheels?

Then you are a shop of the future.

Does your repair blueprint include looking up the OEM procedures and creating a 'bulletproof' file confirming that the repair was done to OEM specs? Does it also include an electronic blueprint with a plan to handle diagnostics and ADAS repair? Are you investing in new technology or upgrading equipment to modernize your shop and handle the rolling computers made of exotic materials coming in your door?

Then you are a shop of the future.

Are you seeking future body shop technicians and other employees via nontraditional routes with education and work experience backgrounds you haven't sought in the past so that their skills might match better the sophisticated technology coming into your shop? Are you the shop that everyone wants to work at in your region?

Then you are a shop of the future.

Equipment

Equipment and technology are truly integral in today's collision repair industry. To repair the smartphones on wheels today, you must have modern scan tools, ADAS calibration equipment and more. Sure, there is still the need for sandpaper, hand tools, sanders, welders and more. But the game has changed.

With welders, for example, you can't just

grab and go. You need to know what you're working on first by reading the OEM repair procedures. What kind of welding does the OEM recommend? What substrates are in the vehicle that might be sensitive to heat? What electronics are in the vehicle that might also be sensitive to heat? Do you have a spot welder? Every shop needs one today.

And then there's ADAS calibration. Most automakers are requiring this step now, even for minor cosmetic damage. Do you have the proper shop equipment for it? Will you just be doing forward-facing camera (FFX) calibration or blind spot and others? Do you have technicians capable of doing this type of work?

A virtual incubator

One thing that is not talked about enough is the amazing genius, inventiveness, creativity and ingenuity demonstrated by equipment manufacturers within the collision repair space to invest new tooling and equipment to address this calibration need. Some say out of all the industries in the automotive aftermarket, collision is usually the slowest to change. But I would challenge that assertion after witnessing how the collision industry has become a virtual incubator over the last decade or so for new equipment and technology designed to handle the cameras, sensors, radar and more in today's ultra-sophisticated vehicles.

The future

Take it as far as your mind will allow. Can you imagine collision repair facilities one day being as sterile as hospitals? Where cars are triaged as they come in and assessed by employees holding tablets (or maybe writing up the repair plan on a virtual touch-board?) in full personal protective equipment.

(PPE)? Each car will be given a health scan to know of any preexisting and other conditions and whether or not they're related to the collision. A post-scan health check will be conducted after the repair and right before delivery to the customer.

The cars are sent to different areas of

the shop based on their needs and what propulsion method they utilize. EVs are tested, and if their batteries are compromised, they will be isolated safely and securely per published safety guidelines. An EV bay in the shop has a battering lifting table, plus a digital volt ohm meter, milliohm multimeter, megohm meter and all of the safety PPE necessary. Also, non-EV certified techs are locked out from touching or repairing EVs.

Then there's ADAS. Once the vehicle is ready for calibration, it is moved to a space devoid of sunlight or shadows and reflective surfaces, with a floor validated as level. The space is at least large enough to handle FFC calibrations. Only ADAS-trained techs are allowed in this space to work on the vehicle. Maybe some automakers will have implemented self-calibration ability within the vehicle. AI will be able to get you exact OEM repair procedures in seconds.

Let's get crazy. Perhaps there is a conveyor belt that moves the vehicle from stop to stop throughout the shop, in a logical and linear pattern. There are large flat screen monitors where techs can interface with vehicle owners, who can watch the progression of repairs in their vehicles and be updated on status. Techs can also use the screens to interface with managers and others, who are busy doing other things in different parts of the shop and thus have the need for efficient virtual contact. Maybe they'll be holographic humans? Again, it's whatever you can let your imagination take you.

Summary

The future is unstoppable. There are as many changes happening in the collision repair industry as there are in publishing and media. There is no industry that has been untouched by the lightning-fast advancement of technology and AI in the last five years. What do they say? There has been more change in the last five years than the previous 20, and there is more to come for sure.

BUILDING A FUTURE

FROM SURVIVAL TO STRATEGY - WHAT EVERY MBR BUSINESS NEEDS TO CONSIDER GOING INTO 2026



Busi Maile

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f Swift Auto Body Repair

As we enter the first quarter of 2026, most panel shop owners and managers would agree: 2025 was a difficult year across the board. The global economy shifted under our feet – currency volatility driven by renewed Trump-era policies made imported parts more expensive and unpredictable. Locally, we dealt with the usual headwinds: load shedding that stopped production without warning, long parts lead times (especially OEM), higher material costs, tighter insurer controls, and increasingly complex vehicle technologies that demanded more skill from technicians than ever before.

Despite this, the industry kept moving. Staff were paid, customers were assisted, repairs were completed, and claims were closed. The resilience in this sector is undeniable. But resilience without reflection is not a strategy. If 2025 taught us anything, it is that running a panel shop in South Africa requires more than technical expertise – it requires constant recalibration.

Auto body repair businesses form an essential part of South Africa's economic fabric. Beyond employing skilled workers, they support families, stimulate local and regional economies, bring young entrants into the labour market, and ensure safer roads for all. Given this responsibility, the beginning of each year is not simply a formality – it is a crucial checkpoint for reflection and planning.

Taking stock of 2025

The first step is to honestly assess what worked, what didn't, and what requires a complete rethink. Many shop owners operate in "doer mode" – fix the car, move the job, meet the deadline, answer the insurer, manage the team. With this pace, sitting down to review performance may feel counterproductive. But the MBRs that take strategy seriously consistently outperform those that don't.

Studies continue to show that businesses that plan grow faster and last longer. While a 40-page strategy document may not be practical for our environment, a focused review of key performance indicators can make a meaningful difference. The basics still really matter: cash flow discipline, cycle time management, quality control, and operational efficiency.

Four areas every panel shop should reassess in early 2026

Financial performance remains the core indicator of business health. For our industry, this means understanding labour utilisation per technician, actual profitability per insurer, parts margins, the true cost of reworks, and how paint and consumables are being used. Many shops leak money not because business is slow, but because financial controls are weak.

Customer satisfaction has become increasingly important as insurers and OEMs tighten standards. Customers notice turnaround time accuracy, communication clarity, the condition of their vehicle at handover, and whether the shop delivers on its promise. A single negative survey result can affect future allocations.

Operational efficiency and staff performance remain central to sustainability. In 2025, many shops battled with absenteeism, declining work ethic among some staff, and skill gaps that became more visible with newer vehicle technologies. The first quarter of 2026 is the time to address these issues directly – through training, performance management, and stronger supervision on the floor.

Strategic adaptability is now a requirement. OEM procedures are changing, insurer approvals are becoming more stringent, and technology is evolving faster than ever. Shops that cannot adapt will fall behind. Reviewing your operational model at the start of the year helps position the business for a competitive environment.

Bringing your team into the strategy

Once the assessment is complete, the next step is communicating

the plan to your team. Success in this industry is driven by people – technicians, painters, estimators, parts staff, receptionists, cleaners, and drivers. If your staff do not understand the direction, the targets, or the standards required, the strategy will not move beyond your office.

Harvard Business Review highlights that staff buy-in is essential for execution. Employees need to understand what the business is trying to achieve, and they need to feel that they have a stake in it.

Several practical approaches that MBRs may want to consider:

- **Accountability through fair ranking systems**

Ranking systems, when implemented correctly, give staff clear expectations and measurable benchmarks. Examples include productivity and quality scores for panel beaters, defect rates for painters, variance tracking for estimators, and fulfilment times for parts staff. These systems create transparency and remove guesswork. However, they must be used responsibly to motivate – not demoralise – teams.

- **Improved communication across departments**

Communication breakdowns remain one of the biggest causes of delays and comebacks. When the parts department does not inform the workshop of delayed components, or when painters are not aware of preparation timelines, the entire production line is affected. Encouraging daily communication across sections helps reduce conflict, improve efficiency, and shorten cycle times.

- **Controlled experimentation and encouraging initiative**

The industry is changing rapidly. Allowing staff to propose new methods, test improved repair techniques, or optimise workflow processes encourages ownership. Of course, experimentation must be supervised and within reason – but giving your team space to think and contribute often leads to innovation.

- **Reinforcing the business's core values**

Values are not posters on a wall. They influence decisions when pressure is high. Whether it is protecting customer safety, delivering consistent quality, or maintaining professionalism, reinforcing these values ensures that the entire team operates with a common standard.

Looking ahead

The early months of 2026 have shown that the shops performing best are the ones that took the time to reset, plan, and involve their teams. Leadership in our sector is not glamorous. It is practical, hands-on.

If 2025 was a lesson in resilience, then 2026 must be a year of intentional improvement. Our industry has survived another difficult cycle – now it is time to build, strengthen, and lead with clarity.



SPRAY PAINTERS CLUB

CELEBRATING AN INDUSTRY, A COMMUNITY AND THE MOMENTS THAT MATTER

At the close of 2025, the Spray Painters Club in Cape Town, gathered with record attendance, not just to mark the end of the year, but to celebrate something far more meaningful which is resilience, innovation, and collective spirit of our industry. It is the people who shape progress and these individuals need to receive the praise and recognition.

This memorable event also marked the tenth anniversary of the Spray Painters Club. The club was born as a PPG initiative in 2015 with an invitation to the market's spray painting professionals to unite, participate and enjoy. PPG have proudly seen an increase and eagerness from the market to become members of the club.

Normally each event has an automotive theme and again Killarney Raceway did not disappoint. The attendees gathered at the VIP Boma to experience the sound of roaring engines, the sensation of raw power and most importantly, good company.

Over good food, warm conversation, and laughter that filled the room, the attendees connected and shared. A year gone by was celebrated with well wishes for a new year filled with goodness and prosperity. PPG has committed to roll out regional Spray Painters Club events nationally for 2026.



The Spray Painters Club in Cape Town, celebrated their tenth anniversary at Killarney Raceway.



Cheers to the tenacity and resilience of the collision repair industry.



Those who attended enjoyed great food and conversation, as well as much laughter.

RETIREMENT

A FITTING FAREWELL FOR CAROL LONSDALE - FOUR DECADES IN THE PAINT GAME

At the end of 2025, after more than 40 years in the paint game, Carol Lonsdale pulled off her overalls and excitedly stepped into a deserved and well planned retirement.

Few careers span four decades, and fewer still leave the kind of mark Carol has made on both the trade and the people within it.

Carol's journey began at a time when the industry looked very different - when product choices were fewer, techniques were learned hands-on, and reputation was built one job at a time. Through changing trends, new technologies, and evolving standards, Carol didn't just keep up; she set the pace. Her work has always been defined by pride, precision, and an unwavering commitment to doing the job properly.

In January of 1982, Carol entered the premises of AECI Coatings in Port Elizabeth to begin her first day of employment, sampling raw materials for compliance prior to the final production. Not long after, she transferred to the Quality Control Labs to test and approve or reject materials in manufacture. She continuously explored other opportunities and also tried her hand on formulating refinish products, doing colour formulations and introducing new technologies to name a few. It is also during this period and at the same facility, she found husband Paul.

Together with her family, she moved through the provinces, finally in 2009 settling in Durban where she held the position of Regional Sales Manager for PPG.

Now, after a period of 43 years in the



Carol Lonsdale.

automotive paint industry, Carol decided to retire and take a well-deserved break. As most of us know her - caravanning!

Congratulations on your retirement Carol. We salute you. May your retirement be both rewarding and enjoyable.



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TOP SHOP

PUTZMEISTER SA UPGRADE PAINT-PLANT

Hurricane Equipment has completed a major paint-plant overhaul for Putzmeister's Sub-Saharan Africa branch, installing two advanced spray booths and a purpose-built paint room to modernise the entire refinishing process. The upgrade brings the facility much closer to what you'd expect in a high-end collision repair shop – only on a scale built for heavy construction machinery.

Putzmeister is a global manufacturer known for its heavy-duty concrete pumps, mixers, batching plants, and other material-handling equipment. These machines work in tough outdoor conditions, so their paint coatings are not just for looks – they protect the metal from rust, wear, and harsh weather. A strong, long-lasting finish helps the equipment stay reliable on construction, mining, and industrial sites.

The South African division supplies a wide range of products, from small trailer-mounted mortar pumps to large truck-mounted concrete pumps with impressive reach and manoeuvrability. The company also imports concrete transit mixers from Germany and offers fully galvanised wet and dry batching plants. On top of that, they supply truck-mounted telescopic belt conveyors. As the construction industry evolves, Putzmeister continues to focus on innovation, sustainability, and delivering high-quality equipment for major infrastructure and mining projects across the region.

Recognising this, Putzmeister partnered with Hurricane Equipment to completely revamp their paint operations. The centrepiece of the upgrade is the installation of two new spray booths designed with the same airflow, lighting, and contamination-control standards commonly used in top-tier automotive body shops. These booths use balanced downdraft airflow to pull overspray away from

the work surface, helping painters achieve cleaner finishes with fewer defects. The improved lighting and controlled bake cycles also ensure that coatings cure properly, reducing rework and improving overall finish quality.

Alongside the spray booths, Hurricane Equipment installed a dedicated paint-mixing room – an essential element in any modern refinishing environment. Much like in the collision repair industry, a paint room provides a clean, ventilated space where technicians can safely store, mix, and tint coatings without contamination or fumes spreading through the shop. This not only improves accuracy in colour matching but also enhances safety and compliance.

The entire workflow of the paint plant was reorganised to mirror an efficient collision-repair layout: surface prep, masking, spraying, baking, and final inspection all follow a clear, linear process. This reduces bottlenecks, cuts down on unnecessary movement of equipment, and strengthens quality control throughout the refinishing cycle.

Ventilation and filtration systems were also upgraded, improving air quality for technicians and ensuring overspray is properly captured. The energy-efficient bake features within the new booths further reduce operating costs – a key consideration for any high-volume coating operation.

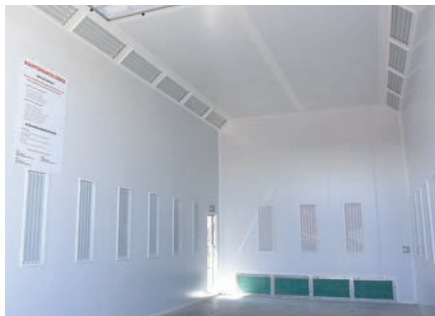
Ultimately, the revamp gives Putzmeister a modern, reliable and far more productive paint facility. With cleaner finishes, better corrosion protection, and faster turnaround times, the company is now better equipped to support growing demand across the Sub-Saharan region – while maintaining the durability and quality their machines are known for.



Putzmeister's heavy-duty machines are world renowned for their strength and durability.



With the help of Hurricane Equipment, Putzmeister have overhauled their paint-plant.

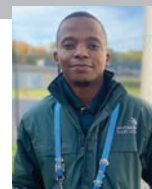


Ventilation and filtration systems were also upgraded.



SKILLS DEVELOPMENT

BEYOND COMPLIANCE: THE STRATEGIC IMPERATIVE FOR SUSTAINABLE SKILLS DEVELOPMENT



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Within South Africa's Motor Body Repair (MBR) sector, grants and sector-based funding have long served as essential mechanisms to support artisan development and improve workshop capacity. Yet, from our vantage point at C3 Auto Body Repair Academy, a consistent challenge persists across the industry: funding is too often treated as the goal rather than the tool. When grants become the destination instead of the vehicle, compliance overshadows competence – and sustainability suffers.

The compliance trap we see across the sector

Each year, countless apprentices arrive at C3 for trade testing. Many are talented and motivated but still underprepared. This is not due to a lack of potential, but because their training journey has been shaped around MOA deadlines instead of the technical depth required for mastery.

As we often summarise:

"A number of legacy apprentices fail not due to capability, but because they were never given sustained, structured technical exposure throughout their training – only a crash course weeks before testing."

One assessor recently shared an anecdote:

A candidate could prepare a bumper with impressive speed but had never actually blended a metallic. He had watched the process for years but never touched the spray gun. Yet he was expected to perform at a qualified level the next morning.

This is not a reflection of the learner's ability – it's a reflection of a compliance-driven system.

- When training is treated as a tick-box exercise:
- Businesses secure the grant but not the artisan
- Learners rotate without anchoring real skill
- Technical exposure becomes sporadic, not cumulative
- Production pressures overshadow long-term development.
- And the industry resets the cycle with every intake.

The overlooked commercial opportunity

Despite this, C3 has seen a recurring – and highly strategic – opportunity emerge. Many funded candidates, particularly in spray painting, begin performing at near-qualified levels long before their subsidy ends.

The numbers are compelling:

- A qualified Spray Painter earns R18 000-R30 000 per month.
- Many funded C3 candidates already perform the full scope of this role.
- Some still have 12–18 months of funding remaining.
- This is not merely a subsidy – it is production capacity at a reduced labour cost.

One MBR recounted how a subsidised C3 learner had become their "colour specialist," consistently matching difficult blends. Yet because he was a learner, he was rotated through prep work to satisfy logbook requirements. When the funding ended, another workshop recognised his skill and hired him immediately. The original shop owner later admitted: "I didn't realise how valuable he was until he left."

This happens all too often: workshops lose the very talent they helped build because the training focus was compliance, not strategic deployment.

Shifting from compliance to production-centred development

To unlock the full value of funded training, MBRs must redefine success. The goal is not completing compliance steps – it is retaining a competent artisan who meaningfully contributes to production.

Every subsidised hour a learner spends in the spray booth – typically the workshop's greatest bottleneck – increases throughput while reducing labour cost. For many MBRs, this single shift can:

- Increase weekly job cards
- Improve cycle times
- Reduce overtime for senior painters

Traditional Approach	Strategic Production Approach
Broad rotation to tick MOA boxes	Early placement into high-value tasks
Focus on logbook completion	Focus on competence and commercial output
Learners stuck in prep work	Learners share blending, refinishing, polishing
Fully paid artisans handle all advanced tasks	Subsidised labour reduces high-value labour cost
Grant treated as temporary relief	Grant treated as a production investment

- Strengthen insurer KPIs
 - Raise monthly revenue without expanding headcount.
- This is the ROI the sector is unintentionally forfeiting.

The grant is not the destination – it is the vehicle

From C3's perspective, training grants were never intended to serve as short-term cash flow supplements. They exist to help the industry build internal talent, reduce dependency on scarce artisans, and stabilise production capacity long-term.

MBRs should be asking:

"How do we use this funded period to build an indispensable artisan who strengthens our business long after the grant ends?"

When businesses shift from transactional to strategic training:

- Competence rises
- Retention increases
- Production stabilises
- Skills shortages shrink
- Business sustainability grows.

The difference is not the size of the grant – it is how the workshop uses it.

A call to the sector to build skills that stay

As C3 Auto Body Repair Academy, our commitment is not only to certify artisans but to support the sustainability of the entire MBR ecosystem. The sector's next leap forward requires a shift in mindset:

- From compliance to competence
- From rotation to mastery
- From funding relief to long-term production strategy.

Ultimately:

- The grant is not the win
- The artisan you retain – skilled, confident, and commercially productive – is the win

- And that is how the South African MBR sector will grow:

Not through more funding, but through smarter use of the funding already in place.



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LOCAL UPDATE

CLASSIC VEHICLES IN UK GAINING IN NUMBERS AND VALUE



Roger Houghton
News from the Zoo

Historic cars and motorcycles in the United Kingdom continue to grow in number and value, while providing a significant boost to the economy – estimated at £7.3 billion annually – and providing more than 34 000 skilled jobs. The survey reported that the average owner spent £4 567 a year on their vehicles, resulting in a total spend of £3.2 billion a year.

This is all detailed in the results of a recent national survey by the Federation of British Historic Vehicle Clubs (FBHVC). The organisation classifies cars and motorcycles 30 years and older as “Historic” while those aged between 20 and 30 years are given the new classification of “Young-timers”. One third of the surveyed participants owned a Young-timer.

The survey, which is conducted every five years, is reputedly the largest and most comprehensive of its kind in the world. This year it received input from 19 900 owners, enthusiasts, businesses, clubs, and members of the public with the FBHVC representing 500 member clubs, 51 museums and hundreds of individual members enthusiastic about older vehicles. (In the UK this includes buses, coaches, lorries, agricultural machinery, military, or steam vehicles).

Unfortunately, the motor clubs in South Africa do not have the resources to conduct a survey of this nature, but here we have a serious problem with a depleting number of historic vehicles as many are shipped out of the country for sale. Unfortunately, this includes many of particular significance and thereby highly valuable.

