

Vehicle Repair: Information on Evolving Vehicle Technologies and Consumer Choice

GAO-24-106633

Q&A Report to the Ranking Member, Subcommittee on Innovation, Data, and Commerce, Committee on Energy and Commerce, House of Representatives

March 21, 2024

Why This Matters

The term “right-to-repair” refers to consumers’ ability to decide who repairs their products. For vehicles, this means consumers deciding whether to make their own repairs or take their vehicle to repair facilities. Repair facilities may be at businesses franchised with or owned by automakers, known as dealerships, or repair shops not associated with dealerships, known as independent repair shops. Vehicles are becoming more technologically advanced and increasingly transfer data, including repair data, wirelessly directly to automakers. This trend may cause challenges for independent repair shops in conducting repairs as they may not have access to that data as automakers may not share it with them.

The federal government has a limited role regarding vehicle repairs. The Department of Transportation’s National Highway Traffic Safety Administration (NHTSA) is focused on vehicle safety and is involved in vehicle right-to-repair issues only when they affect vehicle safety. The Federal Trade Commission (FTC) is involved in protecting consumers and promoting competition, including in the vehicle repair market.

We were asked to review the effects of changing vehicle technologies on vehicle right-to-repair. This report examines how changes in vehicle technologies could affect competition and consumer choice in the vehicle repair market and NHTSA’s and FTC’s actions related to this issue.

Key Takeaways

- Most automakers have been operating under a 2014 voluntary right-to-repair agreement that generally resulted in independent repair shops having access to the information, data, and tools needed for repairs. However, stakeholders we interviewed, and a nongeneralizable review of a set of complaints, suggest independent repair shops may face some access limitations.
- Advanced vehicle technologies may make repairs more expensive and complex because they require additional knowledge, equipment, and other investments. Such issues could particularly affect some independent repair shops that are unable to make such investments. In addition, according to some independent repair stakeholders, the wireless transfer of data between vehicles and automakers may disadvantage independent repair shops compared to dealerships.
- If independent repair shops face limitations in access to the information, data, and tools needed for repair, consumers might have fewer repair choices. If independent repair shops face disparities in access, it could make repairs more expensive or inconvenient for some consumers.
- FTC is taking steps to better understand potential vehicle repair limitations by considering new ways to categorize and analyze potentially relevant consumer complaints.

Who repairs vehicles and what do they need to perform repairs?

Vehicle repairs can be done by individual consumers or by repair facilities at dealerships or independent repair shops, using vehicle and repair information, data, and tools. We refer to anyone repairing a vehicle as a “technician.” Mechanical repairs to vehicles generally involve repairs to a vehicle’s working parts, such as its engine, brakes, or electrical components. Repairs can also be body repairs, which often take place after collisions.

Repair shops tend to specialize in either mechanical repairs or body repairs. According to the National Automobile Dealers Association, while all dealerships have mechanical repair centers, per their franchise agreement with their automaker, only about one-third of dealerships have body shops. Beyond dealerships, automakers have networks of certified independent body shops whose employees must take certain training and must purchase certain equipment to be certified to work on their vehicles. All eight automakers we met with told us they have such certifications.

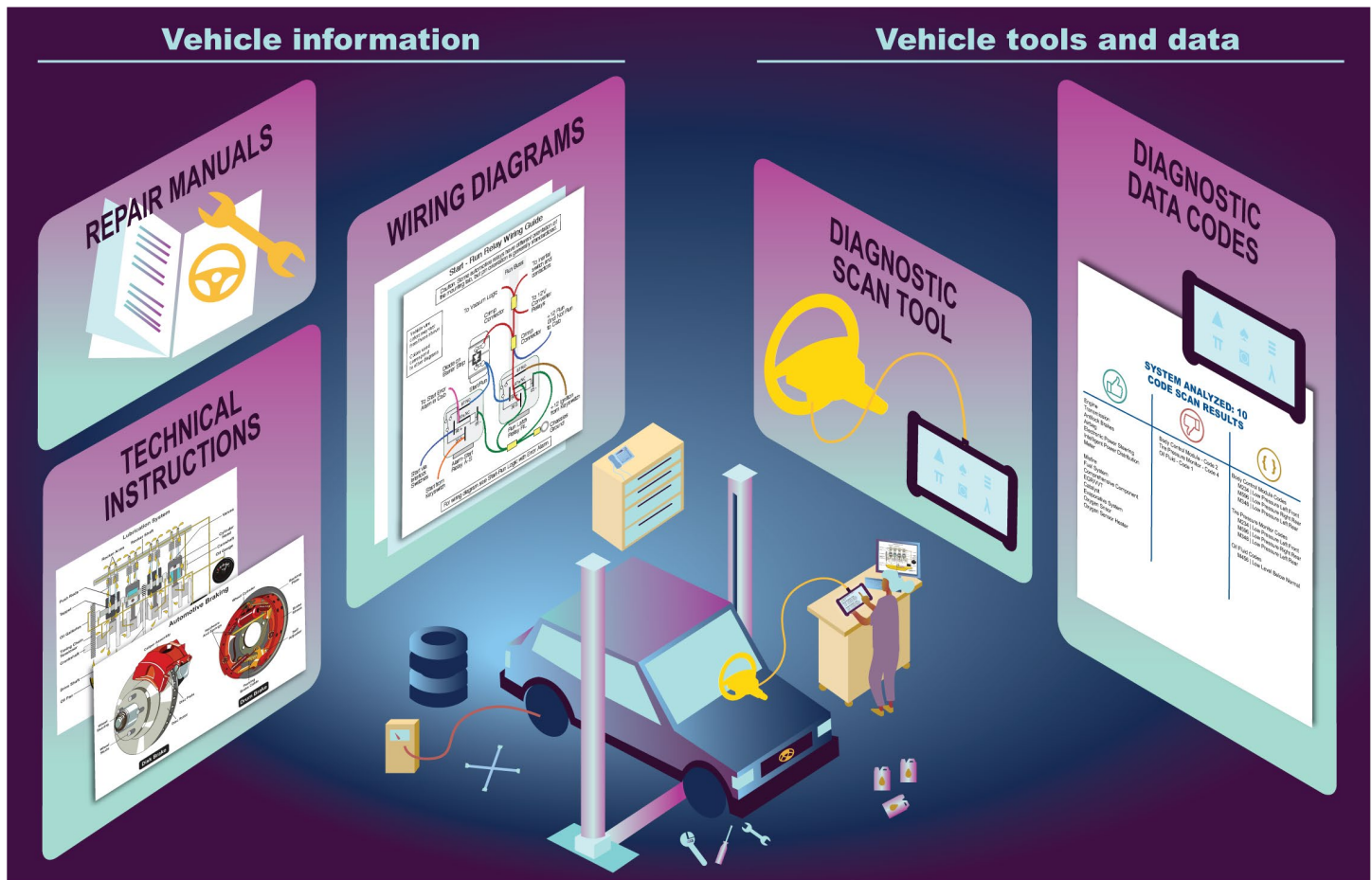
In addition to potentially needing vehicle replacement parts, any technician needs access to multiple resources to conduct repairs (see fig. 1). These include:

- **information on the vehicle and its components**, such as wiring diagrams and repair manuals detailing how to conduct repairs;
- **vehicle health and repair data**, including diagnostic error codes that help a technician determine needed maintenance or repairs; and
- **diagnostic scan tools** to access a vehicle’s health and repair data.

Independent repair shops may obtain vehicle repair information and tools from individual automakers or from third parties that provide information or tools for vehicles from multiple automakers. Dealerships generally obtain information and tools from their franchised automaker based on conditions in their franchise agreement.

Currently, to diagnose a vehicle, technicians generally plug a diagnostic tool into a port inside the vehicle. The tool then reads the vehicle’s data and provides information on the vehicle’s health and potential problems. The technician may then use the vehicle data, along with repair information, to conduct the repair. Technicians may also need to use diagnostic tools after a repair is completed to reprogram the vehicle’s systems or components to “know” that the repair has been made.

Figure 1: Information, Data, and Tools Needed for Vehicle Repairs



Sources: GAO illustration and analysis of industry information. Images (left to right) Udaix/stock.adobe.com, WPEVStartRunWires/en.m.wikipedia.org. | GAO-24-106633

What attempts have been made to ensure independent repair shops can access the information, data, and tools needed for repair?

While there is no federal law requiring manufacturers to ensure vehicle owners and independent repair shops have access to information, data, and tools needed for vehicle repair, there have been some key relevant state and nationwide industry efforts.¹ We did not conduct a comprehensive review of state laws to determine what other states, if any, have taken relevant actions.

2012 Massachusetts Law

In 2012, Massachusetts voters approved a vehicle repair ballot initiative. This law required automakers to provide to independent repair shops and vehicle owners equal access to the same vehicle repair data provided to their dealerships, starting with model year 2002 vehicles. This law also prohibited the sale or lease of new vehicles after model year 2015 if manufacturers did not ensure such access.²

2014 Industry Memorandum of Understanding

Following passage of the 2012 Massachusetts law, industry associations representing many automakers and associations representing independent repair shops entered into a national Memorandum of Understanding (Memorandum) in 2014. In this Memorandum, automakers committed to providing independent repair shops and owners access to the same information, data, and tools needed for vehicle repair that they provide to dealerships on “fair and reasonable terms”

beginning with model year 2002 vehicles. While non-binding, the Memorandum set up a dispute resolution process—now managed by the National Automotive Security Task Force (Task Force)—for independent repair shops to raise disputes when they believe they do not have full access. According to FTC, the Memorandum had the effect of helping provide consumers with choice in where to get their vehicles repaired.³

2020 Massachusetts Law

In 2020, Massachusetts voters approved an amended vehicle repair law—the Massachusetts Data Access law—which required automakers to equip vehicles with a secure interoperable open data platform to allow vehicle owners and independent repair shops to access repair data through telematics by model year 2022.⁴ Shortly after voters approved the law, the Alliance for Automotive Innovation—an industry association representing automakers—filed suit in federal court. This suit seeks to block the law’s enforcement in part on the grounds that the law is preempted by the National Traffic and Motor Vehicle Safety Act (Safety Act)—which directs NHTSA to establish vehicle safety standards—and other federal laws.⁵ As of March 8, 2024, litigation related to preemption is ongoing.

