



American Association of
Motor Vehicle Administrators

Lifecycle
regulatory
INNOVATION
ADMINISTRATION
Compliance
safeguards
RECOMMENDATIONS



Multi-stage Vehicles Best Practices Guide



July 2026

VEHICLE COMMITTEE
MULTI-STAGE VEHICLE WORKING GROUP

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Executive Summary

As vehicle manufacturing continues to evolve, multi-stage vehicles (MSVs) have become increasingly common across commercial, recreational, and specialty vehicle markets. These vehicles—constructed in two or more manufacturing stages by different entities—present unique challenges for motor vehicle agencies (MVAs), manufacturers, dealers, insurers, and consumers. Variations in jurisdictional laws, policies, and practices related to licensing, titling, registration, and oversight of MSVs have led to inconsistent treatment, data inaccuracies, regulatory uncertainty, and increased risk to consumer protection.

To address these concerns, AAMVA convened the Multi-stage Vehicle Working Group (MSVWG), bringing together subject matter experts from member jurisdictions and key industry partners, including the National Highway Traffic Safety Administration (NHTSA), Recreational Vehicle Industry Association (RVIA), National Association of Motor Vehicle Boards and Commissions (NAMVBC), and National Insurance Crime Bureau (NICB). The MSVWG was tasked with examining the full lifecycle of MSVs and developing best practice recommendations to support consistent, accurate, and secure administration of MSV titling, registration, and reporting.

This document provides a comprehensive overview of MSV manufacturing, including the roles and responsibilities of first-stage, intermediate-stage, and final-stage manufacturers. It distinguishes MSVs from rebuilt, reconstructed, and specially constructed vehicles and highlights the administrative and regulatory challenges created by multiple manufacturer certificate of origin (MCOs), vehicle identification number (VIN) inconsistencies, fragmented documentation, and overlapping liability and warranty

responsibilities. The best practice also examines issues related to National Motor Vehicle Title Information System (NMVTIS) reporting, title branding, inspections, fraud mitigation, recall management, and stolen vehicle reporting as they uniquely apply to MSVs.

The central focus of the document is manufacturer and dealer licensing. Existing licensing and franchise frameworks were largely developed for traditional, single-stage vehicle production and do not always account for the realities of multi-stage manufacturing and sales. The MSVWG recommends MVAs review current laws and regulations to determine whether they adequately address MSV transactions and support continued innovation. Where gaps exist, MVAs should consider creating new or modified dealer or manufacturer licensing categories—such as specialty vehicle or converter licenses—while preserving franchise protections and ensuring robust consumer safeguards.

The document outlines specific best practices, along with associated benefits and implementation challenges, to help jurisdictions make informed policy decisions. These recommendations aim to improve regulatory clarity, promote consistency across jurisdictions, enhance data accuracy, strengthen consumer protection, support law enforcement and fraud prevention, and provide manufacturers and dealers with a clear and workable compliance framework.

Ultimately, this best practice is intended to serve as a flexible resource for jurisdictions as they evaluate and modernize their MSV programs. By adopting these best practices, MVAs can better balance innovation with safety, accountability, and consumer confidence in an increasingly complex vehicle marketplace.

Introduction

As part of AAMVA's ongoing efforts to support consistency and clarity in motor vehicle administration, the Multi-stage Vehicle Working Group (MSVWG) was convened to address concerns raised by members regarding registration and titling of multi-stage vehicles (MSVs). These concerns included variations in jurisdictional practices, questions about the regulation of entities selling MSVs, and the potential effects on warranties and recalls. The group was tasked with researching issues related to titling and registering MSVs and developing best practices to help motor vehicle agencies (MVAs) make more informed decisions regarding laws, rules, policies, procedures, and dealer licensing requirements.

MSVs introduce complex administrative and regulatory challenges because they are built by multiple manufacturers and move through several stages of construction, often resulting in identification, classification, and documentation inconsistencies, complicating accurate titling, registration, and safety compliance. Jurisdictions vary widely in how they treat these vehicles—some requiring full inspection and certification, others relying on limited manufacturer documentation—leading to uneven practices and data errors, particularly when vehicle identification numbers (VINs) or body styles do not fully reflect the completed build. These issues are compounded by fragmented recordkeeping across the vehicle's lifecycle, overlapping liability and warranty responsibilities, and differing dealer and manufacturer licensing requirements. The lack of federal standards for manufacturer certificate of origins (MCOs), with some MSVs receiving a single MCO and others receiving one from each manufacturer, further complicates MVA processing and makes it difficult to identify

missing ownership documents at the time of initial title or registration issuance.

The MSVWG brought together experts from multiple jurisdictions and key industry organizations to develop best practices for titling and registering MSVs.

Contributors from industry partners from National Highway Traffic Safety Administration (NHTSA), Recreational Vehicle Industry Association (RVIA), National Association of Motor Vehicle Boards and Commissions (NAMVBC), and National Insurance Crime Bureau (NICB) played a vital role in shaping this comprehensive and collaborative guidance.

What Is a Multi-stage Vehicle?

A vehicle is manufactured by the original equipment manufacturer (OEM) in one of two ways: complete or incomplete. A vehicle is considered complete when certified as compliant with the Federal Motor Vehicle Safety Standards (FMVSS), either by the OEM or another final-stage manufacturer.

An MSV is built in multiple stages by different manufacturers. The process usually starts with a manufacturer building an incomplete vehicle, such as a chassis cab, which may include components such as chassis, frame, engine, fuel system, transmission, drivetrain, suspension, wheels, brakes, and vehicular electrical system. Another manufacturer(s) completes the vehicle by adding the necessary components, such as the body or specialized equipment, to make it ready for its intended use. For trailers, it is common for one manufacturer to produce the chassis, frame, and suspension system, while another manufacturer supplies the cargo-carrying, work-performing, or load-bearing components. MSVs are commonly used for specific purposes where customization is essential.

Here are a few examples:

1. **Motorhomes:** Motorhomes are built in multiple stages, starting with a chassis with living quarters and amenities added.
2. **Ambulances:** Like motorhomes, ambulances start with a basic chassis, with specialized equipment and medical equipment added by another manufacturer.
3. **Commercial-use vehicles and/or trailers:** The chassis is produced by one manufacturer, and the cargo box or other specialty equipment is added by another.
4. **Fire trucks:** These vehicles often start with a heavy-duty chassis; the firefighting equipment, ladders, and other specialized components are added by a different manufacturer.
5. **Buses:** Some buses, particularly those used for public transportation, are also built in stages. The chassis and engine are produced first, with the passenger seating and other interior components added.

Some Examples of Multi-stage Vehicles



Class A Motor Home



Class B Motor Home



Class C Motor Home



Commercial Vehicle



Fire Truck

What Are the Stages?

The multi-stage process allows for a high degree of customization, enabling manufacturers to create vehicles meeting specific needs and preferences.

Here's how the multi-stage process works:

1. **First Stage:** The initial manufacturer, often referred to as the “incomplete vehicle manufacturer,” builds the chassis, frame, engine, fuel system, transmission, drive train, suspension, wheels, brakes, and vehicular electrical system. This stage results in a vehicle capable of being driven but is not yet a final product.

A first-stage manufacturer provides an Incomplete Vehicle Document (IVD), containing the manufacturer's identification, VIN details, Gross Vehicle Weight Rating (GVWR) and Gross Axle Weight Rating (GAWR), and statements of compliance or noncompliance with federal safety standards. The IVD may reference additional engineering or design materials, which subsequent manufacturers may rely on for final certification.

2. **Intermediate (Second) Stage:** An intermediate-stage manufacturer, or converter, may make necessary modifications to the frame, axles, or driveline or may upgrade the mounting provisions, electrical system, or hydraulic system to prepare the vehicle for the final stage manufacturer.

An intermediate-stage manufacturer must pass the original IVD to the next manufacturer and, if any modifications affect its validity, issue an addendum listing changes along with a certification of accuracy. This ensures all subsequent manufacturers, including the final-stage manufacturer, can rely on the updated documentation for compliance certification.