It is nevertheless interesting to learn about the growth being experienced by the historic vehicle movement in the UK.

According to the Driver and Vehicle Licensing Agency (DVLA) the number of historic vehicles registered in the UK currently stands at 1 934 178. There are an estimated 690 777 historic vehicle owners in the UK (up from 683 967 in 2020), with 9.7 million people in the UK who would like to own an historic vehicle. It is interesting to note that 88% of the owners of these vehicles belong to a motor club, with 20% of club members attending 10 or more events in a year.

The estimated value of the historic vehicle “fleet” in the UK has risen from £25.8 billion in 2020 to £35.1 billion in 2025.

A total of 4.3 million people said they had attended an historic vehicle event in the past year – a 100% increase over the data in the 2020 survey.

The movement supports 2 700 specialist businesses, collectively employing 34 500 people, across maintenance, restoration, parts supply, museums, and events. Nearly half of these businesses now offer apprenticeship programmes to pass on vital heritage skills.

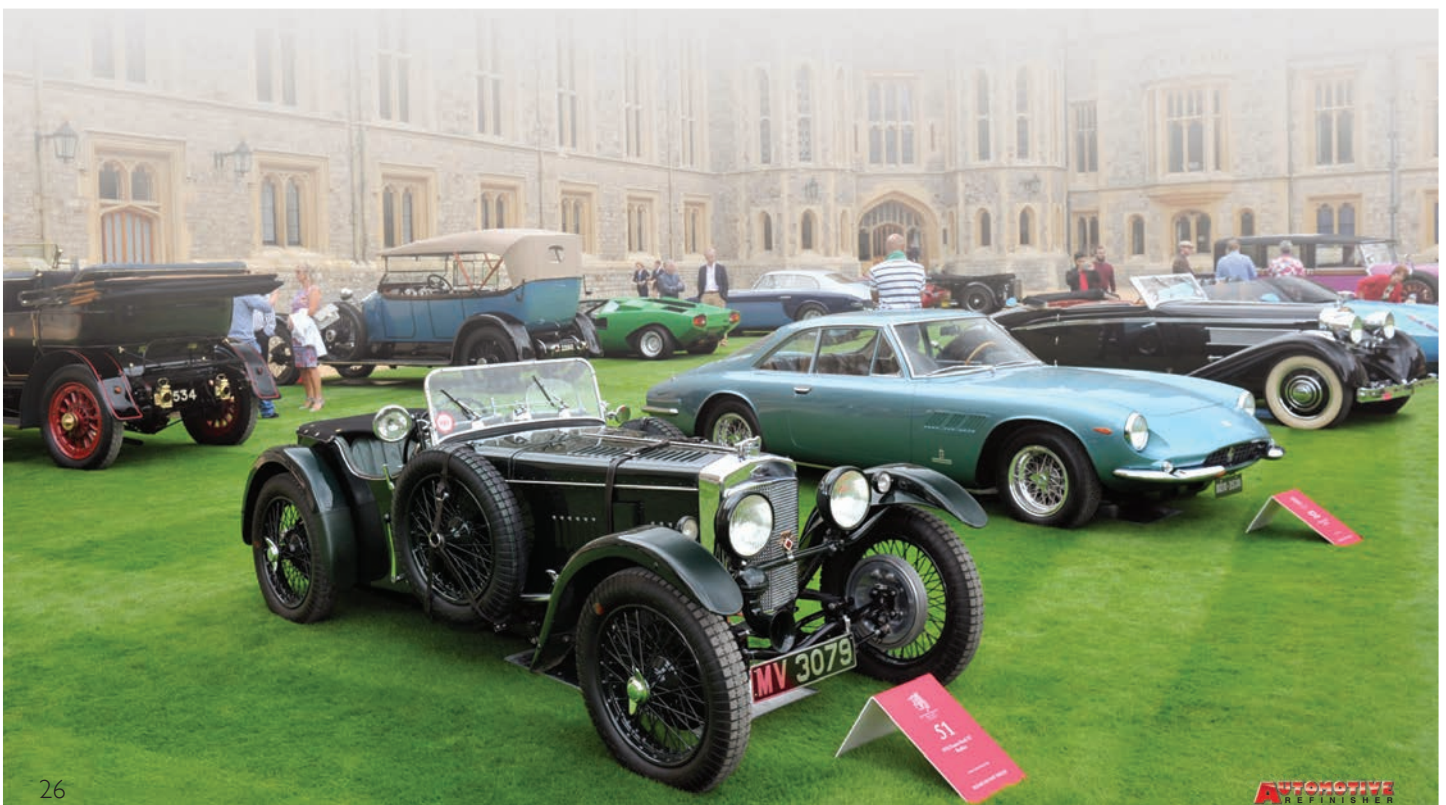
Despite their visibility, historic vehicles account for only 0.2% of all miles driven in the UK annually, with the average historic vehicle travelling just 837 miles a year.

The average age of owners of historic vehicles has risen to 66, highlighting the importance of encouraging younger enthusiasts. Encouragingly, the under 35s now show the most significant growth in interest in historic vehicles, while the “Young-timer” category (vehicles aged 20-29 years) now offers an accessible entry point for new enthusiasts.

A total of 496 females participated in the survey. They owned an average of 2.4 vehicles each, with an approximate value of their collections being £60 971. Their favourite car brands were Morris, MG, Austin, Ford, and Triumph, while the most popular motorcycle brands were Triumph and Honda.

Respondents over 75 years of age said that Jaguar and MG are their favourite car brands, while Jaguar is also the most popular car brand among the Young-timers, with 13% of total. It is followed by MG, Mercedes-Benz, Land Rover, and BMW. Ford is the most popular brand with those under 35 years of age. It is followed by Audi, Mazda, Peugeot, Mini, and Subaru.

The survey showed that in terms of Young-timer motorcycles Honda was a clear winner with 20% of the total. It was followed by Yamaha, Triumph, Suzuki, Harley-Davidson, Kawasaki, BMW, and Ducati.



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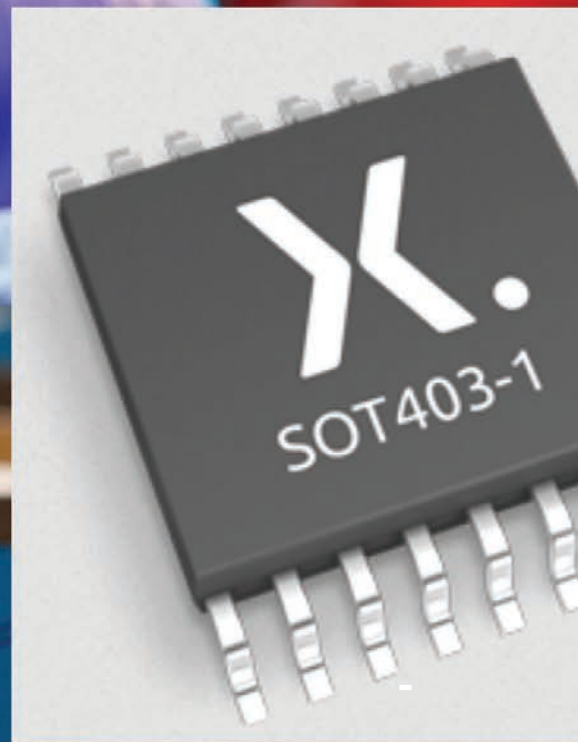
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FUTURE TECH

MISSING PARTS – INTERNATIONAL TRADE DISPUTES AND INTERNAL COMPANY RUCTIONS



We are painfully aware of 'on back order' or 'no delivery date' when ordering parts. Given the international tensions between the USA, EU27, UK and China – plus other regions – trade disputes at company level can end up as part of a bigger international dispute.

Surface mounted wonders

Inside each electronic module there will be a circuit board, a main processor, and a gaggle of inexpensive smaller components, all encased in a plastic box. Should any one of these become unobtainable, the sub-assembly cannot be made. The companies making such parts can be Tier 3 or 4 suppliers – a long way from the finished assembly the body shop is trying to buy.

Nexperia, a former Philips company now owned by Wingtech, makes small controller components which are fitted inside many, many control modules. Their products and service levels are so reliable that few Tier 1 suppliers or vehicle manufacturers believed there could ever be an issue.

The company started as Mullard Radio Valve Co. Ltd. of Southfields, London, in 1920, with help from Radio Communication Co., to compete with Marconi for Royal Navy communications contracts. This was also at the very start of the mass-market radio revolution. By 1924, the foundation of the BBC forced the company to seek investors, with Philips buying half the company, before acquiring full ownership by 1927.

By the mid-1950s Philips started making their first solid-state switches (transistors) in Nijmegen in the Netherlands. Production expanded via the UK, Germany, Hong Kong and the USA by the 1970s. In 1988 the Mullard name was replaced by Philips Components Ltd; annual output was three billion solid-state devices per year, which later became Philips Semiconductors Ltd.

In 2006 yet another re-name: NXP, which later hived off the solid-state device unit into 'Nexperia', with Beijing Jianguang Asset Management and Wise Road Capital (both from China) buying

shares in 2016. Annual production reached more than 100 billion solid state devices per year.

Wingtech Technologies bought Nexperia during 2019. By this stage, parts of the silicon wafer and base component production were in the Netherlands, with components finished and tested in China before export worldwide. – a truly global operation.

Concerns from the Netherlands

From 2022 onwards senior management of the Dutch part of Nexperia informed the Dutch Government about concerns including:

- Apparently setting up alternative bank accounts to divert customer money to China without informing clients.
- Apparently trying to de-register Nexperia patents in the Netherlands and set up China versions.
- Apparently discovering a plan to remove silicon wafer production lines and other specialist equipment from the Netherlands to China.
- Allegedly, Nexperia China failed to pay Nexperia Netherlands for some silicon wafer shipments.

The Dutch Government implemented a law to take over the Dutch part of Nexperia, on 30th September 2025 and to remove the CEO.

Concerns from the USA

The U.S. Commerce Department added Wingtech to an 'entities watch list' in December 2024 (Biden administration). This required Wingtech to apply for licences for any USA technology it needed to use. From September 2025 (Trump administration), the action was extended to cover all subsidiaries of Wingtech, such as Nexperia.

In an attempt to by-pass the rule, Nexperia in China formally declared independence from Wingtech – a move not recognised by the U.S. Commerce Department.

The Dutch part of Nexperia told the U.S. Commerce Department that it would comply with all requirements.

Defence and concerns from China

At company level, Nexperia China told some staff in the

Netherlands to ignore all European staff and that they would be paid regardless of events. There was diplomatic outrage from China towards the Dutch and USA governments, accusing them of collusion. The China Government demanded the release of the Dutch company and reinstatement of the CEO.

The upshot

In effect, from 30th September the supply chain inside Nexperia was broken, leaving vehicle manufacturers and their main Tier 1 suppliers with nothing more than the components in store. Within two weeks, alerts came from the USA, Japan and Europe as Nexperia component production stoppage affected a large part of the automotive industry.

Some vehicle and sub-assembly manufacturers reached for the extra-big credit card to buy out stocks wherever they could find them, while others pushed alternative sources to increase production. In parallel a presidential meeting between Mr Donald Trump and Mr Jinping Xi on the 29th of October 2025 went well, although USA and China had rather different views about what was achieved.

The Dutch Government made approaches to China along the lines of handing back control of the Dutch plant.

The fight is not over

The way China announced limits on rare earth metal export in April then extended the number of metals along with even tighter controls in October 2025, came as a shock. China has spent four decades acquiring mining rights and building the systems needed to process up to 90% of the global supply of key materials. This was a demonstration of absolute control. There was considerable provocation from the USA during this period, and it forms part of a wider global struggle for supremacy.

The EU27 and UK combined GDP is larger than that of USA or China, so perhaps the collective European voice should be heard. We are not just a political football.

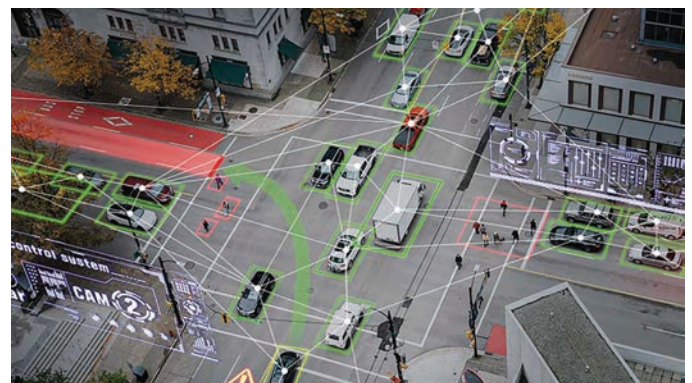


Andrew Marsh
hello@autobible.com

WHAT'S HOT?

DRIVERS UNEASY ABOUT SHARING ROADS WITH AUTONOMOUS CARS

by Alan Feldberg



Nearly two thirds of drivers are concerned about sharing the road with autonomous cars, according to new research.

The Automated Vehicles Act in the UK was passed into law in May last year, with trials expected to start taking place next year.

However, 64% of motorists questioned in November's Startline Used Car Tracker said they would be cautious around self-driving cars, with 28% believing the technology should not be tested on public highways, 27% suggesting they will make driving less safe, and 11% expecting them to behave erratically.

However, 41% are curious about self-driving vehicles, 39% plan to drive normally around them, 21% expecting get used to them quickly and 15% believing they will make roads safer.

Public trials

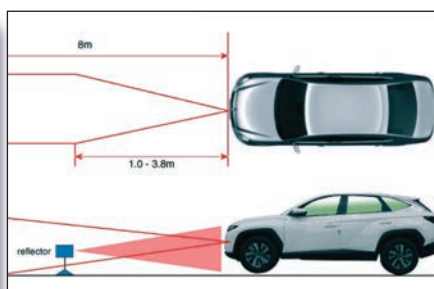
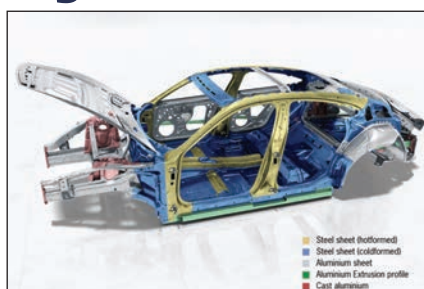
Paul Burgess, CEO at Startline Motor Finance, said: "There has been news of autonomous vehicles in the press for some years that has prompted a great deal of public interest but the situation will get real with tests starting on our roads next year.

"Findings show there is a high degree of nervousness around their arrival, which is

very much understandable; suddenly finding yourself sharing a road with a vehicle that has no driver will be a new and unnerving experience for most motorists. Responding to that situation by driving more cautiously is a very human response.

"However, there is also much curiosity and notably, around four in 10 plan to drive around autonomous vehicles in exactly the same way as they would any other; and one in five believe they will get used to them quickly. A significant minority have an open mind about this kind of technology."

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WHAT'S HOT?

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If you're looking for a strong, effective, yet cost efficient means to perfectly finish painted and polished surfaces, look no further than Tork Craft. Southern Africa's favourite tool brand has just unleashed their new second generation 1 500 W constant speed polisher to not just finish any job in exceptional style, but Tork Craft also supplies every necessary component to run the tool, and every possible polishing accessory you'd ever need, too.

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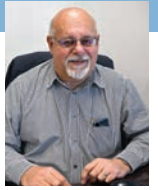
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MANY FORCES DISRUPTING BODY SHOP REPAIR



Steve Kessell
CRA, Operations Director

It's been a slow start to the new year in the local body shop industry as the nation takes even longer to shake off the summer holiday downtime in South Africa.

Having said that, as a new year, we find a number of our insurance work providers sending out their customary service level agreements documents which often need express reply and agreement, with even more conditions attached to them. Bound up in these proposed conditions is a measly average 3.5% rate increase which is woefully short of what's actually required in our real world.

There is still the unexplained enigma of why additional allowances for processes such as jig hire and set-up, wheel alignment, etc and other required processes are not being paid for. Current market rates or inclusion of new activities required such as ADAS device calibration and pre-scan, now necessary to restore vehicles to full operation and to manufacturers pre-accident condition, are also not included. These activities are labour intensive and subject to equipment and licencing that constantly increase in price – the compounded effect is the lack of inflationary adjustments that are manifests as unsustainable remuneration to repairers.

Current shop visits and contact with members recently, has seen a huge change of authorised repair coming from recent market takeover by newly introduced Chinese/Indian manufactured vehicles. Only a couple of these new models on local roads carry adequate spares back-up and most importantly, repair method data. The distributors of these vehicles will be set to give up reputation

when these damaged units have no repair parts available. Excessive cost of replacement body panels may accelerate write-off levels on these vehicles due to very low pricing on purchase, which will also affect an insurer and body shop's reputation.

Not so long ago, we noted costing from one Chinese brand with a R98 000 price tag on two doors and a front fender panel supply. An almost out of the show room vehicle is becoming possibly uneconomical to repair. The situation may become ever more complex as on another repair with a rear side impact area strangely all the airbags deployed. The inflow to repair volume will over time increase volumes to less work opportunity due to reinstatement cost. Now introduce the complexity of electric and hybrid vehicle repair process times into the mix and it will also impact repair costs dramatically.

These vehicles also require around 30 metres of space to disarm the vehicle battery power to ensure a safe repair. Most body shops can't accommodate this in their repair facility which in short means that the required work is outsourced. Who takes responsibility for payment?

Thankfully our member's shops appear to be relatively busy right now buoyed up in some areas by hail damage and poor South African levels of road safety, as well as driver arrogance on the increased traffic flow to and from holiday destinations, and general day to day driving.

In summary this uptake may have negative outcomes with uneconomical to repair values. This work will then bypass a repair operation

and go straight to a total loss salvage auction – a factor which should raise a few eyebrows.

Several technology framework changes are ahead, which will deliver enormous changes in vehicle repair, paired with OEM design trends and major change to the type of repair work and the major change to workflow and skills on the body shop floor.

It seems it is going to be another complex year in body shop repair activity with slower overall growth despite growing vehicle new sales. Accident rates should be reducing because driver safety devices included in entry level models.

There will however be sales opportunity as the Chinese brands rewrite competitive dynamics through included features and pricing, however essential planning and skills upgrading will become key to ensure repair opportunity. Thankfully South Africa is firmly based in a global market where currently up to 60% or more new vehicle units will be produced with ICE propulsion, due to vast long-distance travel and lack of charging stations. This won't be changing that soon.

CRA annual conference

Our recent national conference was an eye opener and highlighted introduction to of these technology changes that are set to keep the disruption of collision repair at a fast-moving pace. Keep an eye out for information on our 2026 Conference. Members and other guests will be able to stay ahead of the game by learning more about what is on the horizon and be given support to help with future business security.





REVIEW

HANDLING MATERIALS

While so much of the development of modern vehicles is software-related, the changing nature of the hardware involved can sometimes be overlooked.

It's been decades since cars were made predominantly of steel, and these days repairers can expect to see aluminium, carbon fibre and even plastics coming through their workshops.

Lightweighting is a key driver of this shift as heavy electric vehicles continue to flood the market, along with the safety benefits of using stronger materials to protect occupants.

At the coalface of this evolution is EV Bodyshops, which was established in 2021 by Adam Thurman. A qualified panel technician, he has witnessed first-hand the changing nature of car construction.

Thurman said: "Manufacturers have learned that the car doesn't have to be heavy to be very strong. There is more aluminium and carbon in vehicles now, as well as pure alloys. But there is also a lot of mixed materials, so you'll have steel and aluminium structure."

Different approach

Each requires a different repair approach, and Thurman says there are two critical aspects to repairing these vehicles - understanding the product and ensuring there are methods available.

He explains: "At EV Bodyshops, part of our initial risk assessment is establishing if we have repair methods. If we don't have the methods, we won't fix it. People say you can write your own methods, but if you don't know what you're dealing with then it's not safe and I won't take that risk. I'm a big believer that if the vehicle manufacturer built the car, then it knows how it wants it put back together again."

Apart from ensuring the safety of the technician during the repair, and satisfying customer expectations, another reason for following correct methods when handling modern vehicles is making sure they perform if they're in another accident. Thurman said that one of his biggest concerns is one that is easy to ignore: over-strengthening the vehicle.

He explained: "Different materials demand different bonding techniques and materials. If someone repairs the car in its crumple zone and over-strengthens that area, then that area is just going to go into the cabin if there's an accident because it hasn't got anywhere to compress. For me, that's my biggest worry - that the car doesn't perform correctly in an accident."