2023 Industry Commitment

Subsequently, in July 2023, different industry associations representing automakers and independent repair shops entered into a national commitment reaffirming the principles of the 2014 Memorandum.⁶ The commitment clarified the application of those principles to electric and hybrid vehicles and stated that automakers will provide access to vehicle telematics data necessary for vehicle diagnostics and repair, if not otherwise available. The commitment also called for the creation of a panel of industry stakeholders to review issues with the availability of repair and diagnostic data and collaborate on potential solutions. In addition, the commitment stated the parties would establish a working group to review changes in vehicle technologies that may affect the vehicle repair market. The parties agreed to annually review and update the commitment if appropriate.

2023 Maine Law

In November 2023, Maine voters approved a vehicle repair ballot initiative similar to the Massachusetts Data Access Law.⁷

What are trends in the vehicle repair market for independent repair shops and dealerships?

Revenues for the total vehicle aftercare market—which includes supporting vehicles after they are first sold, including parts and services—grew 41 percent from 2014 to 2022, according to data reported by the Auto Care Association.⁸ This figure includes independent repair shops, dealerships, and other businesses. According to an industry report we reviewed, independent repair businesses compete on multiple factors including price, quality of service, and convenience. This report added that there are low barriers to entry for new repair shops, which allows new independent repair shops to enter the market easily.⁹

Independent Repair Shops

According to data reported by the Auto Care Association, independent repair shops and other companies that support vehicle care that are not dealerships consistently earned about 70 percent of all post-sale vehicle-related revenues from 2014 to 2023.¹⁰ However, these revenues include services and goods

beyond repairs and parts. For example, car washes and car care products sold at retail stores, such as hardware stores, are included in this percentage.

In addition, according to our analysis of data reported by the Auto Care Association, in line with the overall growth of the vehicle aftercare market, the independent repair market has grown in recent years. We found that total revenues (which include parts as well as services such as repairs and maintenance) for independent repair shops grew about 43 percent from 2014 to 2022. Our analysis of data reported by the Auto Care Association also found that the number of independent repair shop locations grew 4 percent during that time.¹¹

Dealerships

Total dealership revenues for repair services and parts grew 45 percent from 2014 to 2022, according to estimates by the National Automobile Dealers Association. According to that association, the number of dealerships remained relatively flat, growing by about 2 percent during that time. Dealerships generally compete more with independent repair shops that focus on mechanical repairs than with body shops given that, as noted earlier, not all dealerships do body repair work. The National Automobile Dealers Association estimates that 35 percent of dealerships had on-site body shops in 2022, down from 39 percent in 2017.¹²

Do independent repair shops have access to what they need to conduct vehicle repairs?

Views varied on the extent to which independent repair shops have access to the necessary information, data, and tools to make vehicle repairs. Most automaker and independent repair stakeholders we interviewed stated that, since 2014, independent repair shops have generally had access to what they need to make repairs.¹³

Officials from all eight automakers we interviewed said they provide to independent repair shops, on fair and reasonable conditions, equal access to the information, data, and tools needed for repairs, and will continue to do so. Specifically:

- **Information.** All automakers we interviewed sell subscriptions to repair information, such as repair manuals, to independent shops for as short as a day and as long as a year. Seven of the eight also provide their repair information to third party companies that sell access to independent repair shops.¹⁴
- **Data and tools.** All automakers we interviewed said their company provides access to vehicle diagnostic and repair data to independent repair shops. All sell their own diagnostic tools to be used with their vehicles and provide the data needed to third party tool companies that offer tools to work with vehicles from multiple automakers.

However, nine of the 14 independent repair stakeholders described limitations related to being able to access specific vehicle data, in some cases for specific automakers. For example:

- One independent repair shop technician described problems using a third-party scan tool that provides basic diagnostic data but does not provide access to certain vehicle components, such as the tire pressure monitoring system. The technician said this, and other data limitations, result in the shop needing to take some vehicles to dealerships to complete repairs.

- One independent repair shop owner said that they have difficulty programming parts installed in many vehicles because they do not have the access needed to do so.
- One independent technician said that they were unable to use third-party scan tools with newer vehicles from one automaker and instead must use the tool sold by that automaker.

It is hard to determine how common those limitations are. Our nongeneralizable review of complaints from independent repair shops filed with the Task Force and a set of consumer vehicle safety complaints filed with NHTSA (which are not intended to be about vehicle repair issues) found some potential instances of independent repair shops not having access to the information, data, or tools needed for repair.¹⁵ For example, one complaint filed with NHTSA alleged that a vehicle owner took their vehicle to an independent repair shop that could not do the work because the shop lacked the access to program the vehicle. In addition, there were multiple Task Force complaints from independent repair shops regarding an inability to diagnose vehicles.

According to FTC officials, the agency has received some relevant complaints in its public complaint system. While officials did not quantify the exact number, they described it as limited. FTC officials noted that it is difficult to determine which, if any, vehicle repair complaints might indicate independent repair shop access limitations because people filing complaints may not use terminology that make such complaints easily identifiable.

How are changing vehicle technologies presenting challenges for independent repair shops?