3. **Final Stage:** The final-stage manufacturer, or assembler, is responsible for the final assembly

and completion of the vehicle, installing the body and functional components defining the vehicle's purpose. The final-stage manufacturer is responsible for certifying the vehicle complies with the applicable manufacturing standards.

The final-stage manufacturer is responsible for certifying the completed vehicle complies with applicable safety standards.

It is more common for a vehicle to be built by two manufacturers—first stage and final stage—than by three manufacturers.

Quite often the terms *upfitter* and *converter* are used in the realm of MSVs. Upfitters, a type of final-stage manufacturer, add components to a vehicle, typically to adapt it for a specific commercial, vocational, or mobility purpose. Converters add equipment to or modify a completed vehicle after the original manufacturer certifies but before the first retail sale. Converters do not issue a new VIN and only recertify the vehicle if the modifications affect FMVSS compliance.

Differences Between Multi-stage, Rebuilt, and Reconstructed Vehicles

Understanding the distinction between MSVs, reconstructed vehicles, and rebuilt vehicles is essential for jurisdictions when issuing titles because the manufacturing process and documentation requirements may differ significantly depending on the jurisdiction's laws, rules, and policies.

Vehicles built by multiple manufacturers—first, intermediate, final stage—before a customer takes delivery are different than reconstructed or rebuilt vehicles where modifications are made to a titled and/or registered vehicle after a customer takes delivery.

When issuing a title or registration for a true MSV, most jurisdictions will treat it as a new vehicle. When issuing a title and/or registration for a vehicle where modifications are made after title and/or registration issuance, most jurisdictions will follow their processes

for specially constructed motor vehicles. For more information, see [AAMVA Best Practices for Title and Registration of Rebuilt and Specially Constructed Vehicles](#) and [AAMVA Best Practices for Title and Registration of Reconstructed and Replica Vehicles](#).

Identifying the true makeup of a vehicle provides the ability for future purchasers, insurers, and lenders to be fully informed on the history of the vehicle providing for enhanced consumer protection.

Recall and Warranty Issues

The National Traffic and Motor Vehicle Safety Act of 1966 empowers NHTSA to enforce FMVSS, requiring all vehicles to be certified before registration or operation. The final-stage manufacturer bears legal responsibility for certification and ensuring FMVSS compliance.

The multi-stage process creates complexity around warranties, liability, and consumer transparency, particularly because buyers typically interact only with the dealer and may be unaware of which components were added at each stage or what warranty registration steps are required at the time of purchase. To address this, regulations require first-stage manufacturers to provide an IVD to accompany the vehicle through each manufacturing stage, detailing weight ratings, applicable vehicle types, and the FMVSS standards relevant to each, ultimately helping the final-stage manufacturer and dealer fulfill its certification and consumer communication responsibilities. More information on recall and warranty information can be found in the Appendix section of this document.

Challenges Related to Multi-stage Vehicles

MSVs present significant challenges because of the layered involvement of multiple manufacturers, regulatory agencies, and insurers, all of which must coordinate to ensure accurate title issuance, registration, safety compliance, and consumer protection. Identification and classification are complicated because a vehicle may pass through several

stages of construction, making it difficult to assign a single make or type, and in some cases, the VIN may not fully represent the completed build.

MVAs also follow varying policies and procedures, with some treating MSVs as entirely new vehicles requiring inspection and certification but others accepting limited manufacturer documentation, creating inconsistency in how these vehicles are titled and registered.

Documentation is another complex factor because accurate records must be maintained across the entire lifecycle of the vehicle; discrepancies can lead to gaps in proof of compliance with safety and emissions standards. Liability and warranty concerns further add to the challenge because multiple manufacturers may be involved in the vehicle's construction, raising questions about responsibility for defects and coverage under overlapping warranties. Finally, dealer and manufacturer licensing requirements must be carefully managed to uphold industry standards and ensure proper consumer protections in the sale and title and registration of MSVs.

MSVs may have one MCO issued by each manufacturer. With no federal guidelines related to the issuance of MCOs, the determination is made by

each manufacturer. The inconsistency complicates title and registration issuance for jurisdictions and may lead to data errors on documents issued (e.g., a cab and chassis vs. a recreational vehicle [RV] body style). In addition, it limits the ability for MVAs to identify when ownership documents may be missing at time of initial issuance of title and/or registration.

An additional challenging component of MSVs is related to NMVTIS reporting requirements. It is imperative that correct and complete information is submitted to and maintained in the NMVTIS system to allow MVAs and consumers to have access to the complete histories of their vehicles. Under federal NMVTIS reporting requirements, MVAs are not required to report title issuance for commercial trucks weighing more than 10,000 pounds, which account for most MSVs. Inclusion of all non-trailer MSV data in NMVTIS would provide jurisdictions with additional information necessary for more accurate and complete data collection related to title and registration issuance for used MSVs.

This document provides an in-depth view of MSVs and provides recommendations, benefits, and challenges for best practices for jurisdictions to utilize when forming their own MSV programs.

Best Practices — Presentation of Paperwork

Manufacturer Certificates of Origin: What Motor Vehicle Agencies Want and What Manufacturers Provide

Description and Background

MSVs may have one or more MCO issued for the complete vehicle depending on the manufacturers involved and the work completed at each stage. Some second-stage manufacturers do not install their own bodies on incomplete vehicles; rather, they alter the first-stage manufacturer's existing body. In this case, there will be the first-stage manufacturer's MCO and VIN only. There are no federal rules requiring second-, intermediate-, or final-stage manufacturers provide an MCO, or supplemental MCO, for title and registration purposes; these are jurisdiction-level requirements.

Manufacturers are required to adhere to federal certification label requirements.

Example

Certification label

Certification from OEM (first stage): This should match the first MCO.

MFD. BY FORD MOTOR CO.			
DATE: XX/XX/XX	GVWR: XXXX KG (XXXX LB)		
FRONT GAWR: XXXX KG (XXXX LB)	WITH REAR GAWR: XXXX KG (XXXX LB)		
XXXXXXXXXXXXXXXXXX	TIRES XXXXXXXXXXXXXXXXXXXX	WITH	
XXXXXX	RIMS XXXXXXXX	TIRES	
AT XXXX kPa/ XXX PSI COLD	AT XXXX kPa/ XXX PSI COLD	RIMS	
THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY AND THEFT PREVENTION STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.			
VIN: XXXXXXXXXXXXXXXXXXXX		XXXXX	
TYPE: XXXX		XXXXX	
			
EXT PNT: XX	XXXXXX	RC: XX	DSO: XXXX
WB	INT TR	TP/PS	R
AXLE	TR	SPR	XXXX
XXX	XX	XXX	X
XXX	XXX	XXX	XXXX
XXXXXXXXXXXXXXXXXX XXX XXXX-XXXXXXX-XX			

Certification from the second-, intermate-, or final-stage manufacturer: In place of the MCO, this indicates all information normally on the second- or final-stage document; this satisfies the federal requirement.

EXAMPLE CERTIFICATION LABEL			
MANUFACTURED BY: XXXXXX TRAILERS, INC. IN U.S.A.			
DATE: XX/XX/XX			
GVWR	5761 KG (12,700 LB)	GAWR REAR	2304 KG (5,080 LB)
GAWR FRONT	2304 KG (5,080 LB)	TIRES	ST225/75R15(D)
TIRES	ST225/75R15(D)	RIMS	15X6J
RIMS	15X6J	COLD INF. PRESSURE	447 KPA (65 PSI) SINGLE
COLD INF. PRESSURE	447 KPA (65 PSI) SINGLE		
THIS VEHICLE CONFORMS TO ALL APPLICABLE US FEDERAL MOTOR VEHICLE-SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.			
Vehicle Identification No.:		XXXXXXXXXXXXXXXXXX	
Vehicle Type:		Trailer	

Best Practice or Recommendations

More than one MCO issued:

RVs, including motor homes, ambulances, and school buses, most often have MCOs issued by the manufacturers at each stage of completion. All MCOs issued should be presented or required for issuance of a title or registration.

One MCO issued:

Commercial vehicles, in which the cab chassis or cutaway vehicle has equipment installed on the back by a converter or upfitter, most often have a single MCO available from the first-stage manufacturer. Accompanied by the documentation identified below, for purposes of documenting the final-stage body style and GVWR, the single MCO issued should be presented or required for issuance of a title or registration.

