Repair Planning Field Report[V3], 2023

repairlogic™

Working Together to Make Safe and Proper Repair Easy

Since publishing Field Report[V2], RepairLogic has fully launched and been welcomed by nearly 1,000 repair centers looking to research OEM procedures more frequently and efficiently. They are using OEM procedures more often, sharing RepairLogic reports to help claim reps and vehicle owners understand repair requirements, and taking advantage of features that make it easy to collaborate with technicians without sacrificing touch time.

Prior Field Report volumes focused on ensuring that RepairLogic is doing what we set out to do: making repair research faster, easier, and more collaborative than ever before. In Field Report[V3], we investigate ways RepairLogic is helping to improve repair quality and safety, presenting:

- Learnings from RepairLogic Platform data on the frequency of OEM procedure changes and examples of how those changes can impact repair quality if repair teams are unaware
- Readiness for electric vehicle repair, as self-reported by repair teams
- Learnings from RepairLogic Platform procedure usage data on electric vehicles
- A case study on how Dave's Auto Body used RepairLogic to increase their research rate

Sincerely,

Pat Blech | Product Director, Advanced Repair Technologies | OEC

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3600 Embassy Parkway | Suite 300 | Fairlawn, OH 44333

888.776.5792 | OEConnection.com

Field Report [V2] Recap

In November 2022, we published Field Report[V2]. It highlighted that RepairLogic:

- makes it faster and easier to find repair information — **2.3x faster research** than existing tools, averaging just 13 minutes
- simplifies adding essential repair procedures to a plan — **64% of procedures were automatically added** to repair plans
- promotes quality repair outcomes — 78% of jobs included one or more calibration procedures; **60% were automated**
- increases collaboration across stakeholders — the average RepairLogic plan was shared with two other stakeholders, **decreasing supplements by 44% for one organization**

To read Field Report[v2], visit go.oeconnection.com/repairlogic-field-report

Glossary of Terms

Our continued research into and observation of repair research and planning identified new terminology to describe common practices in place today. These terms will help to further study and quantify the impact of each practice in the access and use of repair instruction on safe and proper repair.

Repair Plan: A detailed collection of documents and procedures outlining the steps and resources, including parts, materials and personnel, to restore a vehicle to pre-damage operation and condition. Including the who, what, when, where, why, and how of the repair in documentation, utilizing resources such as position statements, schematics, and OEM repair procedures.

Repair Planning: The process of strategically organizing and coordinating the necessary tasks, resources, and timelines required to restore a damaged vehicle to its pre-damage condition based on OEM repair information. It involves meticulous evaluation, documentation, and analysis of the damage sustained by the vehicle, along with the creation of a detailed plan that outlines the steps, repair procedures, parts, and materials needed for the repair process.

Basic Search: Searching for and viewing, printing, or saving OEM repair procedures on an individual basis, as has been common practice with legacy research tools designed without repair research or planning purposes in mind.

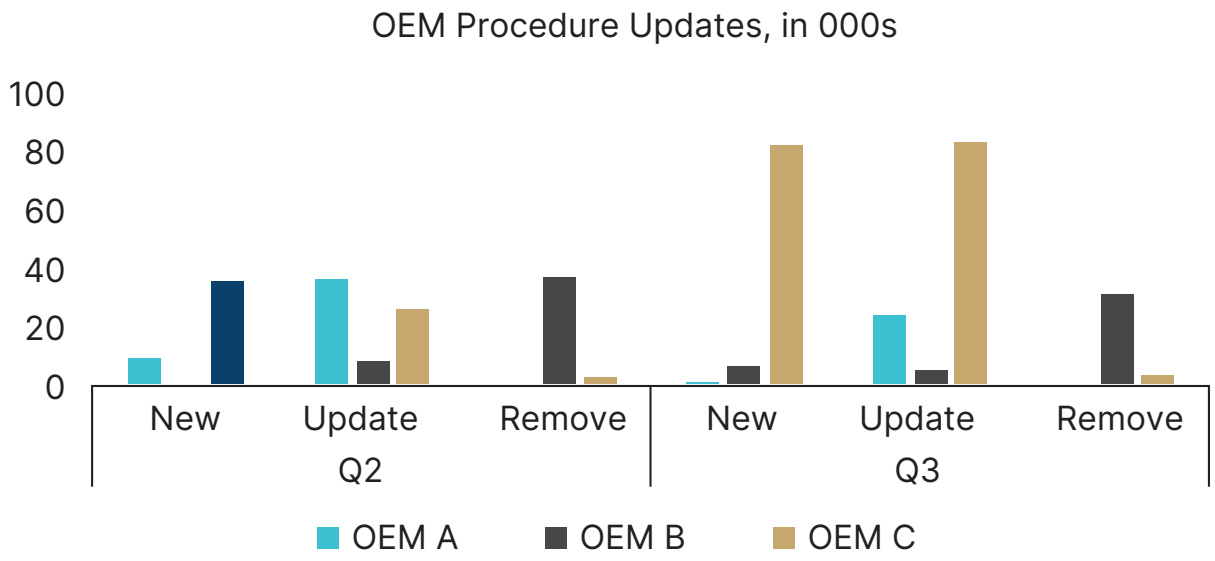
RO Research: Creating and maintaining a digital record of repair information including OEM repair procedures for a Repair Order.