Evolving vehicle technologies are presenting challenges for repair shops, including independent repair shops, by making some repairs more complex and expensive. Evolving vehicle technologies include:

- **Advanced driver assistance systems.** These technologies are designed to improve vehicle safety by, for example, helping drivers avoid crashes through the use of sensors, cameras, and other technologies. According to Consumer Reports, these systems were available on more than 50 percent of 2023 model year vehicles. Following repairs, these technologies often need to be recalibrated with expensive, specialized equipment. Ten of the 14 independent repair stakeholders said this complexity may limit a technician's ability to conduct some repairs if, for example, they lack the necessary equipment or training.
- **Software-based components.** Evolving safety features and other advances have led to the use of more electronics and software in vehicles, which may require programming. According to the Institute for Electrical and Electronics Engineers, premium cars contained 100 electronic control units (embedded devices that execute vehicle functions) in 2011; however, they may now have more than 150 electronic control units. In addition, according to the institute, even low-end vehicles now may have almost 100 million lines of software code. Three independent repair shops we interviewed cited instances of not having access needed to be able to reprogram vehicle electronics systems after repairs so that those systems will link to replacement parts.
- **Electric vehicles (EVs).** According to a report by McKinsey & Company, EVs have reduced the need for maintenance overall, but require additional training and investments by repair shops given the use of batteries and other components.¹⁶ Investments in tools, technologies, and training are critical for technicians to work on EVs. One independent repair shop owner said the shop lacked the experience and training to work on EVs, a situation the shop

has addressed by investing the time and resources necessary to train 20 technicians to repair them. The owner added that extensive training is necessary as each automaker approaches EV systems differently. The number of EVs may grow as the current administration has a goal for EVs to comprise 50 percent of all new vehicle sales by 2030.

These evolving vehicle technologies impose challenges on all repair shops. For example, two dealerships we met with cited the high costs of equipment needed to calibrate advanced driver assistance systems. An industry study also reported that more than half of dealerships are not fully prepared to service electric vehicles.¹⁷ In addition, challenges in repairing vehicles with advanced technologies may especially affect the ability of some independent repair shops to be competitive. For example, independent repair shops that do not have the ability or willingness to undertake needed investments and training may not be able to conduct such repair work. According to one industry report we reviewed, repairers that are unable to work on technologically advanced vehicles will lose out on business while those able to keep up with technology will be better able to compete.¹⁸

How could independent repair shops be affected by potential changes in the availability of repair and diagnostic data?

The ability of vehicles to transmit repair and diagnostic data wirelessly over telematics systems may disadvantage independent repair shops compared to dealerships, according to independent repair stakeholders. According to the automakers we interviewed, almost all model year 2023 vehicles sold in the U.S. transmit some vehicle data through telematics to automakers. This may include data on the vehicle's health and needed repairs or maintenance, such as the need for an oil change or the diagnostic code behind a check engine light, which might indicate a needed repair.

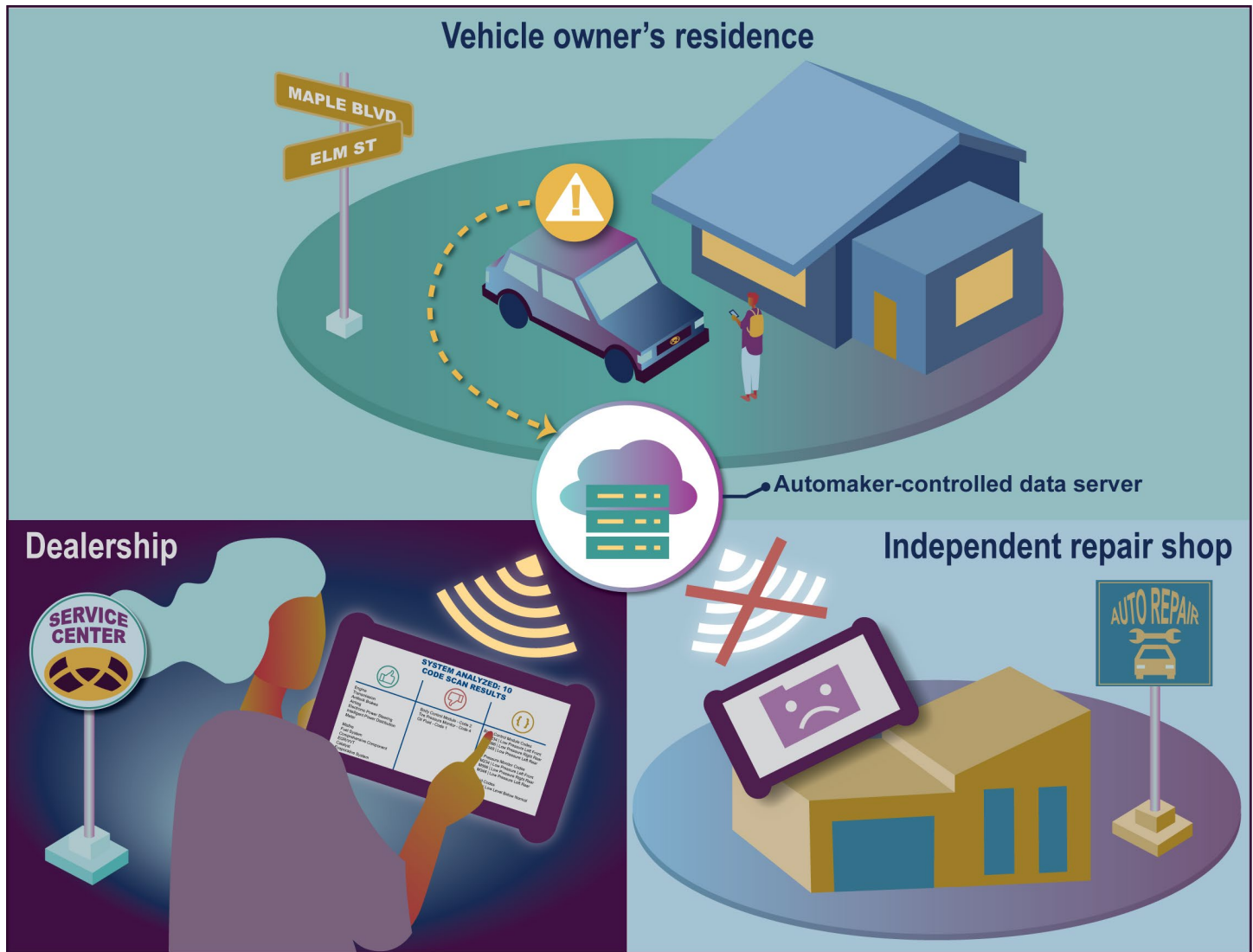
Six automakers we interviewed told us they do not provide dealerships with any access to telematics data. The two that do provide access to some telematics repair and diagnostic data, provide a similar level of access to independent repair shops. For example, one automaker provides access to telematics data to independent repair shops in some circumstances when it may be useful, but not necessary, for a repair, such as to provide historical information on the vehicle's health. All the automakers said telematics data are not currently needed to diagnose or repair a vehicle, as all the necessary data are available through the physical port in the vehicle. Most (11 of 14) independent repair stakeholders agreed and said that independent repair shops do not currently need telematics data for repairs.