Copies or pictures of the certification labels or a copy of the NHTSA manufacturer identification record provided by the final-stage manufacturer, upfitter, or converter.

Or

If the jurisdiction has a safety inspection program available in their state, evidence the vehicle has been inspected with the body style documented.

Benefits to Implementation

Consistent requirements across jurisdictions ease the process for dealers and manufacturers and improve the data available on a title or registration. Improved data positively impacts law enforcement, MVA staff, and other stakeholders.

Challenges to Implementation

Two differing requirements may cause confusion for title or registration issuing staff; ongoing education and monitoring may be required to ensure a full understanding and consistent application are occurring. In addition, some jurisdictions may require legislative changes to adopt this recommendation.

Who Can Reassign the Manufacturer Certificate of Origin?

Description and Background

The OEM, or first-stage manufacturer, issues the MCO to the purchasing dealer. Some jurisdictions may require the dealer to be franchised to sell the make of vehicle.

The intermediate- and final-stage manufacturers may also produce MCOs to be used for title and registration purposes.

Depending on jurisdictional laws or rules, the MCO may only be reassigned by a licensed motor vehicle dealer authorized to sell the specific franchise or a dealer with special licenses. In the final stage, the manufacturer may only be able to assign the MCO to dealerships authorized to sell their products.

These requirements may create complications when an intermediate- or final-stage manufacturer purchases an incomplete vehicle and must transfer ownership to

the selling dealer or consumer. To transfer ownership using the MCO, the transferring party may need to be franchised for the make of the incomplete vehicle, which may cause challenges.

Best Practice and Recommendations

Recreational Vehicles, Motor Homes, Ambulances, and School Buses – multiple MCOs issued:

All MCOs for incomplete vehicles should be reassigned to the next-stage manufacturer. The final-stage manufacturer should reassign all MCOs to the dealer. The dealer may then reassign the MCOs to the consumer.

Commercial Vehicles—single MCO issued:

The dealer purchasing the incomplete vehicle will reassign the MCO for the completed vehicle to the consumer if they have mediated the work completed by the converter or upfitter. If the converter or upfitter purchases the incomplete vehicle from the dealer for resale to a consumer, the converter or upfitter should apply for a title or registration for the complete vehicle before selling to the consumer.

Jurisdictions may want to consider requiring a specific class of licensure for converters and upfitters. A converter or upfitter license could provide authority to the license holder to reassign a first-stage MCO to a licensed dealer regardless of franchise status.

Benefits to Implementation

These reassignment processes allow for more efficiencies in operation when vehicles move among vehicle manufacturers, converters, and upfitters and assure that MCO information accurately reflects ownership history. The dealer assures that all steps in the build process are completed by securing the MCO(s) and confirms the required FMVSS certification labels to verify the vehicle's completion are present prior to transfer to a consumer. The

jurisdiction then confirms, upon titling and registration, that the dealership is permitted to sell this make and has the right to reassign the MCO.

Challenges to Implementation

Several legislative changes may be required in jurisdictions. These changes may include (1) allowing dealers to obtain a title or registration in their name (dealer title or registration) for the incomplete vehicle,

(2) eliminating need for the second- or final-stage manufacturer MCO if the intermediate- or final-stage manufacturer does not provide one, (3) issuance of upfitter or converter licenses, and (4) allowing licensed upfitters or converters to reassign MCOs for first-stage vehicle makes where they do not hold a franchise. Additionally, it may not be immediately clear to MVA staff if more than one MCO is required to be submitted with the title or registration application.

Registration and Titling

VIN, Make, Model, and Year Issues

Description and Background

Vehicles manufactured in stages are assigned a VIN by the initial manufacturer. The VIN will follow the vehicle throughout the manufacturing process and subsequently be used by jurisdictions to title and register the vehicle. The MSVWG has identified several concerns with this process because the initial VIN assigned to the vehicle, in some cases, will not reflect the completed vehicle's make and model year.

NHTSA requires initial manufacturers to add the make code in positions 4 to 8 on the VIN. At the time of vehicle production, initial manufacturers may not know which final-stage manufacturer will complete the vehicle. Additionally, the model year, found in the 10th position of the VIN, will match the model year of the chassis but not necessarily the model year of the completed vehicle. Some final-stage manufacturers will purchase a chassis from a first-stage manufacturer in bulk for final completion. These vehicles can be completed a year or more from when the VIN was first issued, making the final model year of the vehicle different than what is coded in the VIN.

NHTSA requires the first-stage manufacturer to issue the VIN; requiring the final-stage manufacturer to issue the VIN is not an option. Having two VINs for one vehicle may cause confusion, titling errors, and/or fraud.

Examples

1. Jurisdiction A is processing a title or registration application for an RV. There are two MCOs submitted with the title or registration application. The VIN, make, and model year

are different on the MCOs; the first-stage MCO represents the incomplete vehicle, and the final-stage MCO represents the completed vehicle.

- Jurisdiction A MVA staff are presented with full details to be used for title and registration issuance.
2. Jurisdiction B is processing a title or registration application for a commercial vehicle. One MCO from the first-stage manufacturer is submitted with the application. The MCO reflects the VIN, make, and model from the incomplete vehicle.
- Jurisdiction B enters the VIN, make, and model year from the MCO and updates the body style to reflect the final-stage vehicle. MVA staff may erroneously miss the body style change or delay the title or registration issuance process to gather the correct information.

Additionally, transfer of recreational or commercial MSV titles or registrations from one jurisdiction to another may result in errors and delayed processes when only the title or registration from the previous jurisdiction is presented with no indication the vehicle is an MSV.

Updates to NMVTIS from jurisdictions A and B will reflect the VIN, model year, and make as entered into the jurisdictions' database.

Recommendations and Best Practice

Jurisdictions should report title issuance for all MSVs to NMVTIS.

During title and registration issuance and submission of data to NMVTIS for RVs, including motor homes, ambulances, and school buses:

- The VIN reflected on the first-stage manufacturer's MCO should be the primary VIN recorded and submitted to NMVTIS. Additional VINs should be recorded in the jurisdictions' records and be part of the data elements on title or registration documents issued.
- The make as displayed on the final-stage manufacturer's MCO should be the make recorded and submitted to NMVTIS.
- The model year as displayed on the final-stage manufacturer's MCO should be the year recorded and submitted to NMVTIS.
- The body style best representing the completed vehicle should be recorded in the jurisdictions' records and be part of the data elements on title or registration documents issued.
- A flag indicating the vehicle is an MSV should be recorded and submitted to NMVTIS.

During title and registration issuance and submission of data to NMVTIS for commercial vehicles (one MCO presented):

- The VIN reflected on the first-stage manufacturer's MCO should be the primary VIN recorded.
- The make as displayed on the first-stage manufacturer's MCO should be the make recorded.
- The model year as displayed on the first-stage manufacturer's MCO should be the year recorded.
- The body style best representing the completed vehicle should be recorded in the jurisdictions' records and be part of the data elements on title or registration documents issued.
- A flag indicating the vehicle is an MSV should be recorded and submitted to NMVTIS.

Benefits of Implementation

By implementing this best practice, MSVs will be reported consistently to NMVTIS, allowing for the creation and maintenance of an accurate and complete vehicle history and reducing duplicate VIN pointers. This will also allow for consistency across jurisdictions benefitting stakeholders, including jurisdictions issuing subsequent title or registration documents for a previously titled or registered MSV. Availability of the complete history on NMVTIS will reduce errors when a jurisdiction is transferring a title or registration from one jurisdiction to another.

Challenges to Implementation

When using a VIN decoder system, it may be necessary to override and change the year, make, and body style to adopt this best practice. Also, if a jurisdiction does not provide NMVTIS with title updates for MSVs, the history of the vehicle will not be complete and may require additional investigation by jurisdiction NMVTIS help desks.

Updates to NMVTIS and jurisdiction systems may be cost prohibitive, may be impacted by limited availability of resources, and require coordination. Updating title and registration documents requires system changes and communication with stakeholders and may cause space issues on printed documents.