Investment

Keeping pace with this progress requires regular investment. EV Bodyshops used ultrasound kits to test carbon for structural cracks as many are invisible, and it has recently followed vehicle manufacturer guidelines around the introduction of Glue Pull Repair (GPR) technology.

This is particularly effective when repairing aluminium panels.

Thurman said: "We have the latest welding equipment but were really struggling with aluminium repairs. We introduced GPR and it's made a massive difference to how we repair cars. You have different types of glue for different operations so it's about following the manufacturer's guidelines again, but often it's better to repair than replace it, especially on aluminium when you've got to bond and rivet it and you can see the joins. Glue helps you do that."

Another advantage of GPR is that it doesn't require heat to be applied to the car, which can impact software and increase fire risks. It also enables the vehicle to stay online for more the repair meaning it is less likely to miss over-the-air updates.

Thurman said: "But you've only got one go with it, I can tell you that. You don't want to start having glue everywhere. It's strong stuff. The strength of the glue is unbelievable. Aircrafts are built with it, aren't they?"

Future

Going forward, he said he expects the next major shift to be the introduction of more plastics in car construction.

He said: "I think there'll be more and more different materials used as time goes on. There's certainly a lot more plastic composite within front panels these days. It's easier to produce and a lot cheaper to stock because you don't need a controlled environment. There is also a lot of good stuff going on around recycling plastics."

"Obviously, with plastics it means there are some things you can't repair - if an end has snapped off, for example, while if it was made from metal it might have just bent and you could pull it back - but I definitely think we'll continue to see more plastics in car construction."

He concluded by saying that cars are advancing really fast and that if you want to repair these types of cars, you need to commit to it. You cannot outsource everything you do.

HOW TO HANDLE MODERN MATERIALS

- Understanding the product is massively important. If you do an estimate, read that methods while you're doing it - and if haven't got a method - don't fix the car.
- Spend some time learning about the new materials and how different bonding techniques and solutions work with them.
- Modern cars are different so invest in the right equipment and tooling you need to fix them. Don't be a have-a-go hero.

WHAT'S HOT?

THE AUTOMOTIVE INDUSTRY NEEDS TO PREPARE FOR CHANGE

by Tristan Wiggill



South African futurist Graeme Codrington has given the automotive sector a stark reminder: industries can vanish faster than anyone expects.

Speaking at the 30th annual SAVRALA Manufacturer of the Year Awards, his message was clear: the motor industry must prepare for deep structural change, not simply optimise what already exists.

Codrington opened his address with a striking visual comparison. In 1904, New York's Broadway Street was filled with horses and carriages. "Any of you who know horses will know that this picture has a smell," he quipped, describing the reality of urban transport at the time.

Just 10 years later, after Henry Ford perfected the continuous production line and began producing Model T every 32 seconds, the same street was dominated by motor cars.

"Imagine being in the horse industry awards of 1911, congratulating themselves on 300 years of history and collaboration, innovation and excellent and they didn't know how close they were to literally being wiped out. Nothing could be done to that industry to avoid that change," he said.

By referencing Ford's famous quote: "Had I inquired as to what people wanted, they would have said that they wanted faster horses." Codrington drew a historical parallel that served as both a warning and an illustration of the danger of incremental thinking.

"If I ask any of you what you want, is it just to do better at what you already do? To do everything you do but do it cheaper, better, faster for more people? Because that's a faster horse's mindset. And that's fine if we still need horses, but if the world is at a moment of deep structural change, the industry must look beyond mere improvements."

Codrington argues that we are living through such a moment now, comparable to the transformation experienced 120 years ago. The early 1900s saw not just mass production of motor cars, but also electrification, the invention of flight and women gaining the vote.

"There's technology change, there's political change, there's societal changes," he noted. Multiple forces are converging today as well: climate catastrophe, demographic shifts, geopolitical upheaval and technological advancement.

He pointed to alarming data on climate-related insurance events, where an insurable climate catastrophe was defined as an event causing damage of a billion dollars or more.

"Up to five years ago, a billion-dollar event happened about once a year for the insurance industry," he noted. "For the last three years, it has been happening on average once every 18 days. There are insurance companies beginning to say to people, 'We can no longer insure your property, your premises. What happens if we can't insure cars for climate catastrophe, for rain or hail or things like that?'"

Codrington used the concept of the hockey stick graph to illustrate these changes: a pattern that follows predictable ups and downs for years before suddenly experiencing exponential growth. This applies not just to climate data, where "23 of the hottest months in human history have happened in the last three years," but to multiple aspects of modern life.

For the automotive sector, climate change means rethinking entire systems, not just replacing petrol engines with alternative fuels. "It isn't just about replacing the vehicles with something that's more sustainable. It's about the rethinking of the whole system. It's the thinking of what a walkable city would look like," said Codrington.

Whilst acknowledging this won't happen in 2026 even the 2030s, he challenged the industry to consider whether they're thinking about faster horses or cities without cars.

Demographics present another challenge. Throughout 10 000 years of recorded human history, the average human lifespan was 52 years. "We are the first generation in human history where 80 feels young," Codrington observed. More importantly, "we are not going to be older longer, we are going to be younger longer."

This has direct implications for the automotive industry. When an 85-year-old walks into a showroom, they may not be "a young, frisky, happy customer." Not someone to dismiss. Codrington recalled working with the industry nearly 20 years ago to help adjust sales approaches when women began purchasing vehicles independently. Now, another demographic shift is required.

Meanwhile, younger generations view cars differently, no longer seeing them as status symbols. "They do not rush to get their driver's licences anymore. They've got plenty

of options like Ubers and everything else," says Codrington.

This presents opportunities for the rental market, though he acknowledged that security concerns in South Africa complicate some international models.

Geopolitical instability adds further uncertainty. Codrington contrasted maps of Africa from 2004 and 2024, illustrating how China has replaced the United States as the dominant trading partner for most African countries.

He gave qualified credit to current American leadership for disrupting the status quo. "One of the things you shouldn't do in a time of deep disruptive change is waited to be disrupted. You must disrupt yourself."

However, he emphasised that "America is only one of the 200 plus nations in the world" and South Africa must diversify. We, as South Africans, are good at doing this. We are good at saying, oh, that's not working. I'm going to try something else – we are the champs at pivoting and changing."

Drawing on a motorsport analogy, Codrington involved Ayrton Senna's dominance in wet conditions. In sunshine Formula One drivers are separated by hundredths of seconds. In the rain, Senna was untouchable.

"Like Senna, you can overtake all the competition when times are tough. You might be sitting here wishing that the times were easy. I doubt it, because you're South African. Bring on the rain. That's when we will go, because that's who we are," he said.

His three takeaways were direct: first, go beyond optimisation. Second, adopt a growth mindset and look for opportunities within crises. Third, maintain a future focus and be prepared to create that future rather than simply predict it.

Codrington's final point emphasised collaboration. "Nobody's getting through this moment alone. To be able to anticipate the future and then prepare for whatever might happen, we're going to have to have partners and friends and collaborations," he said.

The message for the automotive industry is sobering but ultimately hopeful: disruption is inevitable, but those who embrace change, seek opportunities and work together will do more than just survive.

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TOP SHOP

DURBAN SOUTH PANEL AND PAINT EXPAND TO MEET DEMAND

With more than 35 OEM approvals, customers have peace of mind that their vehicle is in good hands.

Durban South Panel and Paint has grown steadily over the past 25 years to become one of the most trusted vehicle body repair businesses in KwaZulu-Natal. From the beginning, the focus has always been on good-quality work and looking after customer's needs. As cars have become more advanced and customers expect faster and better service, the business has continued to improve how it operates.

To keep up with growing demand and to maintain high standards, Durban South Panel and Paint has recently expanded its operations. Part of this expansion includes investing in new technology that helps improve the quality of paintwork and speeds up the repair process. The company partnered with Celette South Africa to install a modern Celette Vortex RGI spraybooth. This new spraybooth allows the business to repair and paint more vehicles each month while still delivering the high-quality finishes customers expect. On average, the company repairs around 250 vehicles per month, and the new equipment helps manage this workload more efficiently.

Most of the company's work comes from insurance claims, along with fleet and private vehicle repairs. Over the years, Durban South Panel and Paint has earned more than 35 approvals from vehicle manufacturers (OEMs). These approvals mean the business meets very strict standards set by manufacturers for repair quality and repair methods. One of the company's biggest achievements was becoming the first Toyota Approved body repair shop in KwaZulu-Natal, highlighting its commitment to quality and professionalism.

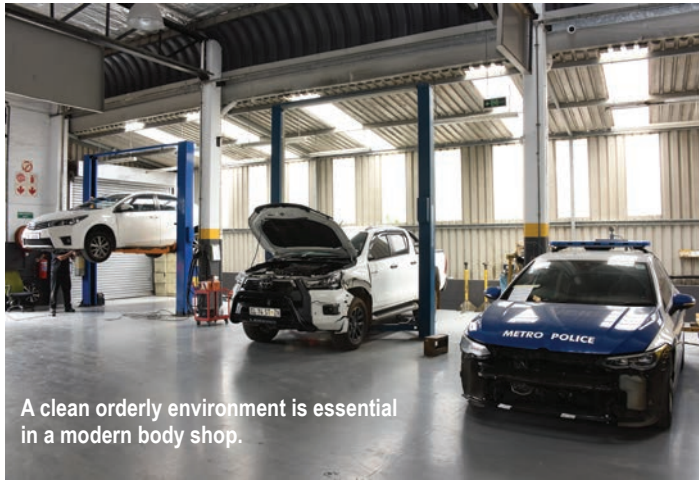
Durban South Panel and Paint offers a complete repair solution, making the process easier for customers. Services include accident repairs, towing, vehicle transportation, secure storage, and vehicle salvaging. The business employs around 50

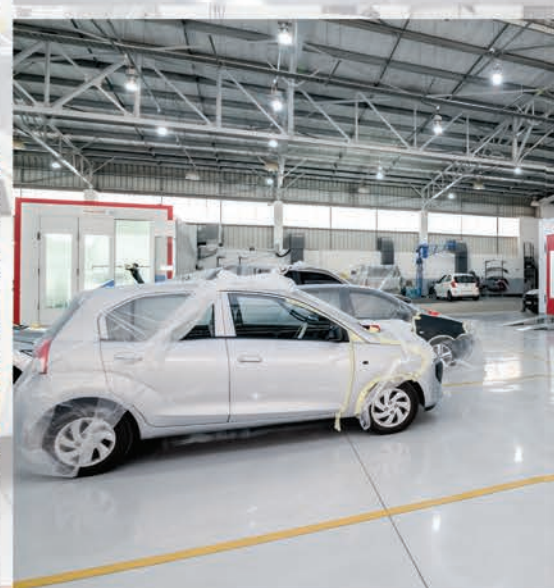
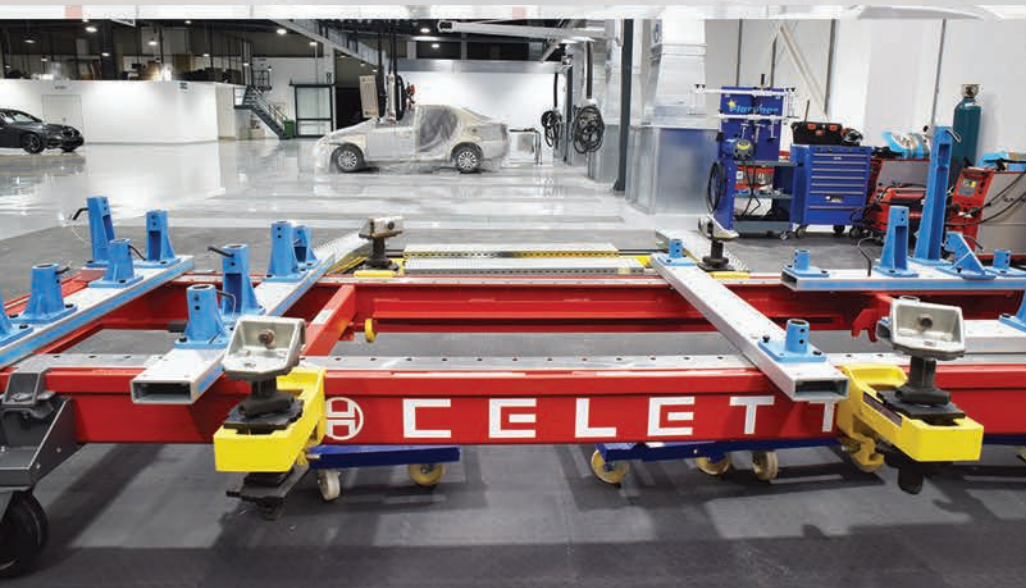
skilled staff members and works closely with reliable suppliers. Strong internal systems set by the owner Mark Kruger, with his passionate and knowledgeable leadership has seen the company grow from strength to strength over the years ensuring work and repairs are done quickly and smoothly, reducing delays and stress for customers.

The newly installed Vortex RGI features powerful thermal ventilating units that ensure uniform airflow from the diesel Riello combustion system throughout the entire cabin, a critical factor in achieving flawless paint finishes. Its full-size structure, measuring 7 110 x 3 600 metres, incorporates galvanised floor grates that enhance heat insulation and operational efficiency. The Celette Vortex booth is offered in both diesel and LPG gas heat exchanger options.

The spraybooth's construction includes 50 mm double galvanised panels filled with EPS insulation, ensuring durability and optimal temperature control. Bi-folding front doors with observation windows, a full-size operator's side door, high-intensity lighting delivering 800 Lux with LED colour-matching technology, and EU5 fine ceiling filtration all contribute to a controlled and precise painting environment. An automated temperature and pressure control system, managed through a digital touchscreen display with service interval notifications, powers the 16 kW Vortex design, further enhancing productivity and finish quality.

This expansion reflects Durban South Panel and Paint's simple business philosophy: focus on what you do best and do it well. Under Kruger's leadership the business has grown and evolved into one of Durban's A grade repair centres, by investing in people, technology, and strong partnerships, the company continues to deliver quality repairs, excellent service, and peace of mind to every customer.





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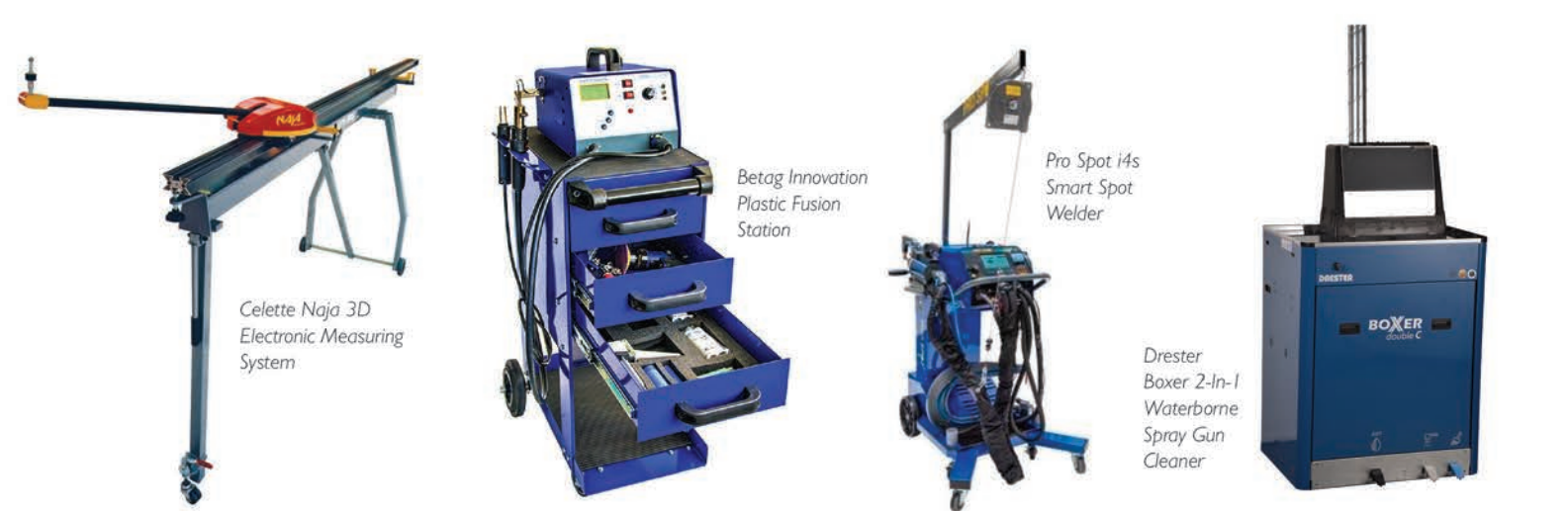
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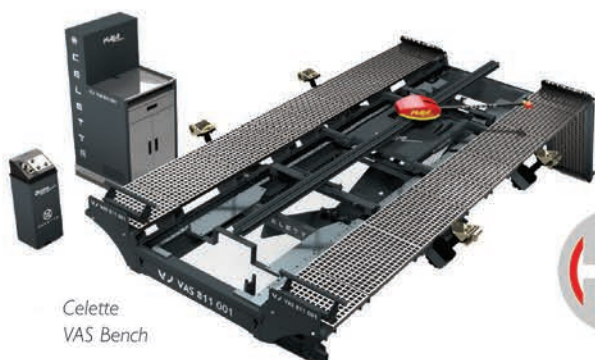
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PARTNERSHIPS

BASF GLASURIT JOINS FORCES WITH SVR TOYOTA GAZOO RACING IN NEW TECHNICAL PARTNERSHIP



BASF's premium automotive refinish brand, Glasurit, has announced a groundbreaking Technical Partnership with SVR Toyota Gazoo Racing, reinforcing both organisations' commitment to innovation, performance, and world-class vehicle finishing.

The agreement was formalised during a strategic meeting at SVR's cutting-edge headquarters in Kyalami. Initially approached as a potential supplier, BASF's collaboration with SVR evolved into a deeper alliance aimed at delivering exceptional paint quality, durability, and finish for high-performance rally vehicles.

Driving innovation in motorsport

This partnership aligns Glasurit's advanced coatings technology with the demanding world of rally racing – a sport synonymous with speed, endurance, and resilience. Together, BASF and SVR Toyota Gazoo Racing will set new standards in automotive refinishing excellence.

Under the agreement, BASF will provide:

- A full portfolio of Glasurit premium paint products
- Refinishing equipment and colour-matching systems
- On-site technical expertise and training for SVR personnel.

These resources will ensure superior visual identity and protection under extreme racing conditions. Glasurit technicians will also deliver continuous training to optimise application quality.

Amplifying brand presence

SVR Toyota Gazoo Racing will showcase BASF's innovation through branding opportunities at rally events, social media

campaigns, and behind-the-scenes content highlighting paint technology in action – from custom finishes to durability testing.

Both organisations will invest in digital storytelling, offering fans an inside look at the science behind premium vehicle finishes and the rigorous environments they endure. The partnership also opens doors for product testing, R&D insights, and long-term technical development.

Executive statement

"BASF Coatings Services is incredibly proud to support this partnership, which brings together world-class paint technology and the high-performance world of motorsport," said Wicus van Wyk, Managing Director, BASF Coatings Services. "Seeing Glasurit's innovation showcased on a platform as dynamic and respected as Toyota Gazoo Racing is a tremendous opportunity."

Customer engagement opportunities

Beyond racing performance, BASF will offer exclusive hospitality experiences at select events for suppliers and clients across its five key regions – Pretoria, Johannesburg, Port Elizabeth, Cape Town, and Durban – strengthening relationships and creating unique brand engagement opportunities.

Dakar summary

This year's Dakar event proved to be one of the most demanding in recent memory, with crews contending with relentless rocky terrain, deep dune systems, complex navigation and two gruelling Marathon stages.

All three TGRSA GR Hilux crews reached the finish, underlining both the endurance of the cars and the determination of the team, while consistently demonstrating competitive pace throughout the two-week rally.



Glasurit is able to deliver exceptional paint quality, durability, and finish for SVR Toyota Gazoo's Racing models.

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Ford has expanded its commercial range with the latest Transit Van 350 LWB, a vehicle designed for businesses that need a dependable and versatile delivery vehicle. Long known for its tough and reliable vans, Ford has taken things up a level with a model that offers more space, smarter technology, and better efficiency – perfect for companies that want to speed up operations and cut costs.