All automakers we interviewed added that their companies plan to continue to make repair and diagnostic data available to independent repair shops through the physical port inside vehicles. They added that should that data no longer be available that way, they will continue to make the data available regardless of the mechanism used for access. However, many independent repair stakeholders expressed concerns about the voluntary nature of the 2014 Memorandum and 2023 commitment and that automakers may not continue to provide access. In addition, all four independent repair shops and six of 10 independent repair associations we interviewed expressed concerns that even if such data continue to be available through physical access in vehicles, any disparities in telematics data access between independent repair shops and dealerships may disadvantage independent repair shops. For example:

- **Remote diagnosis.** If automakers allow dealerships to directly access a vehicle's telematics data, including detailed diagnostic codes, they may, at an owner's request, be able to remotely diagnose a vehicle and tell the vehicle owner what repairs, if any, need to be conducted (see fig. 2). Independent repair shops that do not have access to such data would need the owner to

bring the vehicle to their shop for diagnosis. According to two independent repair stakeholders we interviewed, this would be an inconvenience for customers that may disadvantage independent repair shops.

Figure 2: Example of Potential Remote Vehicle Diagnosis by Dealership via Telematics



Source: GAO illustration and analysis of industry information. | GAO-24-106633

- Marketing.** Currently, because automakers control access to telematics data, they and their dealerships can proactively inform some consumers when vehicles need repair or maintenance. For example, an automaker could notify an owner when a vehicle needs an oil change and direct them to a nearby dealership. While the consumer could still take their vehicle to an independent repair shop, this outreach may make them more likely to go to a dealership. Ten of the 14 independent repair stakeholders expressed concern that this scenario would disadvantage independent repair shops.
- Over-the-air updates.** According to NHTSA, automakers are increasingly using over-the-air updates to address some safety recalls electronically. However, four independent repair stakeholders expressed concern that in the future, automakers may be able to conduct some repairs through wireless over-the-air updates, leaving independent repair shops unable to conduct

such repairs. However, to the extent that over-the-air updates are used by automakers for some repairs in the future, dealerships also would likely miss out on the opportunity to conduct such repairs.

Are there potential cybersecurity concerns with providing access to telematics data?

There are potential cybersecurity risks with sharing access to vehicle data, including telematics data, as we have previously reported.¹⁹ Cybersecurity risks can include the potential for hackers to exploit vulnerabilities in systems to gain access to vehicle data, including location data, and to control critical vehicle systems such as steering. Our past work also found that researchers have demonstrated that hackers could exploit vulnerabilities in a telematics system to compromise multiple vehicles simultaneously.

According to NHTSA, telematics systems could be leveraged to compromise vehicle systems if not properly designed and protected. Our previous work identified key practices for mitigating vehicle cybersecurity vulnerabilities. These practices include building cybersecurity protections into vehicles starting in their early design phase, separating safety-critical systems from other systems on vehicle networks, and conducting risk assessments.²⁰

Despite potential cybersecurity risks, two stakeholders we interviewed with expertise in cybersecurity indicated that it could be possible for automakers to provide secure access to telematic diagnostic and repair data to independent repair shops. All eight automakers expressed concerns with open access systems for telematics data but said they could provide the necessary access through their own closed systems. Two automakers we interviewed told us they use such closed systems to provide, on a limited basis, secure access to some vehicle telematics repair and diagnostic data to independent repair shops.

What actions are NHTSA and FTC taking regarding potential vehicle repair limitations?

Because NHTSA's authority and mission are focused on vehicle safety, NHTSA's role in the issue of vehicle right-to-repair has been limited to addressing potential cybersecurity concerns as they relate to vehicle safety and ensuring compliance with the Safety Act. NHTSA has recognized that the balance between vehicle repair and cybersecurity is not easy to achieve. NHTSA has also stated that cybersecurity should not be a reason to justify limiting who can conduct repairs and, conversely, the ability to make repairs should not limit cybersecurity controls.²¹ In addition, NHTSA has communicated with automakers and state officials regarding whether and what type of telematics access systems would create potential vehicle safety and security risks.