When law enforcement decodes a VIN for an MSV, the decoder may show a different vehicle make and model year than the vehicle title or registration indicates or how the vehicle appears. Law enforcement should check all information, including vehicle labels, when determining the vehicle details.

The current process for issuing make codes requires the make to be identified in the VIN. When a final-stage manufacturer uses a make on the MCO not included in the VIN, the make code will not reflect the MCO make name. The [National Crime Information Center \(NCIC\) Make Code Manual](#) can be found on the AAMVA website.

Vehicle Identification Number

Description and Background

MSV manufacturers may utilize different VINs for each component of the vehicle built, or they may use the same VIN for all components; the MCOs issued by each manufacturer provide the VIN used for the component(s) each provided for the vehicle.

If one VIN is assigned for all components of the MSV, MVAs will use the assigned VIN. If the manufacturers assign different VINs to their components, some jurisdictions use the first-stage VIN, while others may use the final-stage VIN. Determining which MCO was issued first can be done by comparing dates on MCOs (the oldest date should be the first stage), or an incomplete or body style cab and chassis may be listed on the first-stage MCO.

Best Practice and Recommendations

Jurisdictions should utilize the first-stage VIN as the primary VIN for titling and registering the vehicle. VINs assigned by intermediate- or final-stage manufacturers should be recorded in the jurisdiction title and registration files along with a flag or internal indicator identifying the vehicle as MSV. All VINs and the MSV indicator should be printed on titles or registrations issued.

Benefits to Implementation

Capturing all VINs and adding a specific indicator for MSVs enables complete and accurate identification of the completed vehicle. This allows law enforcement to immediately recognize an MSV and understand multiple VINs, and certification labels should be present as information strengthening investigations involving fraud, theft, and carrier enforcement issues. Insurance companies, lenders, and similar stakeholders also gain a more comprehensive understanding of the vehicle's construction, value, and use. In addition, including the secondary VIN improves the ability of other jurisdictions to identify the vehicle and issue

accurate titles and registrations if the vehicle is later registered elsewhere.

Challenges to Implementation

The implementation of this recommendation presents certain challenges, including the financial cost and limited availability of resources required by MVAs to update their title and registration systems to accommodate a second VIN or flag. Additionally, the collection of supplementary data elements may increase the data entry workload for MVA staff, adding to transaction time.

Title Brands for Multi-stage Vehicles

Description and Background

Title brands are permanent notations placed on a vehicle's title to reflect certain conditions or events in the vehicle's history. Common brands include, but are not limited to, salvage, rebuilt, reconstructed, flood damage, actual mileage, or not actual mileage.

The primary objectives of title branding are to prevent fraud, promote safety, support law enforcement, and maintain market integrity. In essence, these objectives serve to protect the public.

Protecting consumers through the proper application of brands can be seen as a two-step process. The first step is to ensure all applicable vehicles are properly branded. The second step is to limit the circumstances under which a brand may be removed.

Best Practice and Recommendations

When issuing a title for an MSV, the jurisdiction responsible for title or registration issuance should capture and carry forward all applicable brands from source documents and NMVTIS records associated with all VINs of the completed vehicle and its component stages.

Benefits to Implementation

Capturing and carrying forward brands associated with all VINs of an MSV ensures full vehicle history is

available to consumers, insurance companies, lending institutions, law enforcement, and other parties with an interest in the vehicle. Comprehensive vehicle history information is a critical element in achieving effective consumer protection.

Challenges to Implementation

Capturing and carrying forward brands may require changes to the jurisdiction's laws, rules, or policies. In addition, jurisdictions may be required to update their title or registration systems to capture brands for MSV, which, in some cases, may be limited because of financial or resource constraints.

Vehicle Inspections

Description and Background

When dealing with MSVs, inspections may need to be considered to ensure that the proper data elements, including VIN, year, make, model, body style, and GVWR, are reflected on the titles and registrations issued. Title and registration data elements have a wide-ranging impact for financial institutions, taxation authorities, and insurance companies. In addition, law enforcement is dependent on GVWR data being correct to ensure proper compliance with commercial driver licensing requirements and load restrictions.

Best Practice and Recommendations

Jurisdictions should have the authority to perform inspections of MSVs to ensure accuracy of title or registration data elements, the completeness of the vehicle, and to verify the VIN(s). This would not include previously titled or registered vehicles unless the customer is requesting alterations to the data elements listed on the current title or registration document.

Benefits to Implementation

Title or registration data elements are based on the actual physical makeup of the vehicle as confirmed by the inspection. The manufacturer labels on the vehicle viewed during the inspection provide confirmation of

the data to be used for title or registration issuance. MVA staff processing title requests do not determine the data elements from paper documents, which may be incomplete. This ensures more continuity for the vehicles being titled or registered.

Challenges to Implementation

MVAs may need to seek regulatory or legislative authority to conduct inspections. Funding and additional staffing for an inspection program may be required. Inspection sites to facilitate inspections may be cost prohibitive.

Special Considerations

Description and Background

Alterations to previously titled and registered vehicles may require special considerations; capturing the vehicle's updated data in the jurisdictions' records is important to the process. There are a few scenarios in which this could apply.

1. A glider kit vehicle is a commercial motor vehicle combining a new cab and a new frame with a used engine, transmission, and drive axle. Under 49 C.F.R. §571.7(e), a glider kit vehicle is not considered newly manufactured. For the resulting vehicle to be deemed legal and road-ready, it must meet specific certification requirements, primarily concerning emissions standards and the reuse of significant components from the original truck. This often necessitates documentation from the glider kit manufacturer to confirm regulation compliance.
2. Salvage branded vehicle, the chassis is not operable, but the equipment installed on the chassis is in good working condition and could be removed and installed on an unbranded chassis. The jurisdiction system would show that the VIN of the equipment would match the now salvaged vehicle and could need to be updated to show it's been removed and placed on a road safe vehicle.

Example

Salvage vehicle: The vehicle has been deemed salvage, but the equipment on the back is still in working condition, is highly valuable, and can be moved to another vehicle. An example is mobile drilling equipment.

Glider kit: Use of a form to record all components modified during this process provides data necessary for an updated title. A notable example from Nebraska showcases a streamlined approach to gathering the necessary information for updating titles or registrations and vehicle types.

**NEBRASKA**
DEPARTMENT OF MOTOR VEHICLES

**Affidavit of Final Assembler
of Motor Vehicle
Glider Kit**

Application for certificate of title for the following described glider kit motor vehicle is being made:

(Year)	(Make)	(Model)	(VIN)

The undersigned, being duly sworn, depose or affirm that the following is true about the above described glider kit:

- Applicant is the final assembler of the glider kit. If final assembly was performed by a dealer, provide name and number of dealership: Dealer Name: Dir. Number:
- The major component parts used in the assembly were removed from the following titled motor vehicle(s) and installed in the above described glider kit. If the motor vehicle(s) from which the component parts were removed are being junked at this time, the title(s) is enclosed. If junked at a later date; I understand the law requires the surrender of the title(s) any County Treasurer, or to the Nebraska Department of Motor Vehicles

(Year)	(Make)	(Model)	(VIN)	(Title Number)

OR

- The major component parts used in the assembly of this glider kit were purchased and were not obtained through fraudulent or illegal means. (complete section below)

COMPONENT PARTS: (If completed, submit the Bill of Sale for the engine and transmission)

Engine	Make		Model		Serial Number	
Transmission	Make		Model		Serial Number	
Rear Axle:	Make		Model		Serial Number	
Suspension	Make		Model		Serial Number	
Fifth Wheel	Make		Model			

DATED this _____ day of _____, _____.

(Applicant)

Subscribed and sworn to before me this _____ day of _____, _____.

(Notary Public or Designated County Official)

Note: This affidavit is required to be submitted with an Application for Certificate of Title for a Glider Kit along with proper proof of ownership.