One of the biggest selling points is its impressive 13m³ loading space, which can take up to four Euro pallets with ease. With a 3 200 mm load floor and a payload capacity of 1 325 kg, companies can move more goods per trip and significantly reduce the number of journeys needed in a day – saving time, fuel, and labour.

The van makes loading and unloading simple thanks to wide-opening rear barn doors and a side door for easy access. For delivery teams that are constantly in and out of the vehicle, the optional Delivery Assist Package adds keyless entry and a close-assist function, making every stop faster and more convenient.

Inside the cargo area, Ford has fitted a durable floor liner and 10 tie-down hooks to keep goods secure. Bright interior lighting ensures drivers can work safely even at night or in dim warehouses. For businesses that run power-heavy equipment, heavy-duty batteries can be added.

Under the bonnet is a 2.0-litre EcoBlue diesel engine offering 121kW and 390Nm of torque, giving the van plenty of strength even when fully loaded. Power is delivered through its eight-speed

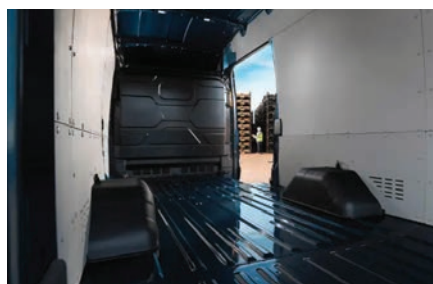
automatic gearbox which makes driving effortless, while multiple drive modes (Normal, Eco, Tow/Haul, and Slippery) allow the van to adapt to any road condition. The Auto Stop/Start system helps save fuel in heavy traffic, cutting running costs over time.

With a large 12-inch touchscreen and Ford's SYNC 4 system, drivers get modern, easy-to-use tech including wireless Apple CarPlay and Android Auto. Fleet managers will appreciate the built-in 5G modem, which enables remote functions such as vehicle tracking, remote lock/unlock, vehicle health checks, and remote start via the FordPass app. This helps businesses monitor their fleets, reduce downtime and plan maintenance more effectively.

A strong list of safety features comes standard, including stability control, traction control, hill start assist, ABS, rollover mitigation and tyre pressure monitoring. For even more protection, an optional package adds collision mitigation, adaptive cruise control, blind spot monitoring, lane assist, a 360 degree camera and more – ideal for busy urban deliveries.

With its combination of space, smart features, strong performance, and advanced safety, the new Ford Transit Van 350 LWB is designed to help businesses deliver faster, work smarter, and operate more efficiently every day.

Starting Price: R1 million (inclusive of VAT). Included: 6-year/90 000km Ford Optional Service Plan, 4-year/120 000km warranty, and four-year unlimited distance Roadside Assistance.



DRIVEN FORD'S TRANSIT VAN 350 LWB



WHAT'S HOT?

TUNISIA'S SOLAR POWERED COMPACT CAR

by Neill Lewis



Africa's electric vehicle (EV) market is accelerating rapidly – projected to reach \$4.2 billion by 2030, more than double its current value, according to market research firm Mordor Intelligence. Yet most EVs still depend on grid electricity, which often comes from a mix of renewable and fossil fuel sources.

Bako Motors, a Tunisian startup, is looking to jump on the EV trend, while tapping into one of Africa's greatest natural resources – sunshine. Its compact cars and cargo vans have solar panels on their roofs. While the vehicles still have lithium batteries and can be plugged in and charged at home or on the road, the solar panels give them access to a free energy source, charging the batteries directly. So far, the company has made just 100 vehicles, but it plans to scale up and increase exports over the coming year.

"The solar cells provide us with more than 50% of our needs," says Boubaker Siala, founder and CEO of Bako Motors. "For example, the B-Van, for commercial use, you can have free energy for about 50 kilometres (31 miles) per day... 17 000 kilometres (10 563 miles) per year. It's huge."

The company, founded in 2021, began making three-wheeled cargo vehicles, but has since moved on to four-wheeled models. The B-Van, which can carry 400 kilograms of cargo and has a 100 to 300-kilometre range, is designed for logistics and last-mile delivery, with prices starting at 24 990 Tunisian dinar (\$8 500).

The other is the Bee, a tiny two-seater car with a 70 to 120-kilometre range and a max speed of 45 kilometres per hour. It's tailored toward daily, in-city trips and starts at 18 264 Tunisian dinar (\$6 200).

Khaled Habaieb, COO of Bako Motors, tells CNN it is also designing a third model, the X-Van, which will fit two passengers and have a larger cargo area.

He says that more than 40% of the parts of each vehicle are sourced locally, including the lithium-iron-phosphate batteries and steel. "This helps to provide much-needed local jobs," Habaieb adds.

Scaling up

Globally, startups like US-based Aptera Motors are developing cars

with solar panels. Their coverage is more extensive and offers bigger ranges, but they are also a lot more expensive, costing from around \$30 000. Bako Motors is looking to fill a gap in the African market, while maintaining affordability.

More established players in Africa's conventional e-mobility market include BasiGo, with its fleet of hundreds of e-buses operating in Kenya and Rwanda, and Spiro, one of the leading providers of electric motorbikes, supplying seven African countries, but Bako Motors is distinctive in its use of solar.

"It's a really good concept because it helps to extend the range of your EV," says Bob Wesonga, operations and research associate for Africa E-Mobility Alliance, a think tank. "Among the biggest inhibitors of EV adoption has been range anxiety. If you can tell a person that while the battery itself will give you 250 kilometres of full charge, solar can extend that by another 50, it gives them the confidence to choose EV."

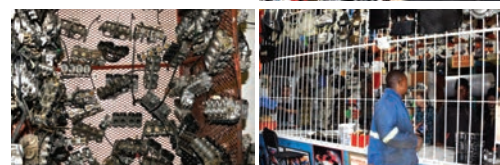
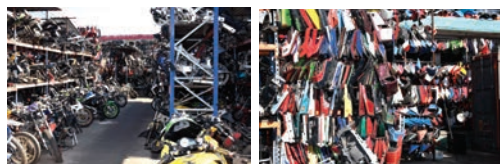
He adds that the trends in e-mobility in Africa are localised. "Different African countries have different modes of transport," he says, citing how in South Africa, four-wheel passenger vehicles lead, whereas in Kenya, motorbikes are king. This means that there is room in the market for many players, especially if local manufacturing allows companies to tackle local infrastructure problems such as road quality with their designs. By building locally, "the vehicles are suiting the mobility needs of the Continent," he says, as well as boosting the economy and creating jobs.

Currently Bako Motors is small, but it recently started building a second, larger factory in Tunisia, expected to open toward the end of 2026, and aims to manufacture up to 8 000 vehicles per year for Africa, the Middle East and Europe.

"The addressable market in Africa is about one million vehicles per year," says Siala. "We are targeting maybe five to 10% of this market."

He adds that the next five to 10 years will be the peak of the electric mobility transition: "We have to prepare ourselves for this transition (and) offer affordable and good products for the African citizen."

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TALKING INSURANCE

INSURERS TOTAL-LOSSING VEHICLES THAT SHOULD BE REPAIRED



Tim Kelly
Motor Claim Guru

Last year at the Automechanika Birmingham, Tim Kelly was a keynote speaker and addressed treating customers fairly in vehicle collision damage. He is an independent industry expert for all sides in the body shop aspect of repair.

Kelly has repeatedly said that it is annoying when insurance companies total-loss cars that are repairable; in fact, it infuriates him even more when the customer wants their car repaired and the insurer ignores them. He says this issue is what he is confronted with more than any other issues.

The huge increase in claims being dealt with on a total-loss basis has significantly increased over the last five years, and it is a dangerous trend that needs to stop.

What is total loss?

Firstly, we need to use the correct terminology. The common phrase used is 'write-off', but that is incorrect.

The term 'write-off' is an insurance term. The significance of this term is that when you create an insurance policy, you write into the policy that items must be underwritten with a guarantee of indemnity.

The underwriter writes the name of the company accepting the risk under the item that requires insuring: this policy is 'underwritten' by 'insurer's name'.

When a claim is made and the item declared a total loss, then it is written off out of the book of underwriting – or written off.

However, total loss has a different meaning. It related to the asset that is insured means that the cost of repairing it exceeds the market value, so the cost of repair 'in totality' is beyond the level of indemnity.

This is compared to a partial loss, which means the cost of the repair is less than the market value and can be indemnified at the cost of repair.

Indemnification in motor insurance

Insurance has its own field of law, doctrines, requirements and

principles. A fundamental principle of insurance is the 'provision of indemnity'. In case law, this means that "as far as money can do, the claimant should be placed in the same financial situation they enjoyed prior to the loss occurring and not be in a better or worse position."

Contrary to what a motor insurer will have you believe, motor insurance has nothing to do with repairing cars. The specific role of the insurer is to pay monies to compensate the loss that has occurred, not pay for repairs. In fact, you do not even need to have the vehicle repaired, you should still be paid the full cost of repair inclusive of the VAT element.

The insurance contract

The standard wording of most if not all motor insurance contracts is that they 'promise to indemnify you up to the market value.' If it is not said it is certainly implied, as it is a fundamental requirement of insurance.

If it is not, it needs to be specified in the contract.

An insurer cannot then limit their liability to less than the market value as it would be a breach of contract and a breach of the legal doctrine of Estoppel. If it is not in the contract, it is not enforceable, and if it is in the contract, then it is an unfair term and not a legal contract.

A vehicle is only ever a total loss when the repair cost exceeds the market value. When a repair costs less than the market value the policyholder still owns the vehicle, and the insurer has no legal rights over it.

As such, they cannot deduct a sum of money for salvage.

As they indemnify up to the market value for the loss that has occurred, the vehicle owner is fully entitled to the full cost of the repair to be paid. Should they wish to have a claim dealt with as a 'constructive total loss.' That is their choice, not the insurers.

Repairers repair vehicles – educate your customers.



Tim Kelly is an independent industry expert who assists in all areas of body shop repair to fight on behalf of vehicle owners who have been treated unfairly by vehicle insurance companies. Seen here at the Automechanika Birmingham last year.

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WHAT'S HOT?

STUDY FINDS SOME ADAS WARNING SYSTEMS INVOKE BAD DRIVING BEHAVIOUR

by Tim Kelly

Some ADAS warning systems could be worsening driver behaviour, according to a new study from the University of Texas in Austin.

Ashish Agarwal, associate professor of information, risk and operations management at the university's McCombs School of Business, said automakers could reduce risky driving behaviours by knowing how humans react to different kinds of warning signals.

At the request of an unnamed vehicle manufacturer, Agarwal worked with Cenying Yang of the City University of Hong Kong and Prabhudev Konana of the University of Maryland to study how people reacted to driving features.

The study analysed data from the vehicle manufacturer for cars sold in 2018 and 2019, a release from the college says. Data collected from the onboard sensors included trips, speeds, and acceleration rates for 195 743 vehicles. Some of the vehicles had ADAS features, and some did not.

According to the release, the team's main question was: Do these systems affect the general driving behaviour of users over time, and, if so, how?

The team focused on hard braking and speeding rates, and how both coincided with blind spot detection and lane departure/forward collision warnings. "We compared cars with blind spot detection with the ones that don't have that to see how it influences speeding and hard braking behaviour," Agarwal says in the release.

The data showed that the two kinds of warning signals had opposite effects on driving behaviour:

Blind spot detection reduced the daily number of hard braking events by 6.76% and speeding events by 9.34%, compared to vehicles that didn't have the feature. However, lane departure/forward collision warning led to a 5.65% increase in hard braking and a 5.34% increase in speeding.

The research found that these effects were magnified over time

For each extra month that a driver used blind spot detection, they sped 0.40% less, while they sped 0.32% more for every added month that they used lane departure warning.

According to the release, the two safety features prompt different behaviours in line with a psychological concept called dual process theory.

The urgent warnings require a driver to correct course immediately, the release says. This causes System 1, or reactive thinking, which is automatic and unconscious. "It triggers risk compensation behaviour, which impedes your learning and makes your behaviour worse," Agarwal says in the release.

Blind spot detection does not demand an instant reaction, the release says. It allows time for deliberation, or System 2 thinking.

Agarwal says in the release that automakers should consider these findings as they design next-generation ADAS features. "For example, a car could repeat a warning signal after a lane departure as well as during," the release says. "That might encourage System 2 thinking, helping a driver reconsider their risky behaviour."

Agarwal says that for learning to take place, a user needs to be in System 2 mode. "That means that you learn, and your behaviour improves over time," he said.

TRAINING

RETHINKING
APPRENTICESHIPS

For years, body shop owners and training managers have spoken about the technician shortage, but the challenge is no longer simply about numbers. It is about how effectively the industry can prepare, support, and retain the people it does manage to attract.

The traditional apprenticeship model is slow, linear, and dependent on a single experienced mentor or on-site training is increasingly mismatched with the expectations of a generation raised on instant information, digital tools, and collaborative learning environments.

The reality on the ground makes change even more pressing. Managers must juggle apprentice development alongside the daily demands of production. Repair methods evolve faster than ever, and customers expect both quality and speed. Training that pulls apprentices away for extended off-site sessions or ties them exclusively to a single mentor is no longer sustainable.

What is needed is an approach that blends flexibility, layered mentorship and technology in a way that keeps apprentices productive while they learn.

The concept of “earn and learn” has become central to this shift. Apprentices can be introduced to small but meaningful tasks from the beginning, contributing to body shop output while building confidence and skills. Linking progress to tangible rewards, whether financial incentives or recognition, reinforces the connection between learning and professional growth.

This balance allows body shops to offset training costs while apprentices feel valued as members of the team, not just learners waiting to become useful.

Resilient

Equally important is moving beyond the sole or multi-tech training model. When training is anchored in the availability of a single or multi-seasoned technician, it can collapse under production pressures.

A more resilient structure draws on both experienced professionals and younger peers who have recently excelled in their own apprenticeships.

These high achievers offer relatability and fresh insight, while senior mentors focus on complex skills and quality assurance. Together, they create a system where apprentices are supported from multiple angles and where trainers are not stretched beyond capacity.

Technology has opened a wide new lane for apprenticeship delivery. Remote town hall sessions connect groups of apprentices with expert trainers across locations, creating a sense of shared learning while reducing downtime.

Tablets and mobile devices bring OEM procedures and digital guides directly into the bay, giving apprentices on-demand access to the information they need as they work. Wearable tools such as smart glasses can stream live views from an apprentice to a trainer, allowing real-time guidance from across the shop or even from another city. This brings training into the natural flow of work instead of pulling apprentices away from it.

Guidance

Digital capture is proving just as transformative. By documenting

repairs through photos and video, apprentices build a visual record of their progress that can be reviewed for feedback, benchmarking, and formal assessment.

This not only strengthens the learning process but also creates a portfolio of evidence that can support career development and recognition.

Looking further ahead, artificial intelligence promises to extend the reach of trainers even more. AI systems could identify parts and repair scenarios, delivering step-by-step guidance in context. They could review captured repair data against OEM specifications and highlight errors or improvements. Over time, they could tailor individual learning plans based on an apprentice's strengths and weaknesses, providing personalised support in a way no single mentor ever could. Rather than replacing human trainers, AI has the potential to amplify their impact and ensure apprentices are never without guidance.

This evolution in training is not just about attracting new entrants, though it certainly helps. The way learning is delivered sends a message to potential recruits about the type of industry they are joining. A programme that embraces technology, collaboration, and clear career pathways signals innovation and investment in people. For a generation that values meaningful work and visible progress, this can be decisive in choosing a career in collision repair over other trades.

Retention is perhaps the strongest argument for change. Apprentices who feel supported, who receive timely feedback, and who can see a future for themselves are far more likely to stay.

The “earn and learn” model adds another dimension, showing apprentices that their contributions matter now, not just in the future. By recognising and rewarding progress along the way, businesses foster loyalty and help apprentices picture a long-term career within the organisation.

Transition

The transition to this new model will not happen overnight. It requires planning, investment, and a willingness to experiment. Shops must examine current practises, identify bottlenecks, and introduce scalable digital tools that can grow over time.

Mentors – both senior and peer – must be trained not just in technical excellence also in the use of new technology and in the softer skills of coaching. Piloting these methods with small groups, tracking outcomes, and refining approaches before scaling up can create a roadmap for broader adoption.

One fact is inescapable: the industry cannot prepare tomorrow's workforce using yesterday's methods. By layering mentorship, embedding technology into the workflow, and building “earn and learn” pathways that balance productivity with development, the collision repair industry can create training programmes that are more effective, more attractive, and more sustainable.

This is not simply a way to solve a labour shortage; it is an investment in the future of the trade. A workforce that is well-trained, supported, and inspired will not only meet today's

VOLKSWAGEN TIGUAN III CT & TAYRON II 1511 V1 SA



Windscreen CMOS camera
module – static and dynamic
calibration

Front bumper side
RADAR module x2

Front bumper
camera,
360 degree
view – static
calibration

Ultrasonic
sensors x6

Door mirror camera, 360
degree view, static calibration.

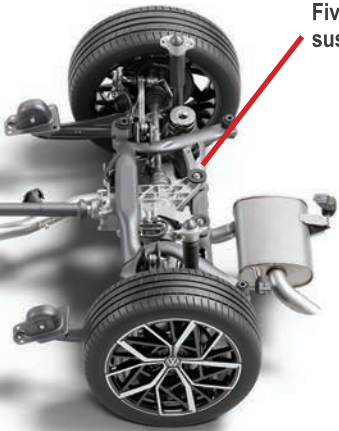


Adaptive damping with separate
bump and rebound control option
also available.



2l TDI EA288 Evo
engine produces
110 kW when
four-wheel drive
is specified, along
with a 140 kW 2l
TSI option.
The 1.4l TSI 110
kW engine only
drives the front
wheels.

All powertrains – front
wheel or four-wheel drive
- use a form of 7-speed
DSG transmission.



Five link rear
suspension.

Petrol fuel tank, located
under the rear / 2nd row
(not shown).

Note: The ADAS suite option is R20700, or
R35000 with the surround view option.



Reversing camera,
static calibration

Rear bumper RADAR
module – static
calibration

Ultrasonic sensors
x6

- The third generation of Tiguan, CTI, uses the MQB Evo platform, with 5 seats.
- The second generation of Tayron also uses MQB Evo platform, the first to be built in Europe, China and Mexico – fitted with 5 or 7 seats.
- Tayron has a 110mm longer wheel base and 105mm longer rear over hang than Tiguan III CTI.
- Available with petrol or diesel internal combustion engines.
- Tayron for South Africa does not have a four-wheel drive option.
- Internationally MHEV and PHEV powertrains are available.



Front strut tower and upper longitudinal, 420 MPa steel alloy.

A pillar reinforcement, 420 MPa steel alloy
Inner - 970 MPa hot pressed steel alloy.

Cant rail reinforcement and inner, 970 MPa hot pressed steel alloy

B pillar reinforcement and inner, 970 MPa hot pressed steel alloy.

No procedures for rear quarter inner panel or for the CD pillar.

Front chassis leg, 970 MPa steel alloy, section available.

Sill pillar reinforcement and inner, 970 MPa hot pressed steel alloy.

Rear chassis leg, 970 MPa hot pressed steel alloy.

Tayron II has longer wheelbase, longer rear overhang and revised inner quarter panel.



ADAS

SMILE FOR THE CAMERA

Most of us use the camera feature on our phones at some point. To the user, it is a simple device: just point and shoot. Many of us also remember when photos with cameras first became widely available. Looking back at the photos those early cameras produced, we soon realised that the quality of the cameras has improved greatly.

The quality of cameras used in vehicles today, featuring high definition and the ability to capture more vibrant colours, is a key factor in how they function in vehicles equipped with advanced driver-assistance systems (ADAS). This improved quality of picture is critical for occupant safety, as how clearly the vehicle 'sees' directly affects the performance of its safety systems.

As with your own phone, where the camera is aimed also makes a big difference to what it captures. People can take training and classes within the collision repair industry, there are guidelines on how to take clear, accurate photos of vehicle damage so that anyone reviewing them can fully understand the extent of the damage. Apply this same thought process to the multiple cameras fitted to modern vehicles, and it becomes easier to understand the critical role cameras play as part of the car's ADAS safety systems.

The whole system

The camera is only part of the system. The software that is used in the computer uses the captured images, produced by the camera, for safety system functioning. The clarity of the camera images provides computer algorithms, and this information is needed to identify and react to perceived danger. These reactions could be warnings in passive systems to steering and applying brakes in active systems, and without the clarity of the image, the algorithm may not see the perceived danger to provide necessary information to the driver or react as designed; or even give false alarms to the driver, confusing the driver who or who does not trust the system.