FTC has broadly studied and taken action on repair restrictions in various industries, including vehicle repair. As part of its efforts to broadly study repair issues, FTC held a workshop in July 2019 on repair restrictions across a range of industries and, in May 2021, issued a report in part based on that workshop.²² While this report highlighted automakers' efforts to increase repair options for consumers, it also noted that stakeholders expressed concerns about potential access limitations, including the potential for automakers to restrict access to telematics data to reduce consumer choice for repairs.

FTC has also taken action against specific automakers regarding vehicle repair issues that may violate federal laws. For example, in 2015, the FTC settled charges with one automaker it alleged told some vehicle owners that the automaker's warranty would be voided if vehicle owners did not use dealerships for maintenance and repair and that the automaker would only cover genuine parts from the automaker.²³ FTC staff also sent a letter to another automaker in

2018 raising concerns about statements made by the automaker indicating that consumers had to use that automaker's official parts in repairs to not void their warranty.²⁴

According to agency officials, FTC enforcement actions can be driven by its evaluation of relevant complaints filed with the agency, among other things. FTC officials said that the agency is taking steps to better analyze its complaint data to identify relevant complaints related to vehicle repair limitations. For example, FTC officials said that FTC is developing search tools, informed by research, to better analyze complaints to identify relevant ones. FTC has also been working to improve how complaints are coded when filed by consumers. According to FTC officials, these are ongoing efforts and there are no specific time frames for completion. These efforts may better enable FTC to identify the extent to which limitations for independent repair shops negatively affect consumers and, therefore, potentially take action.

What might all this mean for consumers?

A reduction in the ability of independent repair shops to conduct repair work could reduce consumer repair choices, whether that reduction is due to limited access to the information, data, and tools needed for repair or to an unwillingness or inability to keep up with technological changes. In addition, a disparity in access to telematics data compared to dealerships could put independent repair shops at a competitive disadvantage. These potential effects could increase prices for consumers as well as affect consumers in other ways. For example, consumers may have to travel farther if local independent repair shops are not available or could experience increased wait times if there are fewer shops overall making repairs.

The potential negative effects of reduced consumer choice may not be felt equally among all vehicle owners. For example, low-income or rural consumers could be harmed the most, according to five independent repair shops and independent repair associations. Specifically, low-income consumers may have more difficulty paying if there is an increased cost of repairs. Rural customers may have fewer local options to begin with so may need to take their vehicles to dealerships or other facilities further away if local repair shops were to close.

Stakeholder views differed on the extent to which, in the future, independent repair shops will have access to the information, data, and tools needed for repairs. All eight automakers we interviewed said that they will continue to provide equal access to information, data, and tools to independent repair shops. All eight of the automakers either are party to or said they support the 2023 commitment. However, eight of the 14 independent repair stakeholders we interviewed expressed concerns about lack of enforceability in the 2014 Memorandum and 2023 commitment. Specifically, because those agreements are voluntary, stakeholders worried that automakers may stop providing access to the information, data, and tools needed for repair. To the extent that happens, independent repair shops may be limited in their ability to conduct some repairs.

Agency Comments

We provided a draft of this report to the Department of Transportation and the FTC for review and comment. The Department of Transportation and FTC both provided technical comments that we incorporated as appropriate.

To inform how changes in vehicle technologies could affect competition and consumer choice in the vehicle repair market we conducted a literature search and reviewed relevant studies and papers. We searched for literature published between January 2018 and May 2023 in database platforms including ProQuest, EBSCO, Scopus, Dialog, and Westlaw using search terms including “vehicle right-to-repair” and “automobile repair.” We reviewed abstracts of publications in the search results to select and obtain those most relevant to vehicle repair limitations. We did not identify sufficient literature to draw broad conclusions about vehicle repair limitations.

We reviewed publications from FTC and NHTSA as well as industry associations. We analyzed industry data on independent repair shops reported by the Auto Care Alliance.²⁵ To determine the reliability of that data, we interviewed Auto Care Alliance staff regarding how the association collected the underlying data. We concluded that the data were sufficiently reliable to report on trends in the repair market.

We conducted a nongeneralizable review of complaint data from NHTSA and the Task Force to identify possible examples of repair limitations for independent repair shops. We did not review these complaints, or conduct any quantitative analysis, to determine the extent of the problem. We obtained records on over 260,000 vehicle safety complaints (known as Vehicle Owner’s Questionnaires) filed with NHTSA from January 1, 2020 to May 16, 2023. We searched complaints using terms such as “independent shop,” “could not diagnose,” and “local mechanic” to determine if any might indicate a limitation in independent repair shop access to information, data, and tools needed for vehicle repair.

We obtained all 238 complaints filed with the Task Force by independent repair shops or others from December 9, 2020 to June 7, 2023, the time range for which the Task Force could provide records. We reviewed each of these complaints to determine if some may have indicated limitations by automakers in providing access to the information, data, and tools needed for vehicle repair to independent repair shops.