Revised 9/2018

Best Practice and Recommendations

MVAs should establish a defined business process to update their systems and issue titles for glider kit vehicles. This process should include a state-approved form completed by the final manufacturer capturing key details about the altered vehicle, such as year, make, model, and VIN. The form should also require the equipment assembler to provide their company name and dealer license number (if applicable) to demonstrate their authority to perform the work. If equipment was taken from a titled or registered vehicle, the form should document the original vehicle's year, make, model, VIN, and title and registration number. If the equipment is not sourced from a prior vehicle, the form should instead record the replaced components, including their makes, models, and serial numbers. The applicant must sign the form, and a notary section should be included to deter fraud. The form may also be designed to address salvage scenarios when equipment is transferred from the old VIN to the new VIN.

Benefits to Implementation

When capturing this information, the MVA records will reflect the most current detail of the vehicle, which is helpful for law enforcement, safety inspections, weigh stations, and other enforcement agencies requiring the information.

Challenges to Implementation

The challenge in implementing the best practice is that MVAs may lack a way to indicate in their records that a vehicle has been altered by updating the equipment to a different vehicle previously titled or registered. MVAs who have modernized their systems may not have included this type of business process to collect this data, which could incur additional costs and time for programming. MVAs that have not undergone modernization and still use older software may lack the means to document this process within the outdated software. In addition, some jurisdictions may require

that legislative updates utilize this recommended business process.

Overriding Data from Vehicle Identification Number Decode

Description and Background

Most MVAs rely on VIN decoding software during title or registration issuance. MVAs use the software to decode the first-stage VIN inserting the year, make, model, and body style associated with the first-stage components. Recording the final-stage year and make may require MVAs to manually alter or override vehicle details populated by the VIN decoder. Allowing such modifications introduces the potential for both inadvertent errors and intentional misconduct MVA staff.

Best Practice and Recommendations

Title or registration issuance systems should implement a second-level approval requirement when a title or registration issuance staff alters or overrides vehicle data prepopulated by VIN decoding software. This second-level review should be conducted by a central office help-desk team to ensure accuracy, accountability, and compliance with established policy.

Benefits to Implementation

Adding a second-level approval step reduces the likelihood of clerical errors and deliberate misrepresentation of vehicle data intended to benefit a vehicle owner. Centralizing the override approval process minimizes opportunities for internal collusion and reinforces separation of duties among staff.

Challenges to Implementation

Jurisdictions may face financial and staffing limitations to updating their title or registration issuance systems and to managing the additional oversight workload. Delays in processing may occur if second-level approvals are not completed in a timely manner, potentially impacting customer service delivery.

Fraud Detection and Mitigation

Auditing Multi-stage Vehicle Transactions

Description and Background

Auditing MSV transactions is essential because these vehicles often move through several manufacturers, creating multiple points where key information—such as value, components, or ownership details—can be misreported or overlooked. Without oversight, jurisdictions face a higher risk of undervalued transactions, reducing tax revenue; inaccurate reporting, affecting insurance rating and coverage; and incomplete documentation, obscuring the true configuration or worth of the finished vehicle. MSVs also create opportunities for errors or intentional omissions related to equipment transfers, salvage components, or missing MCOs, all of which can lead to improper titling and registering, fraud, or gaps in safety and compliance records. A structured audit process helps ensure transparency, protects revenue, supports accurate insurance and lending decisions, and maintains the integrity of the jurisdiction's vehicle records.

Best Practice and Recommendations

A random sample of MSV transactions—generally 10% to 20% of all such vehicles titled or registered—should be audited as part of each MVA's regular review cycle. Audits should include collecting copies of MCOs, photographs of the completed vehicle (if required), and documentation of the audit findings. For example, if law enforcement and the MVA collectively process 100 MSVs in a year, 10 to 20 of these transactions should have their inspection and titling or registration paperwork reviewed to ensure consistency between agencies and to confirm

vehicles are being titled and registered accurately and appropriately.

Benefits of Implementation

This approach enhances compliance across both inspection and title and registration processes, promotes consistency across agencies and jurisdictions, and creates opportunities for training and continuous improvement aligned with the best practices outlined in this document.

Challenges to Implementation

Implementing this audit process may require additional staffing resources to conduct the reviews and make final determinations based on the collected documentation.

Reporting a Stolen Multi-stage Vehicle

Description and Background

According to the NICB, more than 659,000 vehicles were reported stolen in 2025.¹ Proper reporting and description of vehicles are key to assisting law enforcement to recover reported stolen vehicles.

Example

A vehicle owner reports an RV stolen to a law enforcement agency. The reporting agency enters important data about the RV, including the VIN, into the NCIC. If the VIN is reported incorrectly, the stolen vehicle stands a lesser chance of being observed as stolen by law enforcement.

¹ <https://www.nicb.org/news/news-releases/us-vehicle-thefts-experience-historic-decline>

Best Practice

Create theft reporting standards ensuring consistency with recording vehicle identifiers, especially the true VIN. Information should include but not be limited to the following.

1. Personal information

- Your full name, contact information, and proof of ownership (such as registration, title, or insurance card)

2. Vehicle information

- **Make, model, and year** of the vehicle
- **Color** of the vehicle
- **VIN**
- **License plate number**, including state and the number on the plate
- **Mileage:** An estimate of the mileage can be helpful.

3. Description of the incident

- **When and where the car was stolen:** Provide the time and location where you last saw the car or where you believe it was taken.
- **Circumstances of the theft:** This is whether the car was taken from your home or a parking lot or if you were the victim of a robbery.
- **Witnesses:** Any witnesses who might have seen the theft happen or might have additional information.

4. Additional details

- **Security features:** Information about any anti-theft devices in the car (e.g., GPS tracking, steering wheel lock, or alarm system)

- **Items inside the car:** Any items in the car, especially valuable or identifiable items
- **Potential suspects:** if you have any suspects or if there was suspicious activity around the time of the theft

The reporting law enforcement agency should ensure the VIN matches the reported VIN from documents such as a title, registration, and/or NMVTIS vehicle file.

With regards to MSVs, the law enforcement agency receiving a stolen vehicle report should make every effort to obtain all vehicle details. Details about the make and model are important because they may not match the make and model described by the title or registration. For example, a 2022 Ford F-350 coming from a first-stage manufacturer could become a 2022 Chateau 22R after leaving a second-stage manufacturer.

Benefits of Implementation

Detailed information gathering eliminates questions and ensures accurate reporting of stolen vehicles. The more information a law enforcement officer has on the road, the higher the likelihood stolen vehicles are recovered.

Challenges to Implementation

There are nearly 18,000 law enforcement agencies in the United States.² Standardized training of the nearly 750,000³ U.S. law enforcement officers could prove challenging. Also, owners reporting their stolen vehicles often don't possess detailed documents to show all possible identifying numbers or information of a vehicle.

² https://www.justice.gov/d9/policing_101_content.pdf

³ <https://nleomf.org/memorial/facts-figures/law-enforcement-facts>

Jurisdiction Manufacturer and Dealer Licensing

Licensing Background

Most jurisdictions license businesses involved in the retail sale of motor vehicles and trailers, and many license the manufacturer or supplier of vehicles to new motor vehicle dealers. Businesses selling MSVs may require a motor vehicle dealer license issued by the jurisdiction where they are located. The required license type is typically based on the way vehicles are acquired and sold. These laws and regulations generally serve a dual purpose. They serve a consumer protection and safety role to ensure the sale of road-legal and road-worthy vehicles while also regulating the relationship between new motor vehicle dealers and their suppliers. In the area of MSVs, the business licensing component is more complicated because multiple businesses may be involved in manufacturing the completed vehicle prior to selling the vehicle to a consumer.

What Determines the Type of License Required and Why

Description and Background

State franchise laws generally define a new vehicle as one not the subject of a retail sale. In some jurisdictions, the sale of the underlying chassis to an uplifter, converter, or second-stage manufacturer is not considered an initial retail sale. Among jurisdictions responding to the AAMVA survey on this issue, the majority appear to require a new MSV be sold through a licensed franchised dealer.

Used motor vehicles are typically defined as those that have previously been the subject of a retail sale. In most jurisdictions, sellers of aftermarket MSVs are only required to hold an independent or used motor vehicle dealer license. Additionally, many jurisdictions

provide an exemption when an individual sells fewer than five vehicles within a calendar year.