Research Rate: The percentage of Repair Orders researched through Basic Search, RO Research or Repair Planning processes.

Ever Changing OEM Procedures

More than 300,000 Procedures Updated Across 3 OEMs

Historically many have wondered about the frequency and depth of OEM procedure updates but lacked data to make definitive statements. Now, with OEC's procedure versioning data, a feature exclusive to RepairLogic, we can definitively say: **OEMs are constantly updating procedures.**



In a six month period for three OEMs, over **300,000 procedures were added, updated, or deleted.** These updates are historically not timestamped and can occur at any time, making it nearly impossible for repairers to keep up on them without technology like we have incorporated into RepairLogic.

Many updates have serious implications for the safety of both the repaired vehicle and those repairing it. Some examples of critical updates include:

- GM banned paint booth heaters and reduced maximum inferred heat paint drying time from 30 minutes to 20 minutes on the 2020 Chevrolet Bolt to protect against EV battery damage resulting from excessive paint drying heat.
- Toyota increased the ADAS Calibration target size for the millimeter wave sensor by 19 inches on the 2023 Toyota Corolla, enabling sensors to recognize multiple targets and measure distance and speed more accurately.
- Ford added precautions to the 2020 Ford F-150 limiting plastic repairs with ADAS components to topcoat-only finish no thicker than 12 mills (300 microns). If maximum thickness is exceeded, ADAS sensors may fail.

Repair teams using RepairLogic are notified when procedures are updated by the OEM for any in-progress or completed RepairLogic repair plan. Armed with this knowledge, repairers are empowered to use the most up-to-date information.

Electric Vehicles

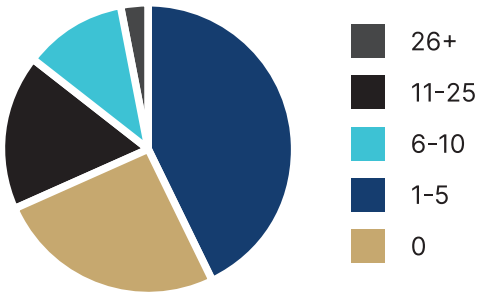
Caution Surrounding Electric Vehicle Repair

The industry is full of chatter around the safety and extra precaution required of Electric Vehicle (EV) repair. It's often said EVs require extra caution by repairers. We examined how repairers are responding to this message to learn:

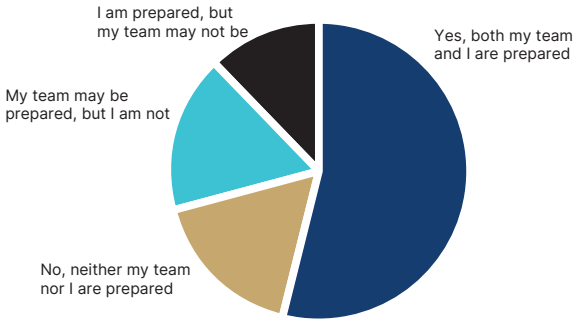
- How many locations are repairing EVs
- Whether repairers feel adequately prepared to do so
- How approaches to EV and ICE repairs differ

We surveyed dozens of repair professionals on EV preparedness in June and found that **while 74% of repair teams are now repairing EVs, only 54% feel prepared to do so.**

Monthly EV Repairs



EV Preparedness



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Electric Vehicles (cont.)

Narratives include caution around EV repairs and repairer behavior is confirming this caution as demonstrated by differences in procedure usage between EV and ICE repairs. While the number of procedures per repair is similar, the procedural makeup is drastically different. Far more prep procedures are being used in a typical EV repair vs. the typical ICE repair. Inspections, diagnostics, and precautions represent the three most common procedure types used in EV repairs.