For both sets of complaint data, because it was difficult to determine if any given complaint indicated an issue with limited access to repair information, data, or tools by independent repair shops, we did not attempt to quantify the number of potentially relevant complaints. To determine the reliability of these complaint data, we interviewed NHTSA officials and Task Force staff. We concluded that the data were sufficiently reliable for identifying possible examples of vehicle repair limitations for independent repair shops.

In addition, we interviewed a range of 51 industry stakeholders. For some interviews we selected interviewees in specific states—Illinois, Maine, and Massachusetts. We selected these states to include a range of urban and rural populations, number of auto mechanics, the number of electric vehicles (as a percentage of all registered vehicles in each state), and state-specific advocacy on vehicle right-to-repair issues. In each state we attempted to interview representatives from the following entities: the state Attorney General’s office, independent repair shops, independent repair organizations, state-specific automobile dealership associations, state vehicle fleet management agencies, and franchised dealerships.²⁶

Interviewees included:

- Fourteen independent repair stakeholders, including 10 associations selected based on involvement in vehicle repair issues and recommendations from other interviewees and four independent repair shops based on recommendations from state or regional independent repair associations;

- Six dealerships selected based on recommendations by national or state dealership associations and three dealership associations selected based on their representation of dealerships at the national or selected state level;
- One automaker association and eight automakers selected based on market share and to include domestic and foreign automakers as well as one automaker focused only on electric vehicles;
- Five consumer interest groups selected based on web searches for involvement in relevant issues or recommendations from other interviewees;
- Four state agencies involved in fleet management or consumer protections in selected states; and
- Ten other stakeholders, including three involved in cybersecurity issues, based on recommendations from other interviewees on involvement in relevant issues.

For a list of all industry stakeholders we interviewed see table 1. We reviewed interviews to identify how frequently different themes and viewpoints were mentioned.

Table 1: List of Interviewed Industry Stakeholders

Independent repair associations and shops

Alliance of Automotive Service Providers of Illinois	MEMA Aftermarket Suppliers
Alliance of Automotive Service Providers of Massachusetts, Inc.	Mid Atlantic Auto Care Alliance
Auto Care Association	Midwest Auto Care Alliance
Automotive Service Association	National Independent Automobile Dealers Association
Axel's Automotive (Illinois)	New England Tire and Service Association
Don Foshay's Discount Tire & Alignment (Maine)	Society of Collision Repair Specialists
Direct Tire & Auto Service (Massachusetts)	VIP Tires & Service (Maine)

Dealership associations and dealerships

Advantage Acura and Advantage Chevrolet (Illinois)	National Automobile Dealers Association
Herb Connolly Chevrolet (Massachusetts) ^a	Pape Chevrolet-Subaru (Maine)
Illinois Automobile Dealers Association	Quirk Chevrolet of Portland (Maine)
Maine Automobile Dealers Association	<i>One dealership that did not want to be named</i>
MetroWest Subaru (Massachusetts) ^a	

Automaker associations and automakers

Alliance for Automotive Innovation	Subaru
Ford Motor Company	Tesla
General Motors	Toyota Motor North America
Hyundai Motor America	<i>One automaker that did not want to be named</i>
Stellantis	

Consumer interest groups

AAA	Public Interest Patent Law Institute
Consumer Reports	U.S. Public Interest Research Group
Electronic Frontier Foundation	

State agencies

Commonwealth of Massachusetts, Operational Services Division	Office of the Illinois Attorney General
Maine Central Fleet Management	Office of the Maine Attorney General

Other stakeholders

American Property Casualty Insurance Association	National Association of Mutual Insurance Companies
CAR Coalition	National Automotive Security Task Force
Brian Daugherty, Liberty Advisors Group, Independent Automotive Consultant	National Cyber-Forensics & Training Alliance
Massachusetts Right to Repair Coalition	National Institute for Automotive Service Excellence
Mitchell1	National Institute of Standards and Technology

Source: GAO. | GAO-24-106633

^aWe also spoke with the Massachusetts State Automobile Dealers Association during these interviews.

To identify and describe NHTSA and FTC actions related to changes to competition and consumer choice in the vehicle repair market we reviewed relevant NHTSA and FTC documents, including reports and documents on FTC enforcement actions, and interviewed NHTSA and FTC staff.

We conducted this performance audit from February 2023 to March 2024 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

List of Addressees

The Honorable Jan Schakowsky
Ranking Member
Subcommittee on Innovation, Data, and Commerce
Committee on Energy and Commerce
House of Representatives

We are sending copies of this report to the appropriate congressional committees, the Secretary of Transportation, the Chair of the Federal Trade Commission, and other interested parties.

GAO Contact Information

For more information, contact: Elizabeth Repko, Director, Physical Infrastructure Issues, repkoe@gao.gov, (202) 512-2834.

Chuck Young, Managing Director, Public Affairs, YoungC1@gao.gov, (202) 512-4800.

A. Nicole Clowers, Managing Director, Congressional Relations, ClowersA@gao.gov, (202) 512-4400.

Staff Acknowledgments: Nancy Lueke (Assistant Director), Matthew Rosenberg (Analyst-in-Charge), Melissa Bodeau, John Bornmann, Alicia Cackley, Mark Canter, Emily Crofford, Melanie Diemel, Kelley Dugan, Gary Guggolz, Kay Kuhlman, Terrence Lam, Rob Marek, Sam Portnow, and Pamela Snedden.