Although simply differentiating new and used by whether the vehicle has been the subject of a retail sale seems to be the simplest and most logical best practice, it is just the start of a bigger discussion of what constitutes a retail sale. This can vary among the jurisdictions based on many different factors, including the purchase of the chassis or the mileage on the vehicle.

Examples of Licensing Among Jurisdictions

JURISDICTION A

- A new motor vehicle dealer license is required if a vehicle or chassis is shipped directly from the manufacturer to the upfitter. This is because the chassis has not been the subject of a prior retail sale before upfitting and subsequent sale as an MSV.
- A used motor vehicle dealer license is required if a vehicle or chassis is purchased by an upfitter at retail from an authorized or franchised new motor vehicle dealer for the chassis maker. This is because the franchised dealer makes the initial retail sale of the vehicle (to the upfitter manufacturer or to the upfitter dealer), and the subsequent sale after upfitting or conversion is not the initial retail sale.
- No motor vehicle dealer licensing is required if an end user previously purchased the vehicle or chassis and is only paying for the special equipment and its install. This is because, in this example, there is no sale of a vehicle occurring—only the sale of special equipment and the labor cost of install.

JURISDICTION B

Jurisdiction B classifies MSVs as “Specialty Vehicles” and has a specific “Specialty Vehicle Dealer” license category instead of using the traditional “new” or “used” licensing framework. This represents a regulatory landscape created for the express purpose of licensing the various businesses involved in MSVs instead of applying the traditional new–used dealer framework.

JURISDICTION C

In Jurisdiction C, a conversion means a motor vehicle, other than a motor home, ambulance, or firefighting vehicle:

- substantially modified by a person other than the manufacturer or distributor of the chassis of the motor vehicle; and
- not previously the subject of a retail sale.

A converter’s license is required to make improvements to a new motor vehicle. Jurisdiction C’s laws require MSVs to be sold through franchised dealers of the underlying chassis manufacturer.

Best Practice

Review existing laws and regulations to determine if they adequately address the nuances and intricacies of selling MSVs and support continued innovation in the automotive industry. If existing laws do not adequately address MSVs or allow for innovation, consider creating a new type of license while accounting for existing franchise laws and ensuring consumer protection.

Benefits to Implementation

Reviewing existing laws and regulations to assess if they adequately address the complexities of selling MSVs will provide important regulatory clarity for manufacturers, dealers, and consumers. Many current frameworks were designed for traditional, single-

stage vehicle production and do not clearly assign responsibility for safety, compliance, warranties, or liability when multiple entities are involved in manufacturing a vehicle. Updating these laws—or creating a new, tailored licensing category where gaps exist—can better reflect modern manufacturing practices while reducing uncertainty and legal risk.

This approach also supports continued innovation in the automotive industry by allowing emerging business models and specialized manufacturers to operate within a regulatory structure recognizing their role. A licensing framework designed specifically for MSVs can encourage investment, promote market growth, and strengthen supply chains without forcing innovative companies to fit into outdated regulatory definitions. At the same time, aligning licensing requirements with existing franchise laws helps preserve established protections while creating space for new entrants.

From a consumer protection standpoint, clearer regulatory expectations improve accountability across each stage of vehicle manufacture. Well-defined licensing and oversight requirements can ensure safety standards, disclosures, and post-sale responsibilities are consistently met, reducing confusion for consumers and improving confidence in MSVs. A comprehensive review process can also foster better coordination among regulatory agencies, leading to more consistent enforcement and oversight.

Challenges to Implementation

Implementation presents several challenges. Existing franchise laws are complex, and introducing a new license type without unintentionally weakening dealer protection requires careful legal drafting and stakeholder engagement. Dealers, manufacturers, and regulators may have differing priorities, and resistance may arise from concerns about market disruption or uneven competitive impacts. Reaching consensus on the scope and eligibility of a new license—particularly

how to distinguish MSV manufacturers from traditional OEMs or upfitters—can be technically and legally difficult.

There are also practical and administrative considerations. New licensing structures may increase the workload for regulatory agencies, requiring additional resources, staff training, and enforcement

mechanisms. If reforms are not coordinated across jurisdictions, manufacturers operating in multiple states may face increased regulatory fragmentation rather than simplification. Finally, policymakers must strike a careful balance between providing flexibility to encourage innovation and maintaining robust safety, emissions, and consumer protection standards.

Appendix

A. Recall-Related Concerns for Consumers and Multi-stage Vehicle Manufacturers

Here are the most common issues with safety-related recalls affecting MSV manufacturers:

1. Responsibility Confusion (Chassis vs. Final-Stage)

- **Issue:** It can be unclear who is responsible for the defect, the chassis manufacturer or the final-stage manufacturer (or both).
- **Impact:** This leads to delays in identifying and executing recalls, potentially increasing the risk to owners.

2. Incomplete or Inaccurate Communication

- **Issue:** Chassis manufacturers may not notify final-stage manufacturers of a recall, or final-stage manufacturers may fail to pass recall information to the customer.
- **Impact:** Vehicles may remain unrepaired if the owner is not informed of the issue.

3. VIN Matching and Tracking Problems

- **Issue:** VINs may not be fully integrated across stages, making it difficult to track vehicles affected by a recall.
- **Impact:** There may be incomplete recalls, especially in small-batch or specialty production runs.

4. Modified Systems or Components

- **Issue:** Final-stage modifications may introduce additional safety risks (e.g., electrical, fuel, brake, or structural changes) or may compromise OEM safety systems.

- **Impact:** New defects may emerge that fall outside the scope of the original chassis recall.

5. Certification and FMVSS Compliance Issues

- **Issue:** After modifications, the final vehicle may no longer comply with one or more FMVSS.
- **Impact:** The vehicle may be non-compliant and legally inoperable or subject to recall because of safety violations.

6. Documentation and Recordkeeping Deficiencies

- **Issue:** Final-stage manufacturers may have incomplete records regarding components used or current owners, particularly in low-volume or custom builds.
- **Impact:** Recall execution becomes more challenging to carry out comprehensively, increasing the likelihood of regulatory penalties.

7. Regulatory and Legal Complexity

- **Issue:** The NHTSA expects MSV manufacturers to fully understand and comply with both recall and defect-reporting obligations, even when the defect originated upstream.
- **Impact:** Failure to properly manage a recall may result in legal liability and financial penalties.

Common Examples

- A chassis cab is recalled for a steering column defect; however, the vehicle has since been completed as a shuttle bus with additional weight, which may exacerbate the issue.

- An RV manufacturer's modifications to the electrical system and added weight may contribute to issues with OEM tires or suspension, potentially resulting to a recall.

Recall-Relevant Regulations for Multi-stage Vehicle Manufacturers

Below is a comprehensive list of the key U.S. federal laws and regulations governing motor vehicle safety recalls, with a focus on how they apply specifically to MSVs and MSV manufacturers:

1. National Traffic and Motor Vehicle Safety Act of 1966

Citation: 49 U.S.C. Chapter 301

What it does:

- The legal foundation for FMVSS and recalls
- Requires manufacturers notify NHTSA, dealers, and owners of any safety-related defect or FMVSS noncompliance
- Applies to manufacturers, including incomplete vehicle, intermediate, and final-stage manufacturers

Relevance to MSVs: All stages are legally considered manufacturers and are required to report defects, even when the issue originates from a component produced by another party.

2. 49 CFR Part 573 — Defect and Noncompliance Responsibility and Reports

What it does:

- Governs how manufacturers must notify NHTSA of defects or FMVSS noncompliance
- Requires detailed Part 573 Defect Reports, including VIN ranges, population estimates, and root causes
- Includes intermediate and final-stage manufacturers in the reporting obligations

Relevance to MSVs: If a final-stage modification causes or contributes to a defect, the final-stage manufacturer is responsible for reporting and may be required to conduct a recall, even if the base chassis was originally compliant.

3. 49 CFR Part 577 — Defect and Noncompliance Notification

What it does:

- Establishes requirements for notifying vehicle owners, dealers, and distributors of safety recalls
- Defines the content, language, and timing standards for recall communications

Relevance to MSVs: Final-stage manufacturers are required to maintain owner records and issue recall notifications if they sold the completed vehicle, even when the defect originates in the chassis.

