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PUBLIC VERSION

BEFORE THE
INTERNATIONAL TRADE ADMINISTRATION OF THE
U.S. DEPARTMENT OF COMMERCE
AND THE
U.S. INTERNATIONAL TRADE COMMISSION

PETITIONS FOR THE IMPOSITION OF ANTIDUMPING AND COUNTERVAILING DUTIES PURSUANT TO SECTIONS 701 AND 731 OF THE TARIFF ACT OF 1930, AS AMENDED

VOLUME I: COMMON ISSUES AND INJURY PETITION

IN THE MATTER OF:
CERTAIN CHASSIS AND SUBASSEMBLIES THEREOF FROM MEXICO, THAILAND AND THE SOCIALIST REPUBLIC OF VIETNAM

PETITIONER:
U.S. CHASSIS MANUFACTURERS COALITION

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I. INTRODUCTION

These Petitions are presented on behalf of the U.S. Chassis Manufacturers Coalition (the "Coalition" or "Petitioner"). These Petitions are supported by the members of the Coalition (Cheetah Chassis Corporation and Stoughton Trailers, LLC).[1] The Coalition alleges that certain chassis imported from Mexico, Thailand, and the Socialist Republic of Vietnam are being or are likely to be sold at less than normal value (hereinafter "LTNV") within the meaning of section 731 of the Tariff Act of 1930, *codified as amended*, 19 U.S.C. § 1673 (hereinafter "the Act") and chassis imported from Mexico and Thailand are subsidized within the meaning of section 701 of the Act and 19 U.S.C. § 1671. These unfairly traded imports have materially injured the U.S. domestic industry producing chassis and threaten to cause further material injury if relief is not granted. These Petitions contain information reasonably available to Petitioner in support of these allegations.

Separate volumes regarding the allegations of dumping by subject producers, as well as countervailable subsidies provided to subject producers, are being filed simultaneously at the U.S. Department of Commerce (the "Department") and the U.S. International Trade Commission (the "Commission"). Petitioner requests that antidumping and countervailing duties be imposed to offset the dumping and subsidies detailed in the antidumping and countervailing duty volumes.

II. EXECUTIVE SUMMARY

This petition addresses market- distorting and anti-competitive practices that have harmed, and further threaten the vitality of, the U.S. chassis industry—an industry that is crucial to domestic supply chains. The domestic chassis industry is familiar with the destructive impact of unfairly

[1] Non-petitioning domestic manufacturers [*company name*]. *See* Non-Petitioner U.S. Producers' Letters of Support, attached as **Exhibit I-1**.

traded imports. In 2020, the U.S. chassis industry sought trade relief after Chinese chassis producers targeted the U.S. market with large volumes of dumped and subsidized merchandise. Imports were largely produced by subsidiaries of major Chinese state-owned producer China International Marine Containers (Group) Co., Ltd. ("CIMC"). The influx of chassis from China took substantial market share, resulting in declining profits, lost sales, layoffs, and low capacity utilization. The largest U.S. chassis producer, Stoughton, was even forced to stop production altogether. The Commission and Department imposed AD/CVD orders in 2021, and the domestic industry was able to quickly resume production once again. Demand for chassis also increased due to pent up shipping demand following COVID-19 slowdowns. To meet this demand, U.S. producers rapidly ramped up capacity and added new capacity after years of injury from Chinese imports.

Unfortunately, it was not long before the U.S. market saw another influx of unfairly traded imports from other sources, including CIMC again, from Mexico, Thailand, and Vietnam. While U.S. producers were ramping up production and adding new capacity, foreign producers were doing the same, and entire companies sprang up in the subject countries to take advantage of U.S. demand and avoid duties on Chinese chassis. In a matter of months, CIMC relocated its U.S.-dedicated production capacity to a new facility in Thailand. As in the last case, U.S. chassis customers purchased large volumes of chassis to meet the spike in demand for transporting containerized goods. But, as the COVID spike waned and traffic at U.S. ports moderated, customers began cancelling orders with U.S. producers and instead used their import inventories built up in 2022. While demand had decreased due to the inventory buildup, customers continued to import subject merchandise at the expense of the U.S. industry, even into 2024. Tellingly, while

demand for moving containerized freight was strong in 2024, the U.S. producers' order books and production continued declining, as subject imports took an increasing share of the market.[2]