To give more context to the environment of each moment depending on year, make and model of vehicle, the sensor fusion between cameras and radars and lidar give the vehicle algorithm information on distance, vehicle speed, road conditions and operation of vehicle systems, such as brakes, steering wheel position, GPS and even vehicle-to-vehicle communication. The information the sensors provide must be clear because, as is the case with all computers, the phrase "garbage in, garbage out" applies.

It's no different than your eyes while driving. For those who wear glasses or contacts, or even those lucky to have good eyesight but are wearing dirty sunglasses, that visual impairment makes a big difference in how your brain reacts to its surroundings. With your own personal experience from driving a car, you see and compare all the same parameters, and the algorithm sees and reacts accordingly in your driving. The problem with humans, though, is that we get distracted. The vehicle, on the other hand, is ever vigilant.

Not perfect

Cameras are not perfect sensors; not one sensor is. Just like human eyes, they have limitations that affect what they see. We've all encountered construction when driving and wondered: where am I supposed to go to? Even though ADAS systems are amazing, in compromised situations, the driver must be aware of every aspect of his or her surroundings. When this occurs a "system disabled" warning may be displayed to the driver. In most situations, the system remains stable and operates correctly as long as all sensors are aimed and working correctly.

Some vehicle manufacturers use multiple cameras in the windscreen which provides a much better platform for the vehicle's algorithm to see road hazards and react more efficiently or effectively. This is why calibrations are necessary whenever a system or sensor such as a camera is moved. That movement can change the focal point of that camera and reduce the ability to see in full context what is needed for the vehicle to react. Where and how cameras, or any sensor for that matter, are aimed at changes the reaction time of the vehicle as well as braking or steering. That's everyday use of the system and operating parameters.

When calibrating camera systems, the environment for the calibration of a camera must meet specific conditions. This is a relearning process. During the calibration, very specific images are used in the algorithm and must be met to a specific percentage of clarity or perfection and in proper location in reference to the vehicle in that algorithm to be sure the camera is seeing correctly, or the calibration fails.

All of us at some point may have dropped our phones and picked them up. We then checked for a cracked screen, and if it's damaged, we know we have some repairs to do. Vehicle cameras aren't designed for severe shock damage, because they don't get dropped. Besides, while properly attached to the vehicle, the vehicle protects against most road shock due to the suspension, tyres and other features providing a smooth ride. Therefore, collision technicians who handle these cameras need to be aware of how much care should be involved.

With regard to forward-facing cameras in windscreens, there could be other sensors included in those cameras that may be negatively affected by mishandling. In some cases, while the vehicle engine may be off, the cameras may still be active, which may be a concern during a calibration process that takes too long and causes the camera to overheat. Rollover sensors may also be a concern in new vehicles.

Here are some best practises when handling forward-facing cameras that will help you avoid damaging them – and avoid costly replacement:

- Always conduct a pre-repair scan on a vehicle prior to doing any work. Cameras have been known to fail or have DTC's preventing

calibrations from being completed.

- Never let the camera hang from wires.
- When removing a camera from a windscreen, wear powder-free nitrile gloves and do not touch the lens. Lenses may have an anti-fog coating and will be damaged if touched, or if oil from your skin gets on them. Unless a specific service information procedure is available, do not clean the lens, as you will damage the coating.
- Store in a zip-lock bag to prevent dirt and other materials from damaging the lens.
- Store in a protected area to prevent from getting moved, dropped or damaged.
- Always keep the camera upright unless otherwise noted by service information.
- Be careful of heaters attached to cameras, as they break easily and may require initialisation and programming if replaced.
- Replace pads when required for 'replace and install'. Pads may be silicon-like gel pads designed to keep cameras stable and keep any moisture or debris from the viewing area.
- Install the camera verifying that all circuit board pad sensors are touching the glass where required.
- Be sure the camera is mounted correctly and tight when attaching back to the bracket.
- All connectors must be correctly fastened and double-checked before a calibration is attempted.
- Vehicle alignment must be in accordance with OEM specifications, as this may have an effect on camera aiming as well as the camera placement on the windscreen.

These are only a few considerations, you may have more. That all comes with experience and is different between year, make and model of vehicle. Even the type of lighting systems in a shop can create an issue with some cameras.

When you experience a failed calibration, grab a camera and take

a picture of what the vehicle camera sees. Look for background clutter, light glare, dirt, whatever would make it a bad picture. Correct those issues and try again. A large majority of calibration failures are due to technician error regarding the environment during calibration.

Vehicle cameras see and track images from the vehicle's computers. The system recognises signs, cars, people, bikes, trees, bushes, etc. along with identifying and classifying these images every millisecond and 'adjusts or disregards'.

Most of what I have been referring to applies to the forward-facing camera on the vehicle's windscreen, but surround-view and rearview cameras also have considerations. Although the handling may not be as critical, as most of these cameras are located outside of the occupant compartment and are subject to much more shock from everyday use, there are still service information guidelines relating to mounting and calibrations. This is where the lighting system in the shop may affect calibrations. As with all sensors, mounting them correctly is a critical step to be sure they're aimed correctly.

Summary

We can relate to cameras through the everyday use of our phones, and phone cameras have given us a feeling of simplicity in their operation and how they see. Technology has made the phone camera simple to use, even for a child.

As the future progresses and vehicle cameras gain even better resolution and become higher in pixels, there will still be requirements regarding aiming and calibrations after changing the mounting location. The new software algorithms and AI software being developed for use with these cameras will improve the operation of those safety systems in new vehicles arriving every day.

The need to correctly work with, and aiming these cameras or any sensor, will not change. We need to look at them not just as sensors, but as part of an entire system. We may not think a step or a procedure in the repair process matter, but it does.

WHAT'S HOT?

CARBON CREDENTIALS - AN ALTERNATIVE SOLUTION

by Simon Wait



While the Accident Repair Industry Environmental Standard (ARIES) has been getting all the headlines as the collision repair industry's new pathway to net zero, an alternative solution is emerging that could help repairers achieve their sustainability goals.

Carbon Credentials from Motornomic – the soon-to-be launched online marketplace for SMR garages and body shops – is billed as a “body shop specific approach that makes ISO 14068-1 certification straightforward.” ISO 14068-1:2023 is the new international standard for carbon neutrality. It replaces PAS 2060 which will be withdrawn at the end of 2025 and is no longer supported by the BSI.

Motornomic's digital-first platform aims to reduce operational costs and develop new revenue streams for independent body shops and garages. New members, who can sign up today for a free limited time deal, will have 'exclusive access to high-value work opportunities, collective purchasing power for parts and consumables, and a suite of intelligent business tools' when it goes live.

Leigh Tymms, co-founder of Motornomic, said: “The industry has been crying out for a digitised version of all of this. Rather than everything being consultant-led and very expensive and very time consuming, instead you are able to do it when you need to do it through a portal.

“We know of numerous examples where taking sustainability seriously can make a significant difference in the ability to secure fleet and insurance contracts. However, we recognise that certification can initially feel like unfamiliar territory and that's why, in collaboration with CBAM-UK, we've developed a solution specifically designed to assist garages with ISO 14068-1 certification or any related carbon neutrality standards.

“Everyone wants to boost sustainability, but we must be realistic that ROI is what ultimately drives business decisions to pursue these standards. Our approach has been built around giving more control back to garages, while improving both operational efficiency and financial returns.”

Motornomic has already achieved its first major success with the Carbon Credentials

programme. In June, QCD Revive Collision Centre in Brackley achieved ISO 14068-1 certification and is understood to be the first UK body shop to reach the new international standard.

Tymms believes: “We are immensely proud to have supported QCD in achieving this milestone. It not only highlights QCD's dedication to sustainability but also serves as an inspiration for others in the sector.”

QCD had been on the PAS 2060 pathway for more than two years and co-owner Reaz Jojunder said: “We had much of the information to hand, so with the tools provided by Motornomic, getting to ISO 14068 was relatively straightforward.

Tymms concluded: “We set out by having independent garages and body shops in mind first and foremost to champion them – if you like – and then we built everything from that mission and purpose. We've been able to do a lot of that by bottling some of the magic that Reaz and his brother, Rocky, built within QCD.”

PAINT TECHNIQUES

COLLISION REPAIR VERSUS CUSTOM REFINISHING TECHNIQUES

Both collision repair painting and custom refinishing demand excellence – just in different forms.

In the automotive world, few disciplines bridge the gap between traditional and artistry like custom painting. While collision repair painters work with precision to return vehicles to their original form, custom painters approach each surface as a canvas – layering colours, textures and effects to create something extraordinary.

From the complex environment of matching OEM finishes to the unpredictable dance of candy coats, metallics and chameleon pearls, the journey requires more than technical know-how – it demands vision, patience and an unrelenting eye for detail.

Custom vs non-custom colours

While there is substantial skill and knowledge crossover between OEM refinishing and custom work, custom colours are inherently more demanding to apply. This stems from their heightened sensitivity to spray technique, more complex layering systems and increased visual complexity, all of which require a different level of control and precision from the painter.

Challenges

The challenges in the auto painting world are numerous, while collision repair and custom painting share some core technical hurdles, the nature, tolerance and consequence of those challenges differ.

While both disciplines demand skill planning and product knowledge, collision repair painting requires consistency, speed and compliance with OEM and product maker requirements, while custom painting prioritises artistry, depth and absolute surface control. The margin for error is narrow in both – but the visual consequences of an error are often magnified in custom work.

Experience

Experience is a critical factor for any painter and one of the most critical factors when it comes to painting. In fact, I think most would agree that time spent practising, failing, refining techniques and mastering materials is what separates average results from award-winning finishes.

Proper prep

Proper prep work is critical in both collision repair and custom

painting, as both disciplines demand precision, cleanliness and attention to substrate quality. However, in custom applications, prep takes on an even greater level of importance, due to the sensitivity of finishes like candies, metallics, pearls, flakes, try-stage effects, airbrushed graphics and pin striping. These systems tend to amplify even the smallest surface irregularities – such as sanding halos, micro-scratches or inconsistent feather edges, which can distort flake orientation, compromise colour clarity or telegraph visibility through transparent layers.

While these concerns also apply in collision repair the tolerance for imperfection in custom work is far lower, meaning that minor flaws in prep can result in major flaws in the final finish.

Custom paint

The automotive refinish world encompasses a broad spectrum of finish types, and in many cases, the finish is more than just colour – it's about depth, dimension and visual presence. Whether the objective is to create subtle sophistication or bold, attention-grabbing effects, custom refinish work expands the palette of techniques and material system far beyond standard formulas. This includes finishes such as metallics, pearls, multi-stage systems, candies, flakes and colour-shifting (chameleon) effects. Each of these systems introduces specific requirements related to spray technique, substrate preparation, environmental control and post-application finishing – all of which demand a disciplined, detail-orientated approach from the refinisher.

Summary

Automotive painting sits at the crossroads of craftsmanship, chemistry and creativity, demanding a unique combination of technical precision, product knowledge and – in many cases – artistic sensibility. While collision refinishing focuses on accuracy, efficiency and restoration of OEM appearance, custom painting pushes into a different realm – where each finish is built to stand out, not blend in. From the controlled sparkle of metallics and pearls to the depth-driven complexity of candy colours and the layered illusion of custom graphics and airbrush work, it's a discipline where experience, preparation and consistency aren't just important – they are the foundation of success. In the collision booth, the goal is to restore what was lost; in the custom booth, it's to create something entirely new. Both demand excellence – just in different forms.

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Automechanika Dubai welcomed over 50 000 visitors from 162 countries. The importance of the African Continental Free Trade Area was highlighted to increase Africa's competitiveness in the global automotive aftermarket.

EXHIBITION

AUTOMECHANIKA DUBAI SHOW REPORT

Automechanika Dubai 2025, the largest international trade show for the automotive aftermarket industry in the Middle East and Africa, concluded late last year at Dubai World Trade Centre, following its most globally diverse and influential edition to date.

Welcoming 50 408 visitors from 162 countries, denoting a visitor increase of 6.4%, the record numbers reflect strong year-on-year growth, reinforcing Dubai's strategic role as a global gateway for the automotive aftermarket. The top visiting countries included Saudi Arabia, Iran, India, China, and Iraq.

With over 2 273 exhibitors representing 63 countries showcased across 20 halls, this year's edition highlighted the innovation, transformation, and commercial momentum shaping the future of mobility. In total, Automechanika Dubai welcomed 192 speakers, up from 120 last year; who delivered 102 sessions, underscoring the event's position as a leading knowledge platform.

The three-day event, officially opened by H.H. Sheikh Mansoor bin Mohammed bin Rashid Al Maktoum, the Dubai Ports and Borders Security Council, welcomed industry leaders, policymakers, OEMs, distributors, and innovators to explore the sector's most pressing opportunities and challenges. The exhibition hosted an expanded programme of conferences and technical sessions, including the Automechanika Academy, Innovation4Mobility, AfriConnections, Modern Workshop, Pitstop Challenge, LABX Conference, Fleet FWD, and Region Focus – Made in GCC.

H.E. Wamkele Mene, Secretary-General of the African Continental Free Trade Area (AfCFTA), underscored the importance of a borderless aftermarket economy and noted that, when fully integrated under the

AfCFTA, it will support thousands of SMEs, generate skilled jobs, and increase Africa's competitiveness in the global automotive aftermarket.

As part of the AfriConnections conference, Themba Khumalo, Principal Advisor to the Secretary General, AfCFTA, further underscored the body's transformative impact on reducing trade barriers and fostering an integrated market.

The milestone fifth edition of the Automechanika Dubai Awards also took place. It celebrated rising talent, women leaders, service excellence, and innovation shaping the region's automotive aftermarket, as well as global best practices and regional excellence across 15 categories. Retired Major General Mohammed Alzafeen Almuhairei received the Special Recognition Award, honouring his extraordinary contributions to road safety, accident reconstruction, and traffic engineering in the UAE.

Looking ahead, Automechanika Dubai

is preparing for a pivotal new chapter as it relocates to the Dubai Exhibition Centre (DEC) at Expo City in 2026. This strategic move reflects growing exhibitor and visitor demand and aligns with the ambitions of Dubai's D33 Agenda, which positions mobility as a key pillar of economic growth.

With exhibition capacity set to increase from 120 000 sqm to 180 000 sqm by 2031, DEC will enable further expansion of product sections, international pavilions, and next-generation mobility showcases, supported by modern, flexible architecture designed for seamless large-scale events.

In addition to the new venue, new dates, 10–12 November, further enhance long-term planning for global participants. The expanded capacity at DEC will support the continued growth of Automechanika Dubai's flagship knowledge and feature programmes, cementing its position as the region's definitive platform for aftermarket innovation, insight and industry advancement.

This year's Automechanika Dubai has new dates as well as a new location that will increase exhibition capacity.



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WHAT'S HOT?

TOP TIPS FOR IMPROVING THE EFFICIENCY OF YOUR BODY SHOP FROM SHERWIN-WILLIAMS®

Time is money in the body shop business. Whether it's a quick cosmetic fix or a complex structural repair, every minute counts and every mistake costs. But, with rising customer expectations and tightening margins, how can today's repairers stay ahead of the curve?

According to Paul Buckingham, Sales Director for North EMEA at Sherwin-Williams Automotive Finishes, the answer lies in working smarter, not harder. "Efficiency doesn't mean cutting corners, it means creating a process that runs like clockwork," he explains. And with the right strategies in place, even small improvements can lead to big gains.

Here, Buckingham reveals five practical tips to help body shops boost efficiency, reduce delays, and keep customers coming back.

Build better habits from the ground up

The most successful body shops are often the most disciplined. "It starts with setting clear goals and helping to make every business interaction a win-win," says Buckingham. Creating a culture of

consistency and communication within your team can help reduce errors, boost morale, and get everyone moving in the same direction.

Rethink your workshop layout

A tidy, well-organised space isn't just visually appealing, it's also better for productivity. Optimising the layout of your workshop can drastically improve workflow, reduce bottlenecks, and make each step of the repair process more efficient. Small changes in station placement or tool access can translate into big time savings.

Nail the assessment stage

"A well-planned job is a well-executed job," says Buckingham. Taking the time to get things right at the assessment stage can prevent costly rework down the line. Thorough inspections, clear documentation, and realistic timelines help make sure that everything goes smoothly once the tools come out.

Keep customers at the heart of the process

Customer satisfaction is more than just good service, it's the key to repeat business. Regular updates, transparent pricing, and a commitment to quality are all vital. By

focusing on the customer experience, body shops can build trust and long-term relationships that support sustained success.

Choose the right partner

When it comes to efficiency, the paint and coatings you use matter and so does your supplier. "Working with a manufacturer that understands your business can bring invaluable support," Buckingham adds. A strong partner will offer tailored solutions, product training, technical support, and innovations that keep your business moving forward.

Why Sherwin-Williams?

Sherwin-Williams doesn't just provide paint. It brings colour expertise, sustainability, and a commitment to partnership that helps body shops streamline operations and drive growth. From cutting-edge technologies to hands-on support, Sherwin-Williams works closely with repairers and distributors to deliver products and solutions that match the pace of modern automotive repair.

For more information on how Sherwin-Williams can help your body shop improve efficiency be sure to get in touch with our team.

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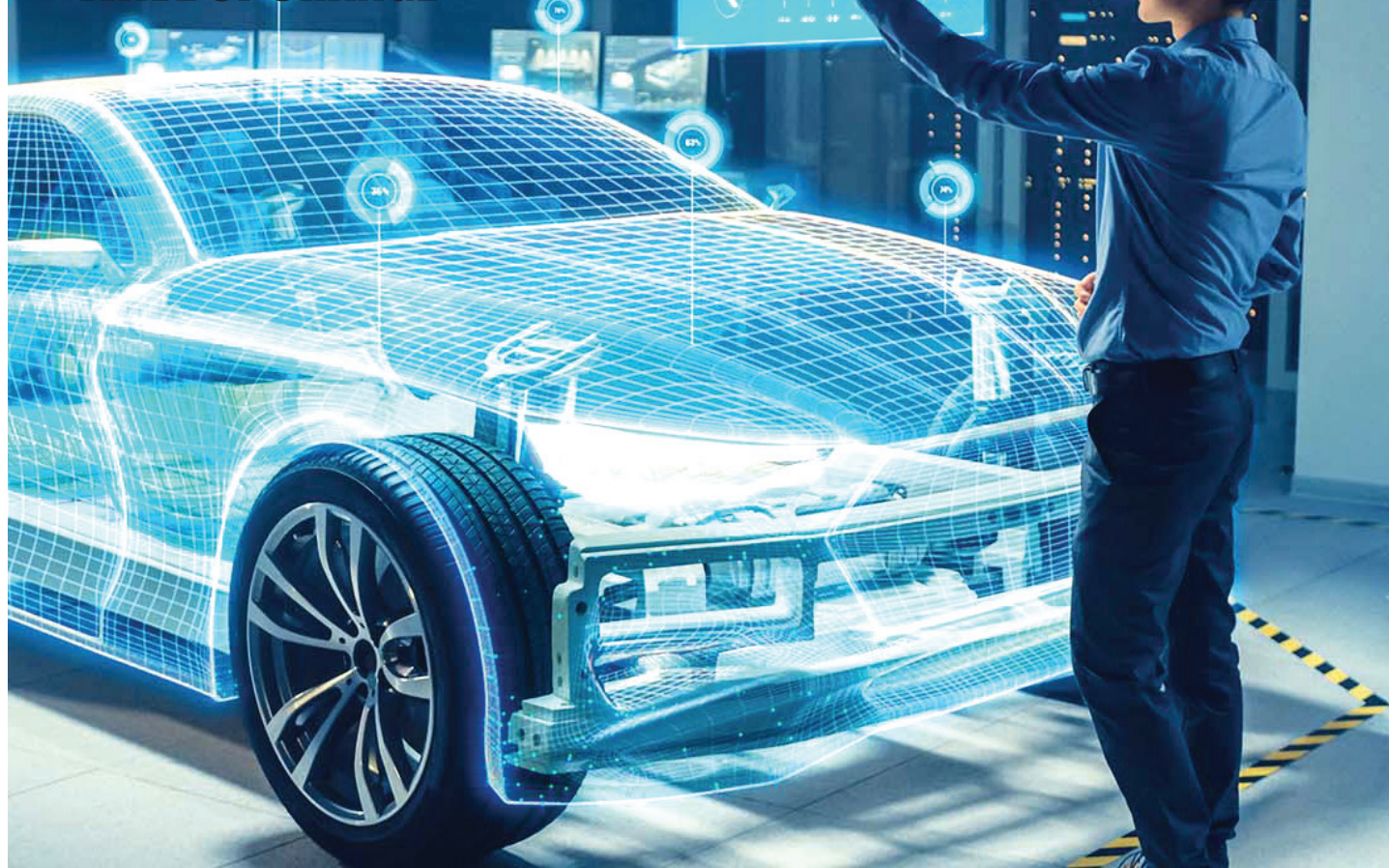
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If there's one constant in the collision repair industry, it's change. Every decade brings a new set of challenges and opportunities, and right now, we're standing at the edge of one of the biggest shifts our industry has ever seen.