More than **2x** as many **inspection procedures** used than in ICE repairs

More than **2x** as many **diagnostic procedures** used than in ICE repairs

10% more **hazard and precaution procedures** used than in ICE repairs

Similarly, the procedures themselves also differ between ICE and EV manuals. 16% of precautions found in EV repair manuals are specific to EVs, roughly a third of which are high voltage related. EV-specific procedures have three primary differences:

Specialized training requirements

Technicians must undergo special training to be able to service and inspect the high-voltage system. – **2023 Toyota bZ4X**

Never allow workers other than the responsible person to touch the vehicle containing high voltage parts. – **2023 Nissan Ariya**

Unique and specific handling instructions

Drive the vehicle until the engine and transmission reach normal operating temperature 96°C - 101°C (206°F - 215°F). – **2022 Ford Mach E**

Before disconnecting the high voltage battery electrical connector, the electrical connector must be cleaned with a nylon brush and free of debris. Blow any dirt or debris from the electrical connector with compressed air before disconnecting or component damage may occur. – **2022 Ford Mach E**

To keep others from touching the high voltage parts, these parts must be covered with an insulating sheet except when using them. – **2023 Nissan Ariya**

Special tools

- Insulated Gloves - 2023 Toyota BZ4X & 2023 Nissan Ariya
- High Voltage Sign – 2023 Toyota BZ4X & 2023 Nissan Ariya
- Insulating Tape – 2023 Nissan Ariya
- Insulating Sheet – 2023 Nissan Ariya

Based on the requirements for specialized EV-handling training, highly specific handling instructions, and the need for specialty tools, it's not a surprise that many repair teams want more preparation for EV repairs. Increased usage of inspection, diagnostic, and hazard & precaution procedures in EV repairs show that repairers are using OEM repair procedures to understand more about EV repair.

Dave's Auto Body Triples Research Rate

You don't need a perfect process in place to start emphasizing safe and proper repairs. While experts like Mike Anderson say OEM research should be performed for "every repair on every vehicle every time," 100% OEM research and the implementation of Repair Planning is a multi-step journey.

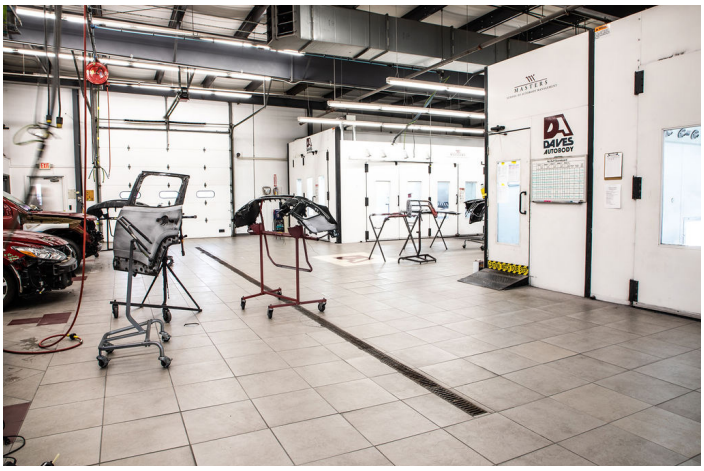
Kevin McGee, the sales manager at Dave's Auto Body in Illinois, embodies a willingness to recognize the status quo isn't good enough and push for better, one step at a time. Prior to taking over as sales manager, Kevin spent several years as an estimator. During this time, Dave's Auto Body invested in four research tools and looked up procedures for about 25% of repairs, typical of a Basic Search routine.

Dave's Auto Body increased their research rate from **25%** to **75%** within a year

Dave's Auto Body began using RepairLogic in June 2022 when Ford, Nissan, and Toyota vehicles were deployed as part of the Beta phase. Coming from the Basic Search process for a fraction of repairs, it took time to start using RepairLogic on a regular basis. Kevin explains that the usability of the RepairLogic system helped ease the transition and empowered his team to research more frequently, reaching a Research Rate of 75% within a year.

In the transition from the Basic Search to RO Research Kevin notes, before "I would just jump in and look something up and print out a PDF, but I'm now starting to build complete repair plans and my other writers are doing the same." While full repair plans aren't yet standard practice for every repair, they're continuing to move in that direction. Kevin is currently working to make RO Research or Repair Planning mandatory for every job and is among the best in class repairers in the country from a Research Rate perspective.

Importantly, Dave's Auto Body isn't taking on this change without help. Kevin praised the customer success team from OEC, noting that he hasn't received



the same support with other technology providers. "For the most part, you sign up for a program and there's no follow up... but the RepairLogic team regularly checks in to make sure it's going well." This support, and the simplicity of the platform, have been vital in helping them move towards the goal of researching every repair.