4. 49 CFR Part 567 — Certification

What it does:

- Requires each manufacturer stage (incomplete, intermediate, final) to certify the vehicle's compliance with applicable FMVSS at their stage of manufacture
- Final-stage manufacturers must affix a final certification label stating the completed vehicle complies with FMVSS

Relevance to MSVs: If modifications after the chassis stage affect safety systems (e.g., braking, lighting), the final-stage manufacturer is liable for FMVSS compliance.

5. 49 CFR Part 568 — Vehicles Manufactured in Two or More Stages

What it does:

- Details the documentation and responsibilities for incomplete vehicle manufacturers (e.g., Ford, Freightliner) and final-stage manufacturers

- Requires a body builder's book (or equivalent) to provide instructions how to complete the vehicle without compromising FMVSS compliance

Relevance to MSVs: Final-stage manufacturers must follow these instructions or assume full compliance responsibility for deviations.

6. 49 CFR Part 579 — Early Warning Reporting (EWR)

What it does:

- Requires manufacturers of 500+ vehicles per year to report early indicators of safety issues (e.g., warranty claims, field reports, deaths, injuries)
- Applies to MSV manufacturers

Relevance to MSVs: If the final-stage manufacturer meets applicable reporting thresholds, it is required to track and report field incidents indicative of defects, even when the underlying cause originates from the chassis.

7. TREAD Act (Transportation Recall Enhancement, Accountability, and Documentation Act) of 2000

What it does:

- Strengthens recall and defect-reporting requirements
- Introduces criminal penalties for failing to report known safety defects
- Created the basis for Early Warning Reporting (EWR)

Relevance to MSVs: This law raised the stakes for every vehicle manufacturer, including final assemblers, by requiring more robust reporting and legal accountability.

8. NHTSA Compliance and Enforcement

Guidelines

Not a law but vital:

- NHTSA publishes guidance outlining best practices for MSV manufacturers for handling compliance, defect investigations, recall execution, and recordkeeping.

Relevance to MSVs: Adhering to this guidance helps mitigate liability, particularly for smaller manufacturers lacking dedicated legal resources.

B. Warranty Issues

Warranties for MSVs

First-Stage Vehicle Warranties:

DRIVETRAIN WARRANTY

A drivetrain warranty typically covers components transferring power to the wheels, such as the transmission, driveshaft, axles, and sometimes the wheels themselves. However, it usually does not include the engine, which is covered under a powertrain warrant.

POWERTRAIN WARRANTY

A powertrain warranty typically covers includes the engine and all parts making the vehicle move. Essentially, the powertrain warranty offers broader coverage than the drivetrain warranty and can include differential, axles, and transfer case.

BUMPER-TO-BUMPER WARRANTY

A bumper-to-bumper warranty typically covers electrical and cooling systems because it is the most comprehensive type of warranty protecting a wide range of vehicle components. However, the specific coverage can vary by manufacturer.

INTERMEDIATE- AND FINAL-STAGE WARRANTIES

Upfitters and final-stage manufacturers vary widely in purpose and complexity, particularly with respect to warranty coverage. Each may have distinct warranty

terms, which may not be readily apparent to the vehicle owner. Figure 1 highlights some summary examples.

Challenges for FSVMs

Chronic warranty issues for intermediate or final-stage motor vehicle manufacturers often stem from problems in design integration, component compatibility, and incomplete documentation.



Common Warranty Issues

1. **Electrical system failures** – caused by improper integration between chassis and upfit electrical components
2. **Corrosion or paint failure** – often from improper surface prep or material incompatibility
3. **Frame or structural fatigue** – caused by incorrect weight distribution or exceeding axle ratings
4. **Water intrusion** – from poor sealing around installed components or modifications
5. **Alignment and suspension problems** – stemming from altered geometry caused by improper body mounting
6. **Brake or lighting system malfunctions** – related to tampering or incorrect connections during upfitting
7. **Noncompliance with FMVSS or OEM guidelines** – leading to liability and warranty claim denials

C. Warranty-Relevant Regulations for Multi-stage Vehicle Manufacturers

Responsibility for Defects, Recalls, and Document Retention

USC Title 49, Subtitle V, Part 29, §529.4 stipulates each incomplete automobile manufacturer shall provide the subsequent manufacturer or dealer a document with their respective name, the month and year in which their respective work was performed on the vehicle, some form of identification (i.e., serial number) allowing subsequent identification of the work performed, self-certified fuel economy values in accordance with Environmental Protection Agency regulations, maximum curb weight values “that may not be exceeded by a subsequent manufacturer without invalidating the fuel economy values,” and an affirmation that these fuel economy values are computed with road load horsepower and the presence of air conditioning. Additionally, the document shall either be affixed to the vehicle or sent directly to the next-stage manufacturer or dealer. §579.5, §579.11, §579.12, §573.8(c), §573.6(c), and §576 are very specific as to what is required to be submitted upon NHTSA request and what types of documents are to be retained for a period of no less than 10 years. These documents include, but are not limited to, records of work performed under warranties, any lists, compilations, analyses, or discussions of any malfunctions contained in internal or external correspondence of the manufacturer.

§529.5 stipulates requirements for intermediate-stage manufacturers, defined as someone other than the incomplete or final-stage manufacturer who performs manufacturing operations on an incomplete automobile. If the intermediate-stage manufacturer manufacturing operations on an incomplete vehicle cause it to exceed the maximum curb weight or maximum frontal area set forth in the document furnished by the incomplete manufacturer, the intermediate-stage manufacturer must prepare a new

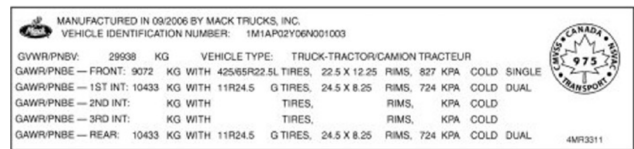
fuel economy label and updated documentation required of incomplete manufacturers for the automobile.

§529.6 sets forth requirements for final-stage manufacturers, defined as someone who performs manufacturing operations on an incomplete automobile so it becomes a completed automobile and can perform its intended function “other than the addition of readily attachable components, such as mirrors or tire and rim assemblies, or minor finishing operations such as painting.” All requirements for incomplete and intermediate manufacturers apply to final-stage manufacturers, including curb weight modifications and fuel economy requirements.

49 CFR § 568.4 outlines the requirements for incomplete vehicle manufacturers in the United States. It mandates these manufacturers provide an Incomplete Vehicle Document (IVD) for each incomplete vehicle at or before delivery. The IVD must include:

- The manufacturer’s name and address
- The month and year of the last manufacturing operation on the incomplete vehicle
- Identification of the incomplete vehicle(s) by VIN
- The GVWR and GAWR for each axle of the completed vehicle
- A list of vehicle types into which the incomplete vehicle may appropriately be manufactured
- A list of applicable FMVSS and statements regarding conformity

USC Title 49, §30112, USC Title 49, §30115, and Title 49, §30116 stipulate that manufacturers of vehicles and equipment must self-certify that the vehicle or equipment complies with applicable motor vehicle safety standards. This self-certification declaration must be shown by a label or tag. Also relevant to this guide, USC Title 49, §3015 mandates that “if the intermediate or final-stage manufacturer elects to



Example of first-stage manufacturer FMVSS Certification label

assume responsibility for compliance with standard covered by document provided by an incomplete manufacturer,” they must notify continued compliance with the previous-stage manufacturer. Until certification is completed by the final-stage manufacturer, who must also assume responsibility for any previous FMVSS certifications on an incomplete vehicle, affected vehicles may not be sold to consumers. If a vehicle is found to contain a defect or does not comply with applicable motor vehicle safety standards and has not yet been sold to a consumer, the previous or original manufacturer must either buy back the vehicle from the dealer or assume the responsibility of repairing the vehicle prior to sale to a consumer.