Think back just a few decades. Shops in the 1980s were still dealing with carburetors, steel bumpers and vehicles that had very little in the way of electronics. By the 2000s, airbags, plastic bumpers and waterborne paint had become part of daily repairs. Fast-forward to today, and collision centres are working on cars with multiple cameras, radar systems hidden behind bumper covers, exotic materials such as carbon fibre and onboard computers more powerful than the desktops sitting in most offices.

For body shop owners, this rapid evolution is both exciting and daunting. It raises the question: How do we adapt to a future that's already at our doorstep?

In this column, we'll explore the trends shaping the road ahead and how you can position your shop not just to survive but thrive in the next era of collision repair.

The rise of technology – driven repairs

When a car comes into your shop today, the repairs look very different from how they did not so long ago.

What used to be a simple bumper job is now a complex process that may require recalibrating a forward-facing radar, scanning the vehicle for diagnostic trouble codes and documenting every step for the insurer. If you miss one of these steps, not only could the repair be incomplete, but it could also be unsafe.

According to industry surveys, more than 70% of cars on the road will need some form of calibration after a collision repair by 2028. Yet many shops still don't have the equipment or training in place. Some outsource calibrations, while others invest in in-house systems. Either way, calibrations are no longer optional.

Shops that delay adapting are putting themselves at risk of

comebacks, liability issues and lost insurance partnerships.

On the other hand, shops that embrace calibration and diagnostics as core parts of their process are positioning themselves as leaders in the next phase of collision repair. So, what can a collision shop owner do now?

Audit your capabilities. Do you have the tools, training and space to handle calibration in-house? If not, who's your trusted partner?

Invest in documentation. Insurers are increasingly requiring proof of scans and calibrations. Build a habit of documenting everything digitally.

Train continuously. Send techs and estimators to OEM training. The rate of change is too fast to rely on yesterday's knowledge.

Shorter cycles, higher expectations

Insurance companies and customers alike want faster turnaround times. But there's a catch: as vehicles get more complicated, proper repairs can't always be rushed. A 'quick fix' mindset leads to mistakes, and mistakes in this industry cost more than money – they can cost lives.

The shops that will win in the future aren't necessarily the ones working the fastest, but the ones working the smartest. That means lean processes, digital tools and clear communication.

Forward thinking shops are adopting:

- AI-assisted estimating to reduce supplement surprises.
- Photo-based customer updates to cut down on endless phone calls.
- Parts procurement software to reduce delays caused by back-ordered components.

Cycle time is increasingly tied not just to profitability, but also to customer loyalty. A shop that communicates well and sets accurate expectations will often outperform a faster competitor who leaves customers in the dark. So, what can owners do now?

Map the customer journey. Identify where bottlenecks occur – from check-in to delivery – and eliminate wasted steps.

Go paperless where possible. Digital files save time and make compliance easier.

Balance efficiency with accuracy. Speed matters, but not at the cost of OEM procedure compliance.

The people factor

Technology may be the headliner, but people are still the backbone of the industry. The technician shortage is real, and it is not going away any time soon. The average collision technician is in their 40s or 50s, and younger workers aren't entering the trade at the same rate. For shop owners, the future depends as much on developing people as it does on buying new equipment.

Young workers today are looking for careers with purpose, growth and flexibility. Collision repair has an image problem: it's often viewed as 'dirty' work rather than high-tech craftsmanship. That's something we, as an industry, need to change.

Shops that will succeed are those that:

- Partner with local trade schools and high schools.
- Offer structured apprenticeship and mentorship programmes.
- Highlight the advanced technology side of the job – because these are no longer just grease-and-grime careers.
- Retaining skilled staff means more than just a pay cheque. Forward-thinking shops are experimenting with:
 - Flat-rate pay combined with stability incentives.
 - Career paths that allow technicians to grow into roles such as calibration specialists or production managers.
- A shop culture that values safety, training and teamwork.

What can owners do now?

Brand yourself as an employer of choice. Market to technicians the same way you market to customers.

Invest in continuous education. Employees who grow with your shop are more likely to stay.

Rethink compensation models. Fair pay, combined with performance incentives, helps retain top talent.

The OEM and insurance influence

Another force shaping the future is the increasing influence of OEMs and insurers. Manufacturers are more involved than ever in dictating repair procedures, and insurance carriers are leaning on shops to justify every line item.

Shops are caught in the middle: on one side, OEM repair standards requiring specific tools, parts and processes; on the other, insurers who want to control costs.

Becoming OEM certified isn't just about marketing – it's about survival. As vehicles grow more complex, certification may be the only way to get access to parts, software or repair data. It also builds trust with both customers and insurers.

So what can owners do now?

- **Evaluate certification programmes.** Which OEMs are most common in your market? Start there.
- **Partner strong insurance relationships.** Proactive communication reduces friction and delays.
- **Document, document, document.** Proof of OEM compliance protects your business legally and financially.

- The road ahead: Five to 10 years from now

Looking beyond today, here are some emerging trends to keep an eye on:

Electric vehicles: Repairs are different, from battery handling to safety protocols. Expect more EVs in your bays each year.

Connected cars: Vehicles may soon self-report accident data directly to insurers and OEMs, potentially by bypassing traditional estimating.

Autonomous features. Even partial automation changes how repairs are validated. Liability will be a growing concern.

Sustainability. Customers and regulators alike will push for eco-friendly practises, from paint booths to recycling

Summary

As you can see, the future of collision repair is something to embrace, not fear. It is something to prepare for. Shops that thrive will be the ones that see beyond the dents in front of them and invest in the tools, processes and people that position them for tomorrow.

Because when you think about it, this business has never really been about fixing cars – it's about restoring trust, safety and peace of mind. And that mission isn't going away. The only question is: will your shop ride the next wave – or get left behind?



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CLASSIC CORNER

THE THING ABOUT DEEKS

Story and pics by Stuart Johnston



The later models were badged as Auto Unions, but essentially they were still DKW'S.



The early DKW has so-called suicide door openings.



Hubcap on the more powerful 1000S model.



Funny thing is, growing up in Pretoria in the 1960s, my mates and I used to think DKWs were slow. Those funny duck-shaped cars used to wheeze around with a comical asthmatic engine note, punctuated by a popping from the exhaust when the driver changed gear. How could you take them seriously?

The reason for the 'ting-a-ling' popping was that all DKWs were powered by two-stroke engines, and those of you who remember racing two-stroke motorcycles will know that when the rider closed the throttle, the exhaust pipe used to issue a popping sound on the over-run. For this reason, when you mention a DKW to people who remember them, nine out of 10 will immediately go into an impromptu comedy act attempting a rendition of that 'ring-ting-ting-exhaust' pop.

Just about all the DKWs we saw trundling around Pretoria way back then were driven by solid family citizenry and a large contingent of old gents and little-old ladies, who used them extremely conservatively. Because of their strange engine sound, which also seemed to indicate they lacked low-down torque, we dismissively assumed that in the performance stakes DKWs were non-entities.

That perception changed one Saturday afternoon, when my life-long bud Neil and I were ensconced in a reasonably hot little Mini owned by Neil's older brother Roger. We were battling along the old undulating Pretoria-Delmas Road nudging around 130 km/h on the downhills and revelling in the fact that this little tweaked Mini was

indeed a car that punched above its weight. So, imagine our surprise when we saw this strange duck-shaped car (I still remember it was light blue) looming large in the Mini's mirrors at an alarming rate. And even before we could remark on this threat, this Deek flashed past us at least 145 km/h and simply disappeared over the horizon.

It was only later when I became immersed in the classic car scene that I realised that in the late 1950s and early 1960s, if you were serious about winning rallies, the car to have was the funny duck-shaped DKW. In 1961, '62 and '63 Pieter and Reinhard Muhl of Rustenburg scored a hat-trick of South African Rally Championship victories in their DKW, or, more accurately, their Auto Union 1000S.

The Auto Union factor came into play when DKW upgraded their late 1950s DKW Sonderklasse cars from 900 cc to 1000 cc and re-introduced the Auto Union nameplate to these German cars. Essentially, they were simply slightly modernised DKWs that had been in production since the early 1950s, and unsurprisingly everyone and their dogs still referred to them as "Deeks".

But the four-ringed logo that was present in an understated manner on the earlier DKWs now had more prominence, which was fitting as Auto Union was the holding company of the DKW brand and had been since the 1930s. That's when Auto Union came about after four prominent German car companies – Audi, Wanderer, Horsch and DKW, joined forces to form Auto Union, and first used the famous

four-rings symbol that is still prominent on modern day Audis.

I have often been amused at old car shows when newcomers to the classic car world notice the four-ringed symbol on Deeks and exclaim: "Look, an early Audi!" They are right in essence, but to explain the complexities of the DKW history and its connection to modern day Audis would cause an instant eye glaze, so I simply nod my head.

Another interesting badge on the earlier Deeks is the one that proclaims "3=6". This refers to a marketing programme established by DKW to assure customers that by buying a two-stroke three-cylinder car displacing only 900 cc, they were effectively getting the equivalent of an 1800 cc six-cylinder car. The reason for this is that two-stroke engines have twice as many power strokes as four-strokes, and the performance of these little cars was in fact right up there with the likes of six-cylinder cars of twice the capacity.

Today I am amazed at how many DKWs are still running around in near perfect condition, and there is a good reason for this. Firstly, the build-quality of these cars in terms of panel-fit, upholstery, paint and rustproofing proved quite exceptional for its time. Volkswagen Beetles of the period were known for their fine build-quality, way ahead of the equivalent British-built offerings of the time. But the Deeks were simply in a different league.

This is no doubt why most of them were driven slowly by conservative owners, who were aware of how much they cost compared to an equivalent Anglia, Morris Minor or Austin A40s. The DKWs were priced more in the direction of the six-cylinder Ford Zephyr, and in light of this, that 3=6 marketing slogan makes so much more sense!

Now, in 2025, that two-stroke engine configuration makes a whole lot of sense for collectors too. There are only about half dozen moving parts in these simple engines – no valves, pushrods, timing chains or even water pumps to go wrong due to a lack of maintenance.

As long as you introduce the right amount of two-stroke oil to the fuel tank at a ratio of about 40:1, you are in business, and with very little visible exhaust smoke.

The two-stroke principle works on the idea of introducing the air-fuel mixture straight into the cylinders beneath the descending piston, which then squeezes that mixture into the sealed crankcase and subsequently up into the combustion chamber in the cylinder head.

This is achieved via channels on the side of each cylinder, known as transfer ports. So, while a new charge of fuel mixture is being fed into engine below the piston, simultaneously the previous charge of fuel mixture is now being fed into the combustion chamber, which when ignited by the spark plug, introduces a new power cycle. This forces the piston down, which squeezes the new charge of air-fuel into the crankcase, and up into transfer ports.

On the piston's way up again, it forces the spent gases out of the engine via a simple exhaust port in the cylinder. This whole simultaneous process occurs for every revolution of the crankshaft, while a conventional four-stroke engine only has a single power stroke for every two crankshaft revolutions.

As for the rest, well-configured suspension, a four-speed gearbox and front-wheel-drive, as well as rugged construction, made these cars regular winners on our rough South African gravel roads.

Unfortunately, DKW was sold to Mercedes-Benz in the late 1950s, which very soon moved the brand along to Volkswagen, and so the fantastic DKW era came to a halt in the late 1960s, as Volkswagen appropriated the four-ringed logo and reintroduced the Audi brand in 1968 after a break of some 50 years. But yes, one way or another, if you spot the four-ringed logo on an antiquated duck-shaped little saloon car the next time you are at a classic car show, you would be able to make a solid case that what you are looking at is a 70-year-old rendition of a modern Audi.

Rare DKW Munga off-roader has full-time four-wheel-drive.





The Sonderklasse 3=6 model has a classic mid-1950s radiator grille and front-hinged doors.



The mid-1950s DKW 3=6 came in left-hand-drive form.



Removing the grille gives access for ignition points adjustment.



MEGA CASTING

THATCHAM FINDS TESLA'S
MEGA CASTING CHEAPER TO
REPAIR THAN TRADITIONAL
STRUCTURES

Thatcham Research has published the results of a two-year study into mega cast technology used by Tesla. It revealed that they can be cheaper to repair than steel structures, if the manufacturer makes the right choices in design, repair techniques, and spare parts provision.

The use of mega casting technology supports lower repair costs and sustainability within the sector, keeping more vehicles on the road and potentially lowering rates of write-offs.

With more vehicle manufacturers set to use this technology in the coming years, this research provides crucial benchmarking data and guidance for the UK's automotive repair sector.

Richard Billyeald, chief research and operations officer at Thatcham Research, said: "Our research demonstrates that mega cast technology when properly implemented with comprehensive repair guidelines, can deliver significant benefits for insurers, consumers and the environment."

Key Findings:

Thatcham Research has revealed the results of a two-year, crash testing, damage assessment and repair process study on the large rear structure in the Tesla Model Y, made using "Mega Casting".

The results show that Mega Cast structures can be cheaper to repair than steel structures, when the manufacturer makes the right choices in design, engineering, repair techniques and spare parts provision.

Research conducted after insurance industry concern at the potential cost of repairing the large, single-piece aluminium castings after a rear end collision.

Research conducted with real-world claims data from UK insurers and Allianz Centre for Technology (AZT) Germany

Tesla's repair guidelines establish industry benchmark for mega cast repairability, though some technical gaps identified.

This new study from Thatcham Research reveals that vehicles incorporating aluminium mega cast technology can deliver substantial repair cost savings compared to traditional multi-piece steel constructions, challenging early industry concerns about repairability.

The two-year study has been conducted at the headquarters of Thatcham Research in Berkshire, UK where Tesla Model Y vehicles, which feature a single piece, aluminium rear floor section, have been subjected to a series of physical crash tests, followed by damage assessments and repair technique tests.

The Tesla Model Y's one-piece, mega cast rear chassis section, consolidates around 70 individual components into a single aluminium

casting, to reduce manufacturing time, cost and environmental impact. Thatcham Research's work shows that this technique, which several other vehicle manufacturers are planning to introduce, can also reduce repair costs in both partial and full replacement scenarios when compared to conventional steel, multi-piece vehicle structures.

"Our research demonstrates that mega cast technology when properly implemented with comprehensive repair guidelines, can deliver significant benefits for insurers, consumers and the environment," said Richard Billyeald, chief research and operations officer at Thatcham Research. "The Tesla Model Y's repair costs were consistently lower than comparable vehicles with traditional construction while maintaining structural integrity and repairability standards, which reduces the chances of a vehicle being written off in common accidents, improving its lifecycle CO₂ benefits."

The investigation, designed to simulate damage from real-world claims collected from UK insurers and conducted in cooperation with Allianz Centre for Technology (AZT) in Germany, subjected vehicles to controlled impact tests at varying severities to assess both damageability and repairability characteristics.

Comparative analysis revealed that the Model Y's mega cast construction delivered consistent cost advantages across multiple scenarios. Partial replacements cost £2,167 less than the Model 3's traditional multi-part steel rear sub-assembly construction, while full replacements saved £519. Similar patterns emerged when comparing against other manufacturers' vehicles, with the Model Y demonstrating lower repair costs than other models, including the Mercedes EQE, Hyundai IONIQ 5, and several internal combustion engine vehicles.

"The key insight from our testing is that vehicle manufacturers must integrate repairability into the design of a mega cast component," explained Darren Bright, Principal Engineer, Automotive Repair at Thatcham Research. "In Tesla's case, the inclusion of replaceable cast rear rail assemblies at just £31 each provides a cost-effective solution for minor impacts, while the relatively low cost of full replacement mitigates concerns about more severe damage scenarios."

Without this provision of reasonably priced partial and full replacement parts and the associated repair procedures, our findings would have been very different."

Industry implications

The mega cast chassis has important implications for sustainability. In practical terms, lower repair costs mean that damage which might have resulted in a total loss on a traditionally constructed vehicle is now more likely to be economically repairable. Fewer write-offs translate

to more vehicles remaining in service after collisions, preserving the energy and materials already invested in their manufacture and delaying the environmental cost of early replacement.

With manufacturers including Toyota, Volkswagen, Volvo and Hyundai announcing mega cast implementation plans, the research provides essential benchmarking data. Toyota's planned implementation will replace 177 components across front- and rear castings, while Volvo's single-floor pan cast will consolidate 100 components.

"Tesla has established important precedents for mega cast repairability, but our research highlights areas requiring industry-wide standardisation," notes Billyeald. "As this technology proliferates, establishing comprehensive repair protocols, non-destructive test procedures, and technician training programmes will be essential for maintaining vehicle safety, insurance and lifecycle sustainability."

Thatcham Research's findings will inform the development of repair guidelines, training programmes, and industry standards as the UK automotive sector prepares for this technological shift. The organisation is developing comprehensive documentation to enhance the industry's existing understanding of mega cast implications and will continue to monitor and evaluate new mega cast implementations as they emerge in the UK market.

Tesla Model Y testing deep dive

In low severity testing at 15 km/h, the mega cast exceeded expectations by sustaining no structural damage, allowing complete vehicle repair without any work required on the mega cast component itself. These findings challenge initial industry concerns about the vulnerability of large single-piece castings to minor impacts.

Medium severity testing at 25 km/h necessitated full mega cast replacement due to crack propagation and structural misalignment. However, at £716 for the replacement component, the total repair cost remained competitive with, and often below, traditional repair methods for equivalent damage.

The research highlighted key considerations, including the fact

that repairs requiring welding of the aluminium mega cast structure must be conducted at Tesla-approved facilities, raising questions about repair network capability as the technology becomes widespread. This requirement could necessitate vehicle transportation between repair centres if the initial facility lacks appropriate certification, potentially adding time and expense to the repair process. Additionally, the scale and irregular shape of these mega cast components present handling challenges for smaller body shops.

The study underscored the importance of implementing clearer non-destructive testing (NDT) procedures to effectively identify potential damage in the mega cast structure that may not be visible to the naked eye. This enhancement would ensure a more thorough assessment and safeguard the integrity of the structure.

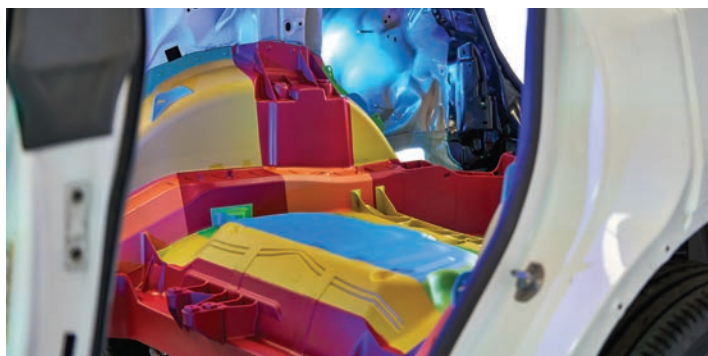
The full research report is available to Thatcham Research members and includes detailed technical specifications, repair cost comparisons, and recommendations for insurers and repairers preparing for the mega cast era.

Notes

For consistency, the term 'mega cast' is used to describe the specific component. Other terms, such as 'giga cast' and 'hyper cast', are acknowledged as terms branded by their respective vehicle manufacturers.

A mega cast, or mega casting, refers to a manufacturing technique characterised by the production of single-piece components through large High-Pressure Die Casting (HPDC) machines. In this process, molten metal, usually aluminium, is injected into a high-pressure mould, transforming it rapidly into solid, near-net-shape components.