While delivering quality outcomes is Dave's Auto Body's primary reason for using RepairLogic, they're reaping other benefits – like reducing breakage of mouldings and fasteners during teardown by using OEM removal procedures. Similarly, RepairLogic's Single-Use Part Report helped them recognize and order single-use parts before starting repairs to improve throughput and profitability.

Dave's Auto Body is proving that safe and proper repair can start with a single decision. RepairLogic helped them take a big step towards their goals of comprehensive RO research on every job. The simplicity of using RepairLogic and the help of OEC have enabled Kevin and the team at Dave's Auto Body to drastically improve research rates while driving profit.

On average, more than **50%** of jobs in RepairLogic receive RO research

Summary

Safe and proper repair is a process. It encompasses every aspect of the repair cycle from planning to delivery. RepairLogic is making repairs safer for drivers and repairers by highlighting procedure changes and helping identify EV-specific procedures.

OEC's Advanced Repair Technologies team continues to analyze repair planning data with organizations actively using RepairLogic. Field Report[v4] will showcase additional findings and insights for review by repairers, OEMs, and other stakeholders joining us in our mission to drive safety, trust, and transparency in vehicle repair.

Updated Key Figures:

64%
of procedures were automatically added to repair plans.

1.12
average amount of calibrations per plan

42%
of plans contain at least one single-use part

3.4
average number of single-use parts per plan

Learn More About RepairLogic

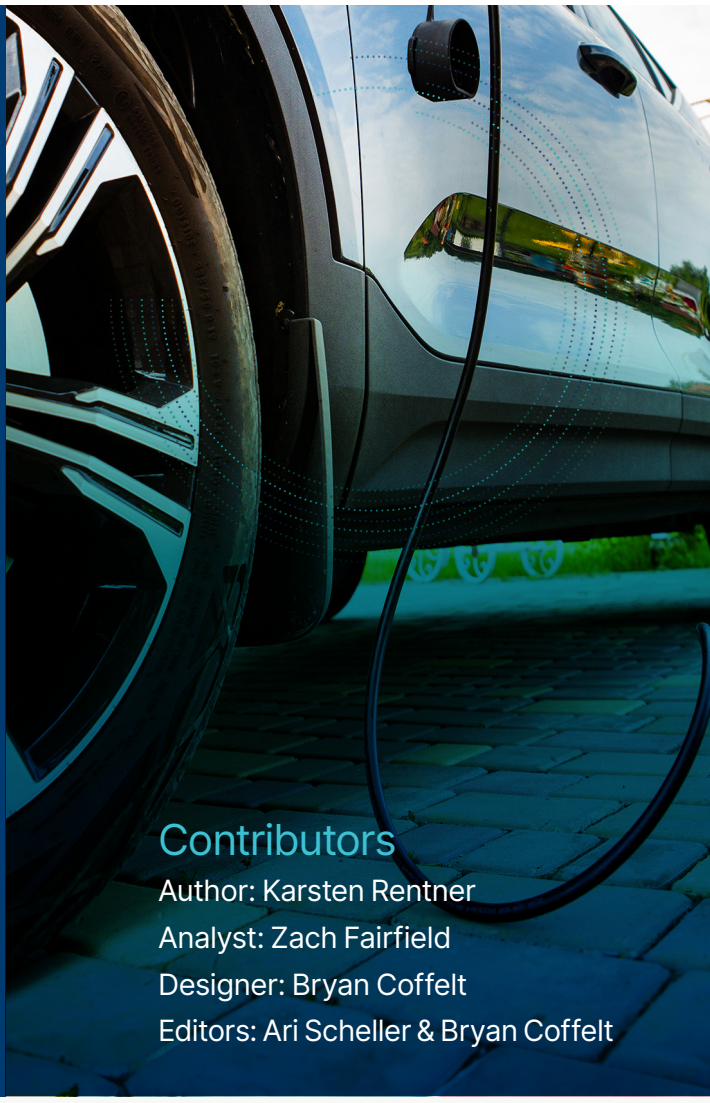
Are you interested in learning more about how RepairLogic can help you improve research rates, identify EV-specific procedures, or track OEM procedure changes? Click the Learn More link below to start a conversation!

Learn More

Already Using RepairLogic? Tell Us Your Story

How has your organization benefitted from using RepairLogic? We want to hear how your team is using RepairLogic in the repair research and planning process. Click the button below to get in contact with our customer success team and set up a time to tell your RepairLogic story!

Tell Us Your Story



Contributors

Author: Karsten Rentner
Analyst: Zach Fairfield
Designer: Bryan Coffelt
Editors: Ari Scheller & Bryan Coffelt