49 U.S. Code § 30118 outlines the legal responsibilities and procedures related to identifying and addressing safety defects or noncompliance with FMVSS in motor vehicles and motor vehicle equipment. It authorizes the Secretary of Transportation to notify manufacturers if a defect or noncompliance is suspected, based on information gathered through testing, consumer complaints, manufacturer reports, or other sources. After being notified, the manufacturer must investigate and if a defect or noncompliance is confirmed must notify the Secretary, as well as vehicle owners, dealers, and distributors. The notice must describe the defect or noncompliance; identify the affected vehicles or equipment; and explain the remedy available, such as a repair, replacement, or refund.

Manufacturers are obligated to act unless the Secretary determines the issue is “inconsequential to motor vehicle safety,” in which case an exemption may be granted. The section also grants the Secretary the authority to hold public hearings to determine whether the manufacturer has failed to provide required notice or has not complied with regulations. The goal of

this statute is to protect public safety by ensuring safety defects are identified, disclosed, and remedied promptly and transparently.

The Magnuson-Moss Warranty Act, enacted in 1975, is a federal law designed to protect consumers from deceptive warranty practices and ensure they receive clear, detailed information about warranty terms before making a purchase. It applies to written warranties on consumer products, including vehicles, costing more than \$10. The Act requires manufacturers and sellers to clearly disclose whether a warranty is “full” or “limited” and to outline the coverage, duration, and process for resolving disputes. It also allows consumers to seek legal remedies in federal court if a warrantor fails to comply with its obligations, and it encourages dispute resolution through informal mechanisms such as arbitration.

The difference between a “full” or “limited” warranty is determined by five qualifiers. If all the following five conditions apply to a warranty, it qualifies as a “full” warranty:

1. There is no limitation on the duration of implied warranties.
2. Warranty service is available to anyone who owns the product during the warranty period.
3. Warranty service is provided at no charge.
4. If the product cannot be repaired after a reasonable number of attempts, the dealer

or manufacturer must offer the consumer a replacement or a full refund, as they choose.

5. Consumers are only required to notify the dealer when service is needed; no additional duties are required unless proof exists such a requirement is reasonable.

If any of these conditions are not met, the warranty is considered “limited.”

However, no obligation exists to classify a vehicle’s warranty as either “full” or “limited.” If the conditions above apply only to certain parts of a product or vehicle or only during part of the warranty period, the warranty is considered a multiple warranty, combining both full and limited coverage.

For MSV manufacturers (such as upfitters or final-stage manufacturers), the Magnuson-Moss Warranty Act has important implications. When an upfitter completes a vehicle using an incomplete chassis from an OEM, they may become responsible for the performance and warranty of the completed vehicle or the modifications made. If a written warranty is provided on the upfit or body installation, it must comply with the Act’s requirements for clarity and disclosure. This means that MSV manufacturers must ensure their warranties do not mislead consumers, conflict with the OEM’s coverage, or place unfair burdens on the buyer. For consumers, this law provides assurance that both the original equipment and any modifications are covered transparently and fairly and that they have legal recourse if problems arise with the upfitted vehicle not properly addressed.

Resources

Manufacturers' Handbook – National Highway Traffic Safety Administration (NHTSA) – <https://vpic.nhtsa.dot.gov/documents/ManufacturerHandbook.pdf?d=241025a>

National Crime Information Center (NCIC) Code Manual – [https://www.aamva.org/vehicles/national-crime-information-center-\(ncic\)-code-manual](https://www.aamva.org/vehicles/national-crime-information-center-(ncic)-code-manual)

National Highway Traffic Safety Administration (NHTSA) – <https://www.nhtsa.gov>

NHTSA VIN Decoder Powered by vPIC – <https://vpic.nhtsa.dot.gov/decoder>

National Motor Vehicle Title Information System (NMVTIS) – <https://vehiclehistory.bja.ojp.gov>

National Insurance Crime Bureau (NICB) – <https://www.nicb.org>

RV Industry Association (RVIA) – <https://www.rvia.org>

The Work Truck Association (NTEA) – <https://www.ntea.com>

Glossary and Acronyms

Assembler	An entity building a vehicle from component parts but does not qualify as a manufacturer under federal definitions. Assemblers typically do not issue a VIN, certify compliance with FMVSS, or issue an MCO. They typically work with component kits, gliders, or major parts rather than building vehicles from the ground up.
Code of Federal Regulations (CFR)	The official, codified collection of all permanent rules and regulations issued by federal agencies of the U.S. government.
Converter	An entity that modifies a completed vehicle after it leaves the original manufacturer but before first retail sale. Converters typically alter or add equipment to a vehicle already been certified by the OEM. Converters do not issue a new VIN for the vehicle but must re-certify the vehicle if their modifications affect FMVSS compliance.
Federal Motor Vehicle Safety Standards (FMVSS)	The minimum safety performance requirements all motor vehicles and many vehicle-related components must meet before they can be sold or imported into the United States. They are issued and enforced by NHTSA under federal law.
Gross Axle Weight Rating (GAWR)	The maximum distributed weight a single axle (front or rear) is designed to safely carry, as specified by the manufacturer.
Gross Vehicle Weight Rating (GVWR)	The maximum allowable total weight of a vehicle as specified by the manufacturer. This number includes the vehicle itself (curb weight), fuel and fluids, passengers, cargo, and aftermarket equipment or upfits.
Incomplete Vehicle Document (IVD)	A document issued by the incomplete vehicle manufacturer (often a chassis cab or cutaway builder). It provides the information intermediate- and final-stage manufacturers need to complete the vehicle while maintaining FMVSS compliance. The IVD generally includes the intended use of the incomplete vehicle, FMVSS compliance statements for the portions already completed, instructions or limitations for completing the vehicle, weight ratings (GVWR, GAWR) and how they may be affected by final equipment, required components or performance criteria the final-stage manufacturer must meet, and any options or configurations affecting compliance.
Manufacturer's Certificate of Origin (MCO)	The original ownership document issued by the OEM for a newly manufactured vehicle and establishes who built it and what it is. An MCO is generally required by jurisdictions to issue the first title.

Multi-stage Vehicle (MSV)	A vehicle beginning as an incomplete vehicle (e.g., chassis cab, cutaway, stripped chassis) and completed by one or more additional manufacturers.
National Crime Information Center (NCIC)	The nationwide criminal justice information system operated by the Federal Bureau of Investigation. It is one of the core data sources departments of motor vehicles, law enforcement, and federal agencies rely on for real-time checks.
National Highway Traffic Safety Administration (NHTSA)	The federal agency within the U.S. Department of Transportation responsible for vehicle safety, equipment standards, crash data, and enforcement.
National Insurance Crime Bureau (NICB)	A nonprofit organization supported by the insurance industry. NICB works closely with law enforcement, departments of motor vehicles, and federal agencies to combat vehicle-related crime and investigates auto theft, fraud, and organized criminal activity involving vehicles. The NICB maintains databases used to identify stolen vehicles, fraudulent VINs, and questionable claims. It also supports law enforcement with field investigations and analytic tools
National Motor Vehicle Title Information System (NMVTIS)	A system operated by the American Association of Motor Vehicle Administrators (AAMVA) created to enable jurisdictions and others to gain instant and reliable access to information maintained by jurisdictions pertaining to vehicle records. NMVTIS provides the ability for title issuing jurisdictions to transmit and verify title, brand, and odometer information on the paper title against the electronic record from the title issuing jurisdiction.
Original Equipment Manufacturer (OEM)	Refers to the company designing, building, and certifying the vehicle or component to federal standards.
Rebuilt Vehicles	Previously titled or registered vehicles incapable of operation for use on public roads due to damage and rebuilt to the original design of the vehicle by replacing major component parts with like make and model parts.
Reconstructed Vehicles	Previously titled or registered vehicles permanently altered from original construction by removing, adding, or substituting major component parts.
Upfitter	An entity adding equipment, bodies, or specialized components to a vehicle, typically to adapt it for a specific commercial, vocational, or mobility purpose. Upfitters operate in the same ecosystem as converters and final-stage manufacturers, but the term “upfitter” is broader and can apply in several regulatory contexts.
Vehicle Identification Number (VIN)	The unique, 17-character code assigned to every motor vehicle manufactured or imported for sale in the United States.

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OUR VISION

Safe drivers

Safe vehicles

Secure identities

Saving lives!



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