Operating under extremely high pressure, which typically ranges from several hundred to several thousand psi, HPDC ensures quick and efficient filling of the mould. This results in high-quality parts that exhibit tight tolerances and an excellent surface finish. After casting, the components undergo trimming and laser cutting to swiftly remove any excess material. The mega cast technique is practical for creating large, geometrically complex metal components with high precision.



PRODUCT SPOTLIGHT

LUXOR PAINTS LAUNCHES AEROSOL RANGE

Kaño Kristal is a new series of aerosols from Luxor Paints. There is a pre-fill aerosol 1K paint can, as well as a South African first; a 2K pre-fill converter and a 1K pre-filled aerosol containing DME, solvents and additives. They are designed to allow 2K paints to be used as a long-standing single component system - without any hardener.

With this range aerosol are: underbody paint, car body paint, bumper paint, bumper texture paint, plastic primer, putty filler, 1K primer, lense clear.

Contact Luxor Paints on +27(0)11 397 6622 for more information.



WHAT'S HOT?

ELECTRIFYING PERFORMANCE

by Andrew Marsh

There are things we see, sometimes we do, which may be inherently risky. For example, making a very basic electric wire repair which are not by any means proper and could short out in a flash. Knowledge informs us about the consequences, but if needs must, as often happens at home, then risks are taken.

Imagine if a whole group of influential people told us all that electricity is 'safe'?

As professional collision repairers and all the associated industries including insurers, we know electricity is not safe at all unless there is the correct approach used with the correct personal protection equipment and with awareness that comes from training as well as practice. We know the proper view is:

'Electricity is safe when it is respected, and we are properly equipped for the situation.'

Why bother?

Repairers are in a unique position of finding no two accidents are exactly alike, the net average scenarios as used by vehicle manufacturers to develop impact energy distribution while minimising harm to humans – as seen in public via Euro NCAP – does not match what really happens. Repairers know – the starting point is hopefully with a vehicle which is agreed to be repaired, after it did the main job of protecting people during the impact.

Famously Volvo, and while it was alive, Saab, deployed teams of engineers to see impacts as soon as authorities allowed, to observe the material damage as well as to learn. This became, over many decades, an approach used by many vehicle manufacturers. The combination of specific defined tests along with other inputs has transformed vehicle impact survivability in the past three decades.

Back to our 'safe' electricity

The reality is the UK has a mixed parc of vehicles with full, partial or non-electrified powertrains. The scale of this mix means it would be poor business on the part of insurers and repairers to ignore this, so regardless of beliefs, every single vehicle deserves our full attention.

Politicians and much of the media fall mainly into one camp – electrification is pure, it produces no pollution from an exhaust pipe because it may not even have one and is 'kind to the planet'. Maybe, but the job of insurers and repairers is to ensure when damage occurs, it is dealt with efficiently. Collectively, we should not care why a vehicle has an electrified powertrain, but we should very much care that we can work on such a vehicle and live to tell the tale.

Electric cars are safe

A bold claim, but as long as we know we have the right clothing, the insulated tools, an area in the workshop away from the routes most often taken by colleagues, checked the condition of gloves as



well as footwear; researched the vehicle in question, planned the job ... everything should go like clockwork. Just like any other job with an element of drawing on our knowledge, topped up by some specifics and awareness of others in the workplace.

This is not about lithium-ion battery fires – although this is a subject for which there are still precious few answers – and no desire on the part of politicians to initiate standards – it is about needless risk taken by all of us at various times and the realisation large amounts of DC energy is not generally good for health.

A tiny device that can save lives

Most lithium-ion batteries have a battery management system ('BMS') module which is inside the traction battery case. Depending on the system sophistication, it takes temperature readings from several parts of the battery, looks at how each cell is matched to all the other cells, and can control the external electric coolant pumps to ensure overheating is reduced.

The BMS may not be alive after a heavy impact, and the cooling systems may not be functional either. However, if the battery is liquid cooled, and although based up, still able to work, the BMS is our biggest ally. As long as there is energy in the battery, it will try and ensure it does not overheat.

The issue is awareness of the BMS in the context of collision repair is something we need to help vehicle manufacturers understand. For the most part the system is there to ensure smooth operation of the energy storage system without damage. Once the vehicle is damaged BMS is in effect buried, so that all that stands between overheating is hope.

The present BMS, temperature sensors and cooling systems have proved to be vital to ensure a damaged battery presents little to no safety concern, but using these same items inside the battery case to monitor even when removed from a vehicle is becoming highly desirable.

The gap

The existing and growing electrified powertrain parc has all sorts of engineering good ideas, some of which worked and some of which didn't. From the time perfection is reached, purging legacy systems will take years or possibly more than a decade. During that time repairers and insurers will be asked to do their job for vehicles which are not up to the latest standard.

On the one hand the sheer volume of different vehicle specifications will keep us all on our toes.

On the other hand, with planned work and known safety steps which have been proved to work over many decades, repair is possible and at minimal additional risk. Respect for electricity matters.

SPRAYBOOTHS

ARE YOU READY FOR THE BOOTH?

As the last stop for a vehicle when moving through the repair process before reassembly occurs, the paint shop is often referred to as the “bottleneck” of a collision repair centre. The truth is that every vehicle will need to go through the paint department at the appropriate stage of the repair process. To better enhance throughput and productivity, collision repair facilities should take the time to prepare and implement a standard operating procedure (SOP) to help address the bottlenecks that can occur.

Consider these solutions to include in your own SOPs to help with efficiently moving cars through the shop and work toward minimizing future bottlenecks.

Colour, colour, colour

The most important step in repairing a vehicle is the colour rendering. Getting this wrong can contribute to delays in the shop. Let's look at some ways to enhance efficiency when it comes to getting the colour correct.

The most valuable time in the paint shop is booth time, and this next tip can assist in the reduction of booth down time. Colour rendering is a critical step in the painting process, and time can be saved if the painter has already done the colour match prior to entering the booth. Trying to colour match while already in the booth can impact productivity and create bottlenecks. The painter should know the exact colour they will apply to the vehicle in advance of going into the booth.

There are several ways the painter can get this done, including a camera scan. The camera process takes time to do properly and should be done ahead of time so a quality spray out can be completed. Collision shops also use colour decks provided by the paint manufacturer to pick the best starting point, and to get an accurate colour match, a spray-out will still need to be completed. The painter normally has a colour library of past colours that have been previously sprayed. This spray-out is the most accurate representation of the colour and most used by the painter once a collection of colours is catalogued over time. The spray-out will be fully labelled with all the information the painter will need to replicate the colour on the card. The colour should be accurate, as it will have been hand sprayed by the painter and verified against the vehicle for a proper match. There is nothing that trumps the

painter's own spray-out when choosing the colour for the repair.

Materials

While it may sound simple, the importance of being properly stocked with the required liquid and allied materials cannot be underestimated. All paint technicians should check and be aware of whether there are sufficient materials on hand to finish the paint work listed on the booth schedule for that day. This will help minimise any production loss and assist the paint department with remaining efficiency. Potential delays and inefficiencies could include being out of stock of a particular toner required to mix the paint and having to wait for it to be delivered. Booth time and throughput are critical, so it is important to maximize each booth cycle throughout the day. The average shop in the U.S. completes three to four booth cycles per day, and delays caused due to out-of-stock scenarios could potentially cost a booth cycle - which ultimately slows down production.

Review your work order and use a booth schedule

It's important to review the complete estimate early on with the body tech or production manager to ensure everything required to complete the repair is available in the shop for when the vehicle arrives and work is scheduled to commence. Reviewing the estimate will also highlight important items that may be in the “notes” section on a work order. A highlighter is a great way to mark off the items and gives an easy visual reference to all parties involved that a work order has been reviewed thoroughly. This process will help limit the delays in the collision centre. Once a job is placed on the booth schedule for the day, an estimator, body tech, and painter must review the work order before the job can be added to the schedule. The use of a booth schedule helps get all parties on the same page and maintain booth efficiency.

Prep the vehicle entirely

Any operation that can be done prior to entering the booth can contribute to time savings and help with productivity. This means a vehicle should be completely prepped prior to entering the booth, including parts on stands. Ensure the vehicle staged outside the booth is fully outlined with masking tape, leaving the car ready to be brought in booth and covered with plastic sheeting. The parts and the car should get a final wipe of wax

and grease remover before the paint job can begin. Part of this process includes premixing paint and sealers. Booth time is precious, so ensuring proper vehicle preparation is critical to helping the shop to maximize productivity.

Watch the clock

Another best practice to implement is being aware of time and the booth load. Many painters will start a paint job and step away for breaks or even for lunch. But the moment you start the paint process in the booth, you are relying on a chemical bond to ensure proper adhesion. The paint job until now has relied on mechanical adhesion through a sand scratch. We are now relying on a chemical bond, and the process needs to be followed and completed in a timely manner. Additionally, the correct dry times need to be adhered to for proper performance of the product and appearance. Stepping away from the job at hand can result in delays due to the painter becoming distracted, which places the chemical bond window at risk.

Furthermore, stepping away could potentially bring contaminants back into the booth, which may harm the paint job. Grease and food oils from lunches and breaks can really wreak havoc in the booth. Always complete the paint job and use the bake time to prepare for the next job. The time lost by taking breaks outside of a booth bake cycle can't be made back.

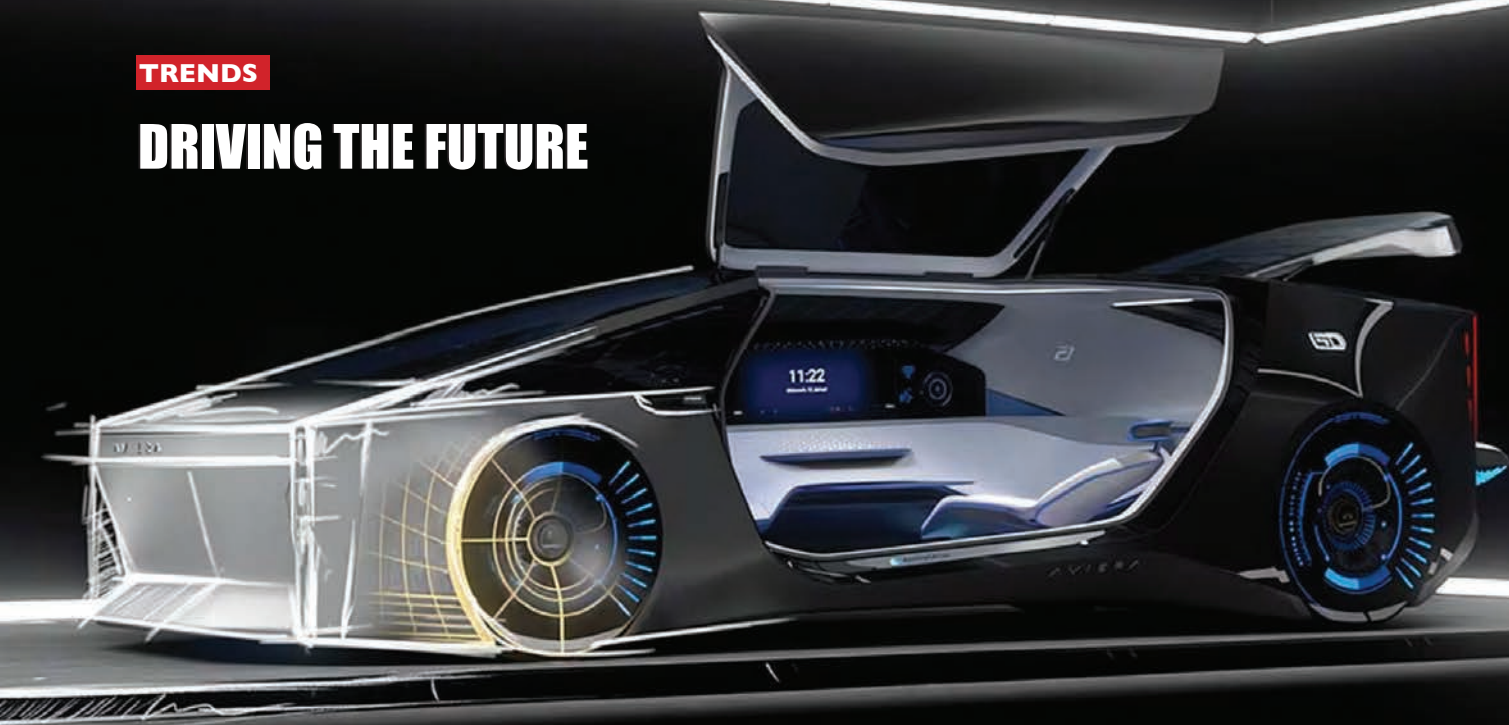
Each step of the collision repair has a process usually outlined with an SOP, and the paint shop has specific SOPs that need to be followed closely. The collision centre should review their current process on booth readiness and address as needed. This assessment will help shape the process or processes required to correct booth-readiness. This means removing any steps that slow painters down in the booth to help ensure optimal productivity and efficiency. Both the technician and management can come together to implement the changes needed.

These are steps that highly productive painters use every day to stay organized and productive. While there are many more adjustments that the various departments can make, the implementation of the five listed above is a great place to start. Make a commitment to refine your booth-readiness process and reap the rewards moving forward.



TRENDS

DRIVING THE FUTURE



The automotive industry is entering an era of unprecedented technological transformation. Trends such as vehicle electrification, autonomous vehicles, artificial intelligence (AI), the Internet of Things (IoT), machine learning, and sustainability are converging to redefine the design, production, and operation of modern vehicles. According to Markus Rovito of Autodesk, this period represents one of the most exciting times for automotive innovation since the inception of the motorcar. Today's passenger vehicles are no longer just mechanical devices; they are highly sophisticated systems combining precision engineering, software, connectivity, and comfort to ensure safety, performance, and user experience. The modern car functions as a computer, an IoT device, and a climate-controlled environment capable of seamlessly integrating with other smart technologies.

Electrification of the automotive industry

The shift to electric vehicles (EVs) remains one of the most transformative trends in the industry. Electrification addresses environmental concerns, aligns with regulatory mandates, and meets growing consumer demand for sustainable mobility. Despite a temporary slowdown in 2023 due to high interest rates, higher EV prices, and supply chain constraints such as semiconductor shortages, the trend rebounded strongly in 2024. According to Kelley Blue Book, nearly 600 000 EVs were sold in the United States in the first half of 2024, a 7.3% increase over the same period in 2023. Globally, Rho Motion reported that seven million EVs were sold in the first half of 2024 – a 20% increase compared to the previous year – with China alone accounting for 4.1 million EV sales, a 30% year-over-year rise.

Governments worldwide are accelerating EV adoption through mandates to phase out internal combustion engine (ICE) vehicles and achieve net-zero emissions targets. More than 50 countries and several U.S. states aim to end ICE vehicle sales by 2030-2050, while over 140 countries have committed to net-zero emissions by mid-century. The International Energy Agency estimates that achieving global net-zero emissions by 2050 requires EVs to constitute 50% of passenger car sales by 2030, a goal that Bloomberg NEF's 2024 Electric Vehicle Outlook anticipates approaching, projecting EVs at 45% of global passenger vehicle sales by 2030.

Battery technology and charging infrastructure are key enablers of EV adoption. Prices for lithium-ion batteries are declining rapidly, with manufacturers such as CATL and BYD expected to reduce costs by up to 50% by the end of 2024, facilitating price parity with ICE vehicles. Improved battery

efficiency also increases vehicle range, reducing range anxiety among drivers. OEMs such as Chevrolet, Hyundai, Jaguar, Kia, Nissan, and Tesla offer affordable EV models with ranges exceeding 200-250 miles, demonstrating that EV adoption is becoming increasingly practical and accessible.

The rise of software-defined vehicles (SDVs)

Modern vehicles are increasingly software-driven, leading to the concept of the software-defined vehicle (SDV), or "computer on wheels." In SDVs, software governs critical vehicle performance aspects, including safety systems, driver assistance, infotainment, and other operational features. These vehicles can receive over-the-air (OTA) updates, allowing continuous enhancement without hardware changes. The decoupling of hardware and software enables manufacturers to innovate more efficiently while ensuring seamless integration between components.

SDVs incorporate multiple software layers, including in-vehicle infotainment (IVI) systems and advanced driver-assistance systems (ADAS). Automakers employ varied development approaches: Tesla pursues vertical integration, developing hardware and software in-house, while many others adopt a horizontal strategy, partnering with cloud providers, app developers, OS platforms, UI teams, and chip manufacturers such as Intel, Nvidia, and Qualcomm. Market analysts project that the SDV software and electronics sector could exceed \$1 trillion by 2035. To manage the complexity, automakers will increasingly embrace collaboration – or "co-opetition" – leveraging expertise across companies to enhance software performance and monetise technology through licensing or shared platforms.



SDVs also open avenues for new revenue streams, including subscription services, streaming content, smart-home integration, roadside assistance, and other connected features. In vehicle production, cloud-based platforms like Autodesk Alias and VRED enable full interoperability of design and engineering data, facilitating seamless collaboration across departments, reducing time to market, and supporting creativity in design iteration.

Autonomous vehicles

Autonomous driving, long confined to research and controlled testing, is beginning to enter real-world deployment. Companies such as Ford, GM, Tesla, Volkswagen, Volvo, and Waymo are actively testing self-driving cars, alongside hundreds of smaller companies. In the U.S., over 1 400 autonomous vehicles are being trialed by more than 80 companies. Driverless taxis require Level 4 autonomy on the SAE's 0-5 scale, while current Level 3 vehicles, such as Mercedes-Benz's Drive Pilot, function as "traffic jam chauffeurs" capable of conditional automation in specific scenarios. McKinsey predicts Level 4 robotaxis could scale by 2030, with fully autonomous Level 5 trucking operational by 2028-2031.

Autonomous vehicle development relies on integrating multiple sensors – including cameras, radar, and LiDAR – feeding AI-driven systems for processing and decision-making. In-vehicle AI computers, such as Nvidia DRIVE Thor, handle these massive data streams. Partnerships among automakers, technology providers, and research institutions are critical for innovation, de-risking investments, and building supporting infrastructure. VR and simulation tools, such as Autodesk VRED, are employed to demonstrate autonomous vehicle experiences to consumers, bridging the gap between testing and public adoption.

Sustainability in automotive design and production

Sustainability has become a key priority, influencing materials selection, vehicle efficiency, and overall production practises. Automakers are reducing vehicle weight using generative design and lightweight composites, extending part lifespans through durable coatings, and adopting sustainable materials. The 2024 Kia EV9 exemplifies these efforts, using sugarcane bioplastics, bio-polyurethane from corn and castor oil, recycled fishing nets for flooring, and recycled plastics for seat stitching. Volkswagen has similarly committed to recyclable materials, sustainable textiles, and plant-based leather. Other sustainable materials trends include reclaimed wood, recycled steel, and antimicrobial coatings to minimise environmental impact.

EV proliferation requires expanded charging infrastructure and improved battery recycling. Governments, including the U.S., aim to deploy roughly 500 000 public chargers along highways by 2030, while private companies such as Hertz, GM, BP, EVgo, and Tesla expand fast-charging networks. Recycling technologies are advancing to recover graphite, electrolytes, and electrodes from spent EV batteries. Beyond vehicles, automakers are optimising factory operations for sustainability, including renewable energy use, water conservation, and energy-efficient manufacturing processes.

Artificial Intelligence and machine learning

AI, including machine learning and generative AI, is profoundly transforming automotive design, manufacturing, and vehicle operation. Designers leverage AI tools such as Autodesk Fusion's generative design to produce thousands of optimised, manufacturing-ready designs based on preset parameters. AI-driven automation assists in modelling, drawing creation, and toolpath generation, while new plug-ins such as Form Explorer for Alias generate editable 3D forms from descriptive prompts. Computational fluid dynamics (CFD) tools simulate aerodynamics in virtual wind tunnels.

In manufacturing, smart factories utilise AI and machine learning through cloud-connected sensors to optimise operations, anticipate equipment failures, predict supply chain demand, and enhance safety by reducing human exposure to hazardous tasks. Robotics in assembly, welding, and painting are also monitored and optimised using AI, improving efficiency and quality.

Vehicles themselves are becoming AI-optimised platforms. Advanced SoCs, such as Nvidia DRIVE chips, enable in-car AI for autonomous driving, computer vision, and heavy data processing. AI-powered voice assistants such as Mercedes-Benz's MBIX Virtual Assistant and Volkswagen's IDA integrate LLM-based conversational AI into the driving experience, providing intuitive interaction and vehicle control.