Connect with GAO on [Facebook](#), [Flickr](#), [Twitter](#), and [YouTube](#). Subscribe to our [RSS Feeds](#) or [Email Updates](#). Listen to our [Podcasts](#).

Visit GAO on the web at <https://www.gao.gov>.

This work of the United States may include copyrighted material, details at <https://www.gao.gov/copyright>.

Endnotes

¹While relevant bills have been introduced in Congress, at the time of our review none had been enacted. Most recently, the Right to Equitable and Professional Auto Industry Repair Act (REPAIR Act) was introduced in the House of Representatives. This bill, if enacted, would require automakers to provide information and access to data needed for repairs to vehicle owners and independent repair shops. H.R. 906, 118th Cong. § 3(a)(1) (2023).

²2012 Mass. Acts Ch. 368.

³FTC, *Nixing the Fix: An FTC Report to Congress on Repair Restrictions* (Washington, D.C., May 2021).

⁴2020 Mass. Acts Ch. 386. Vehicle telematics systems provide continuous connectivity to long- and short-range wireless connections. They provide a broad range of features, including some supporting safety (such as the ability to report a crash), diagnostics (such as the ability to receive early alerts of mechanical issues), and convenience (such as hands-free access to driving directions or weather).

⁵Complaint, *Alliance for Automotive Innovation v. Campbell*, No. 1:20-cv-12090-DPW (Nov. 20, 2020).

⁶The 2014 Memorandum was signed by the Alliance of Automobile Manufacturers and Association of Global Automakers and, representing independent repair shops, the Automotive Aftermarket Industry Association and the Coalition for Auto Repair Equality. The 2023 commitment was signed by the Alliance for Automotive Innovation (which resulted from a merger between the Alliance of Automobile Manufacturers and Global Automakers) and, representing independent repair shops, the Automotive Services Association and the Society of Collision Repair Specialists.

⁷See *Maine Citizens Guide to the Referendum Election*, 37-40 (2023).

⁸*Auto Care Association Auto Care 2024 Factbook*. (Bethesda, MD, 2023).; *Auto Care Association Auto Care 2020 Factbook* (Bethesda, MD, 2019). The Auto Care Association is an association representing independent repair shops and other companies that support vehicle care. According to the Auto Care Association's estimates, the total vehicle aftercare market increased from about \$255 billion (nominal dollars) in 2014 to about \$360 billion (nominal dollars) in 2022.

⁹Dalal, Michal, IBIS World, *Auto Mechanics in the US*, Industry Report 81111 (April 2023).

¹⁰*Auto Care Association Auto Care 2024 Factbook* and *Auto Care 2020 Factbook*.

¹¹*Auto Care Association Auto Care 2024 Factbook* and *Auto Care 2020 Factbook*. The Factbooks report data for a number of types of vehicle service centers and retailers, including some not likely to conduct vehicle repairs such as car washes and hardware stores. These data include both revenues for services such as repairs as well as for parts sales. For this report, for revenues we included the following categories that we believe are most likely to compete with dealerships: general automotive repair; exhaust system repair; transmission repair; other automotive electrical and mechanical repair and maintenance; body, paint, and interior repair and maintenance; glass replacement shops; all other automotive repair and maintenance; tire dealers; and warehouse clubs and supercenters. For our data on the number of locations we included: general repair, tire dealers, specialty repair, oil change and lubrication, and independent body shops. According to staff with the Auto Care Association, these data include the number of locations and, therefore, any independent repair shop with multiple locations will be represented by each location individually.

¹²National Automobile Dealers Association, *NADA Data 2022*.

¹³We interviewed a total of nine automaker stakeholders, which included eight automakers and one automaker association. We interviewed a total of 14 independent repair stakeholders, which included four independent repair shops and 10 associations.

¹⁴According to officials with the one automaker that does not now provide information to such third parties, the company is in the process of reaching agreements to do so.

¹⁵The purpose of NHTSA vehicle safety complaints is for consumers to raise issues related to vehicle safety, not repair issues.

¹⁶McKinsey & Company, *A Turning Point for US Auto Dealers: The Unstoppable Electric Car* (September, 2021).

¹⁷Cox Automotive, *Path to EV Adoption: Consumer and Dealer Perspectives* (June 2023).

¹⁸IBIS World, *Industry Report 81111: Auto Mechanics in the US* (April 2023).

¹⁹GAO, *Vehicle Cybersecurity: DOT and Industry Have Efforts Under Way, but DOT Needs to Define Its Role in Responding to a Real-world Attack*, [GAO-16-350](#) (Washington, D.C.: March 24, 2016).

²⁰GAO-16-350.

²¹NHTSA, *Cybersecurity Best Practices for the Safety of Modern Vehicles*, (September 2022).

²²FTC, *Nixing the Fix*.

²³BMW of North America, Decision and Order, No. C-4555 (FTC Oct. 21, 2015).

²⁴Specifically, among other things, the letters put the recipient on notice that the Magnuson-Moss Warranty Act prohibits warrantors of consumer products costing more than five dollars from conditioning their written warranties on a consumer's use of any article or service which is identified by brand, trade, or corporate name, unless provided to the consumer for free or the warrantor has been granted a waiver by the Commission. See 15 U.S.C. §§ 2301-2312.

²⁵Auto Care Association *Auto Care 2024 Factbook*.

²⁶We did not interview all identified entities. Some entities declined to meet with us and some entities did not respond to our requests for meetings.