Internet of Things (IoT) integration

By 2024, approximately 72% of passenger vehicles globally were

predicted to be connected cars – vehicles integrated into the IoT ecosystem. These vehicles can send and receive data, communicate with external systems, and receive frequent over-the-air updates enabled by 5G networks. Connected vehicles can link seamlessly with smart homes, smart energy grids, and other digital infrastructure, providing opportunities for automakers to collect real-world data and refine vehicle digital twins.

Revenue potential for connected cars extends across the vehicle lifecycle, including maintenance notifications, safety alerts, traffic updates, and infotainment services. Deloitte's 2024 Global Automotive Consumer Study indicates significant variation in willingness to pay for these services: lower percentages in the U.S. (25%), Germany (20%), and Japan (23%) compared to higher adoption in India (71%), China (60%), and Southeast Asia (65%). 5G expansion will further improve connected car capabilities, enabling more sophisticated services, remote updates, and integration with smart-city and energy systems.

Safety standards, regulations, and cybersecurity

Safety regulations are evolving to accommodate software-defined and connected vehicles. In the U.S., proposals have aimed to mandate advanced driver-assistance systems (ADAS) capable of detecting pedestrians and initiating emergency braking. The proliferation of connectivity also raises cybersecurity concerns. By 2030, connected vehicles may contain nearly 300 million lines of code, making robust cybersecurity frameworks critical to prevent hacking, data breaches, and system failures. Regulatory requirements will need to evolve alongside rapid technological advancement to ensure that safety and security keep pace with innovation.

Conclusion

The automotive industry stands at a crossroads of technological convergence, where electrification, software, autonomy, AI, IoT, sustainability, and evolving safety regulations intersect. Manufacturers face the challenge of integrating complex systems while responding to consumer demands, regulatory mandates, and sustainability goals. The next decade will likely see unprecedented collaboration between automakers, technology providers, and governments, as companies leverage co-opetition and shared innovation to manage the growing complexity of modern vehicles.

Electrification continues to accelerate globally, driven by consumer demand, cost reductions in battery technology, and government mandates. Software-defined vehicles are redefining the role of software in mobility, enabling over-the-air updates, monetisation opportunities, and enhanced connectivity. Autonomous vehicles are progressing toward real-world implementation, with Level 4 robotaxis and Level 5 trucking on the horizon. Sustainability is becoming embedded in every stage of vehicle production, from materials to manufacturing practises to EV battery recycling. AI and machine learning streamline design, optimise factory operations, and power in-vehicle computing systems. Meanwhile, IoT integration and 5G connectivity expand vehicles' role in the digital ecosystem, opening new revenue streams and enabling smarter, safer transportation.

Ultimately, the future of automotive innovation will rely on the ability of industry players to balance rapid technological growth, evolving regulations, sustainability imperatives, and consumer expectations. Manufacturers who embrace these trends and foster collaboration across the automotive ecosystem will likely define the vehicles of tomorrow, transforming cars from mere transportation devices into intelligent, sustainable, connected, and software-driven platforms. The convergence of mechanical engineering, digital technology, and sustainability goals marks an era in which the automobile is not only a marvel of mobility but a reflection of technological ingenuity and societal progress.



AIR FILTRATION

TIME TO CLEAR THE AIR

by Alan Feldburg

Air compressors play a critical but are sometimes an overlooked role in the quality of paintwork carried out in a spraybooth.

They are responsible for delivering air at the right pressure and volume to maintain the effectiveness of spray guns.

Selecting the right air compressor means body shops need to understand how much air will be required, and what system will be appropriate to delivering it.

However, aside from the quality of the work, there is also a significant health and safety issue to consider as the air from the compressor will be the same air that is fed into the paint technician's breathing mask.

Paint technicians are required to wear respiratory protective equipment to protect them from isocyanates, which are reactive chemicals found in coatings and adhesives. Continued exposure can greatly increase the risk of occupational asthma, as well as dermatitis and irritation of the skin and eyes.

However, if the air from the compressor is not being effectively filtered and cleaned, it could be a case of out of the fire and into the frying pan.

Developments

In the past, two-stage air filters – which include a five-micron filter and a 0.01-micron filter and clean the air to about 99.998% particulate and droplet clean air – performed this job well enough.

But the development of water-based paints in the 1990s has dramatically changed the game. In the past, solvent paint would dissipate any oil from the air compressor. But oil and water do not mix, which means today's filter regulators must now also prevent vapourised oil particles from entering the breathing apparatus.

This requires a three-stage filter, which is essentially a two-stage filter with an additional third chamber for a carbon/charcoal absorption filter, which can separate oil vapours from other vapours.

Matt Stevens, managing director of SATA UK, explained: "Painters breathe the air from a compressor. Because compressors use oil you can get droplets of oil in the air. These aren't necessarily a problem because a regular two-stage filter will take out particulates, water droplets, and oil droplets. But when compressors get hot, they can vaporise the oil, and that will then travel right through a mechanical filter."

This vaporised oil can ruin the job, because when it is sprayed onto the work surface it will condense on the panel and then become "trapped" under the clearcoat, creating a pinhole appearance in the job that will ultimately require a rework.

But the real issue is a health one

Stevens continued: "Having vaporised oil on your work surface is one thing, but what if you're breathing it? The air from the compressor is used for two things: to atomise the paint and to provide the technician with an independent air supply. So, it must be free of contaminants and meet the European standard EN12021."

Awareness

However, the danger is that too few body shop managers or paint technicians are aware of the risks. Stevens said: "This isn't on a body shop manager's radar. They've got too many things to worry about, and most people see air as just air. Educating people on this is very important. It can save a lot of money and more importantly protect the health of the technician."

Jack Bowen, marketing director at Anest-Iwata, agreed. He said: "Three-stage filter regulators remove dirt, oil, water and fine particles from compressed air. Without filtration, these contaminants can be inhaled by painters, leading to dizziness or long-term health issues. Particulates will also travel through spray gun hoses, potentially causing surface defects on panels."

"Many painters assume that wearing an air-fed mask is enough, but its carbon filter is only designed to neutralise odours and small levels of contamination, not to handle heavy particulates from an unfiltered compressor. A three-stage system ensures clean air throughout the



process, protecting both technicians' health and the quality of the finish."

Maintenance

But maintaining a clean air supply is just as important as establishing one in the first place. Body shops are required to regularly monitor air quality, but these readings can be misleading and mask problems building up within the air filters.

This is because air filters are often more effective when they are clogged up and on the point of failure.

Stevens explained: "The filter has a series of holes in it. Over time those holes collect contaminants which partially cover them. But the compressor is still trying to push the same amount of air through so it is working twice as hard and getting twice as hot, which will vaporise the oil and send it straight through the system."

This will reduce the air pressure going through to the spray gun, reducing its effectiveness, but, more critically, it will create a differential on each side of the filter element with the pressure going in much greater than the pressure going out.

Once that differential reaches a certain level, it will force the contaminate through the filter and onto the surface of the paint job.

Stevens said: "After a few ruined jobs the filter element will flush itself and work normally again for a period, but it will continue to happen after that, and more frequently. The cost of regular filter changes is dwarfed by the cost of repeated reworks, so my advice is to change the filters whenever you do an air filter check."

Frequency

The first two chambers should be changed every six months, but in most cases a charcoal/carbon filter requires replacing every three months.

SATA has now released the SATA 584 which is viable for six months, allowing body shops to more conveniently align filter changes.

Also on the market is the DeVilbiss PROAir range of air filter regulators and coalescers, which are manufactured using super resistant techno polymer materials to ensure total solvent resistance, while the state-of-the-art rolling diaphragm technology ensures optimum airflow and precision control.

The DeVilbiss by Binks range also delivers high airflows for conventional, low-pressure spray guns, with optional filter specifications for spraying and air-fed respiratory protection outfits.

Michel Huynh, marketing director, EMEA, said: "We are working hard and closely with body shop painters, paint, and industrial painters looking for perfect finishing that also complies with environmental legislation."

"Our Voice of Customer programme is the guideline for our product management and engineering teams, which gathers customer feedback to support innovation and ensure we are developing the products the industry needs," he added.

Meanwhile, Anest-Iwata's leading product is the TSFRI 3603, which uses three filter elements: particulate, coalescing, and carbon filters. The TSFRI 3603 features a die-cast alloy body with glass windows for easy inspection, a built-in safety gauge, and one-twist quick release bowls for fast maintenance, while durable nitrile seals extend service life beyond standard units.

Bowen said: "We also have a range of 'outside the booth' filters that come in three stage- and two stage variants. Future developments will focus on higher pressure ratings, improved filter materials, and modular customisation options to meet different workshop needs, from single booth operations to training centres."

HEALTH AND SAFETY

ILL-FITTING MASKS POSE A SERIOUS HEALTH RISK

Paint technicians in the automotive aftermarket are 90 times more likely to get asthma than the general population, while figures from the Health and Safety Executive reveal that about 50 painters are diagnosed with occupational asthma every year.

In most cases, they are forced to leave the industry because, warns the HSE, "once a worker has been sensitised, even tiny amounts of exposure can trigger an asthma attack."

Body shop painters are particularly vulnerable to occupation asthma – otherwise known as operational asthma – because of the risks of breathing in isocyanates, which are used in some water-based paints, most basecoats and almost all lacquers.

The HSE said, "Using isocyanates is one of the main causes of occupation asthma reported in the UK and, for years, vehicle paint sprayers have been the group most at risk because paints containing isocyanate are used extensively in motor vehicle repair as almost all body shops use isocyanate-containing paints."

Risk

The challenge is that these risks are often overlooked or misunderstood. Many of those working within body shops believe that a clean air supply to the spraybooth provides sufficient protection.

But that is only as effective as the mask's seal against the face, and if there are any gaps around the edges of the mask, dirty air will pass through them and into the paint technicians' lungs.

The HSE said, "Respiratory protective equipment (RPE) can't protect the wearer if it leaks. A major cause of leaks is poor fit. People come in all sorts of shapes and sizes and it is unlikely that one type or size of RPE facepiece will fit everyone, so fit testing is critical to ensure that the equipment selected is suitable for the wearer."

Beards

The issue becomes even more complex if the paint technician has facial hair. This does not just mean a beard, as even a few days' stubble can have a significantly negative impact on the effectiveness of a mask's seal.

A government study into the effect facial hair has on mask seals stated that: "Protection could be significantly reduced where stubble was present, beginning within 24 hours from shaving, and generally worsening as facial hair grew."

That view was echoed by training and Testing Services, which specialise in face masks and one of the few training companies in the UK to be accredited by the British Abrasives Foundation.



It said, "In order to achieve the best levels of protection, we strongly advise that employees are clean shaven in the areas of the seal. Alongside moustaches and sideburns, beards and interfere with the initial testing process as well as the day-to-day protection of close or tight fitting RPE."

"Some people chose to grow beards for religious reasons or a medical condition, and this type of facial hair can pose a problem for those working in jobs that require the use of RPE."

Different forms of respiratory protective equipment can be used, such as hoods, but the consensus is the less hair, the better.

Dust Masks Direct, which specialises in personal protective equipment products, has drawn similar conclusions. It said: "The compatibility of beards and masks is a question we get asked more often than anything else and, putting it bluntly, facial hair and tight-fitting respirator masks just don't mix."

"The simple fact is that no dust mask can work effectively unless it forms a seal against the skin. Facial hair can create gaps between the respirator and the skin, thus breaking the seal and leaving you unprotected from hazardous materials and breaking every health and safety law in the book."

Responsibility

While there is an individual responsibility to personal safety, the legal responsibility rests with the employer.

The HSE concluded: "Employers have a legal duty to ensure that all paint sprayers have successfully completed the required training before using isocyanate paints. Due to the high hazard nature of isocyanate containing materials, training needs to be robust and suitable to the hazard presented."

"Information, instruction and training is not a one-off exercise and should be reviewed and updated whenever significant changes are made to the type of work carried out or to the work methods used. Training should also be repeated at least every five years."

Key safety tips

- Never spray paint outside the spray booth.
- Never lift your mask to check the quality of the work while in the spray booth.
- The spray booth takes time to clear; measure it with a fog generator and clearly mark it on the entrance door.
- Always wear respiratory protective equipment when spraying.
- Make sure the booth runs at a slight negative pressure so in the event of leaks, air is drawn into the booth rather than leaking out into the workshop.
- Carry out daily and weekly checks and record findings.
- Carry out regular health assessments such as lung function testing and skin checks to identify early symptoms and signs of occupational asthma.
- Ensure controls are working by measuring employee's exposure to isocyanate by taking urine samples.



NEW PRODUCTS



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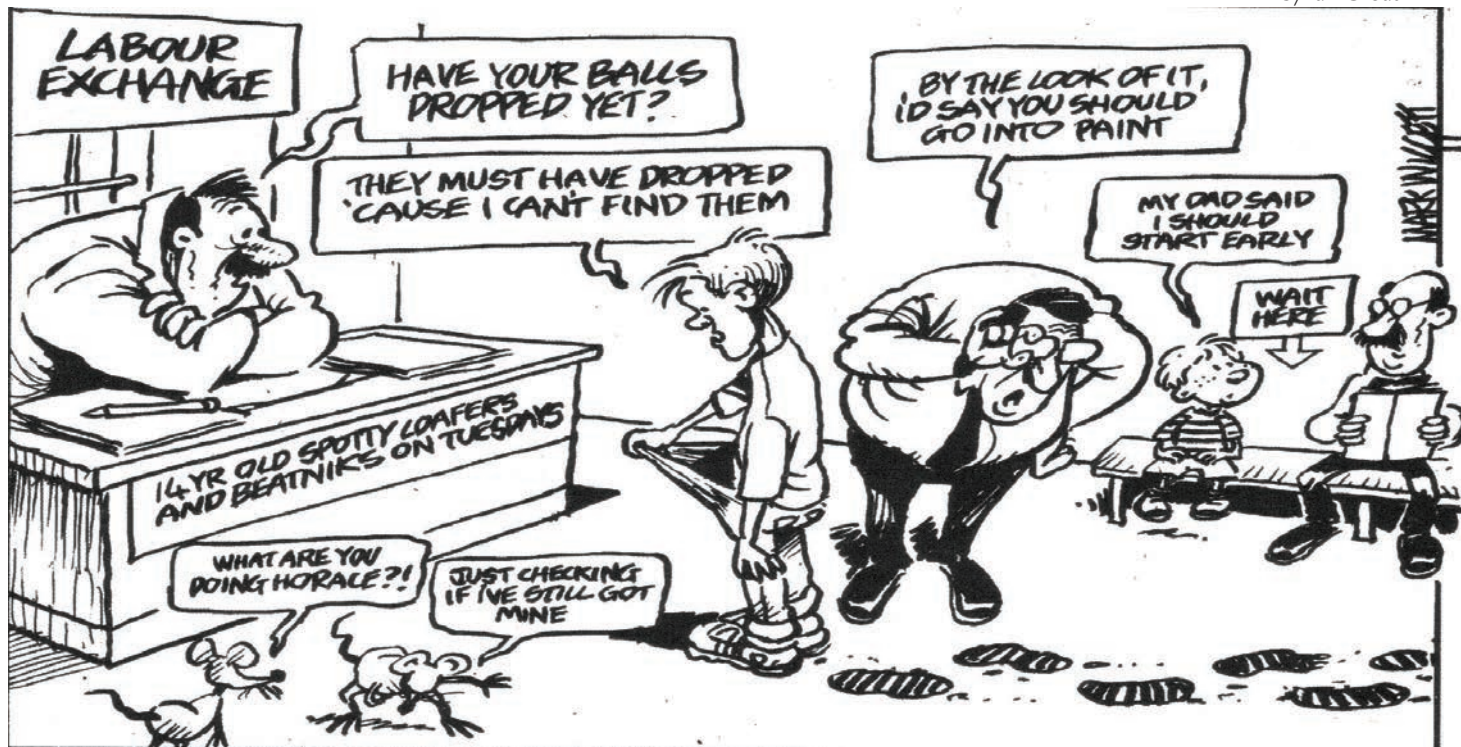
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How does the publisher feel about reaching this milestone? "Surprised mostly," but pleased to roll back the years on emigration, travel and friendships in his life. I share a birthday with the luckless millions who were wiped out on the day the A-bomb fell on Nagasaki in 1945. These days I am mostly surrounded by people of accumulating years like me, where talk is all about doctors' bills or are you going on a cruise to wind out the few days that lie ahead and that's because many of the people, I deal with are invariably considerably younger than I am and are always telling me what to do.

My generation of post-World War II baby boomers were born into a different world, one of pea soup fogs, sweet rationing and where Winston Churchill was yet to become Prime Minister and the Queen hadn't yet made it to Westminster Abbey for her coronation.

The UK can best be described as a large lump of coal stuck out in the North Sea, but despite the often-miserable weather we became the first generation that would grow up with minute black and white TV screens, pop music and both central heating and the National Health Service.

As a child I met older men and knew relations who had fought all over the world in the war, and even seen service in the First World War. The grim nostalgia of all the years of deprivations hung around like a damp memory as we played on moth-eaten school playgrounds.

My mother was an Irish nurse and a devout Catholic set against an opposite royal Air Force Officer who was a Scotsman from Wick in Caithness, an agnostic with three sons. It wasn't a marriage that was made in heaven. His job was one of moving house all the time as the American Air Forces were being constantly relocated 'back home', and transport command (air logistics) had the job of taking on the many airbases that were left deserted by the Yanks.

On the subject of schooling, I do feel short-changed a bit for with attending 13 schools – starting when I was six years old and leaving at just 14 years old – it took me seven years in the 'dunce' class to learn how to slowly read. By the time it was all over the Catholics hadn't even shown me one academic piece of arithmetic to contend with! So as some comedians will often say "I had an education the size of a postage stamp where you could still write your name and address on the back of it". It's a poor start that can leave you playing catch up for the rest of your life.

Through all this I was already working delivering papers in the morning before school started, and again in the evening. It was a form of child slavery at seven shillings a week – in every kind of weather. Not wanting to stay on for more religious education in the autumn of 1959 I parked my push bike outside the local labour exchange and squeakily asked the man behind the desk for a job. He said, "I don't think your balls have descended yet, have they?" No, was the reply. "Well, I think looking at you, you should be in paint so go and get

this job." That first offer of employment saw me to this day become involved in the paint trade. So, some 65 years later I think he was a good judge of character!

I still write my articles in long-hand, and they get sorted out by a clever set of well-educated colleagues, but to be truthful, the word surgery needed to learn about 'tenses and punctuation' remains a throwback from my formative years.

Working as an apprentice for two pound a week wasn't exactly being well paid for 45 hours of hard graft. My five years of commercial non-reward I did manage to get some qualification in paint technology to become a barely employable individual.

Joining a local coffee bar motorbike gang who were motorcycle mad drew a comment that I wouldn't make Christmas from the local doctor. What's long forgotten about this time was the music revolution of the Beatles and Elvis in the swinging 60s. It was another world of live entertainment with four local dances to attend each week and the prospect of girls on the horizon. You were year's away from worrying about those first grey hairs sprouting on your chest.

My future father-in-law ran a large motorcycle repair concern, so cheap spares were the order of the day with visits to the Isle of Man TT races and a very insular British outlook installed. Things were all well and good until I was cast outside into the cold world of unemployment and was placed on the human scrap heap at the tender age of 21. It left a black mark on my progress for a while.

I don't want to play the gypsy violin to life, but it took over six months to find gainful employment. It was another trainee position with the Rover car group, straightening bonnets, domes and being surrounded in a pall of grinding blue smoke while becoming dehumanised at Pillar 67 in a production building in the Swindon plant in South West England. This put me fairly and squarely in the emigration corner where I took the South African perceived good offer of a life of sunshine in a country devoid of class distinction.

After the previous three years of finding out that manual labour did not play inside left for Real Madrid's soccer team, the deal was set to jump on a 707 jet and try to forge another life without any family or friends. But it did start one of the abiding pleasures that I have enjoyed in the form of the opportunity to travel. It's the single greatest gift of my affluent generation to get around the globe relatively easily. To become part of a post war generation that became the most travelled even when the world varied and was mostly welcoming.

In the second part of this narrative, I will tell you about falling off a large jet plane with 24 pounds of luggage and a brand-new wife of less than two weeks into a strangely hostile Jan Smuts Airport, and the roller coaster 56 years that that has delivered. Emigration isn't for sissies. It's a brave new world to encounter, and their ain't no looking back once the wild ride starts!



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