This is a dynamic familiar to the chassis industry. In the China case, the Commission observed an "overhang" effect of chassis purchases, wherein foreign producers will surge import volumes in one year, causing domestic consumption to decline in subsequent years.[3] In 2018, importers rushed in chassis from China to preempt potential Section 301 duties. As the Commission observed, the U.S. market's typical annual demand is 25,000 to 35,000 new chassis, but because of an "abnormally high level" of chassis imports in 2018, it appeared that domestic consumption decreased in 2019 and 2020.[4] The chassis overpurchased in the "spike" year eroded demand in the following years. Thus, the adverse impacts caused by unfairly traded imports are carried through for several years. The chassis market experienced a similar scenario over the last three years, but this time involving imports from Mexico, Thailand and Vietnam.

Pressure from these unfairly priced imports have created severe, adverse effects for the domestic industry. Domestic producers' commercial sales and capacity utilization have dropped precipitously in recent years. U.S. producers' inventories grew due to cancelled orders. The domestic industry's operating income and net profits have plummeted, and U.S. companies have been forced to lay off workers and reduce worker hours. Additionally, at a time when foreign producers are leveraging subsidies to increase production, U.S. producers must divert funding away from much needed capital investment expenditures. Subject imports have also undermined

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[2] Laura Curtis, *Port Traffic Booms Despite Recession Fears*, Transport Topics (Aug. 19, 2024), attached as **Exhibit I-2**.

[3] *See Chassis and Subassemblies from China*, Inv. Nos. 701-TA-657, USITC Pub. 5187 (May 2021) (Final) at 46, excerpts attached as **Exhibit I-3**.

[4] *Id.*

the capital investments domestic producers previously made to meet customer demand. Some U.S. producers are even once again forced to consider idling production lines due to the lack of orders.

This situation only threatens to get worse. As discussed, in recent years, producers in Mexico, Thailand, and Vietnam have added capacity specifically dedicated to the U.S. market. CIMC can now produce thousands of chassis in Thailand, in its effort to avoid U.S. duties on chassis from China. Many subject producers, such as CIMC, Panus, and Hyundai, have established U.S. affiliates that allow these companies to quickly ramp up exports in the future. These efforts also demonstrate that subject producers are deeply invested in supplying the U.S. market and taking U.S. market share. Once the current supply overhang recedes, U.S. producers will undoubtably face a renewed surge of subject imports. Without relief, U.S. chassis producers will be forced to shutter production, and the industry will collapse.

III. COMMON ISSUES

This section contains information required in antidumping and countervailing duty petitions by the regulations of the Department[5] and the Commission.[6]

A. The Names and Addresses of the Petitioner (19 C.F.R. § 351.202(b)(1))

The Petitioner is the U.S. Chassis Manufacturers Coalition. The Coalition is a domestic interested party within the meaning of 19 U.S.C. § 1677(9)(F) and 19 C.F.R. § 351.102(b)(17).[7] The names, addresses, and telephone numbers for the companies comprising the Coalition are provided in **Exhibit I-4**.[8]

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[5] 19 C.F.R. §§ 351.202(b)(1)-(10), (b)(12).

[6] *Id.* § 207.11.

[7] In addition, individual members of the Coalition are domestic interested parties within the meaning of 19 U.S.C. § 1677(9)(C) and 19 C.F.R. § 351.102(b)(17).

[8] List of Petitioners and Contact Information, attached as **Exhibit I-4**.

B. Identity of the Industry on Whose Behalf the Petition Is Filed (19 C.F.R. § 207.11(b)(2)(ii); 19 C.F.R. § 351.202(b)(2))

These Petitions are filed on behalf of the U.S. industry that produces certain chassis described in the scope. As discussed below, Petitioner and supportive, non-petitioning U.S. producers account for the majority of U.S. chassis production. The names, addresses, and telephone numbers of additional domestic producers in the United States are provided in **Exhibit I-5**.[9] According to the best information available to Petitioner, **Exhibits I-4** and **I-5** identify all known producers of the merchandise under consideration in the United States.[10]

C. Information Relating to the Degree of Industry Support for the Petition (19 C.F.R. § 351.202(b)(3))

Under the relevant statutory provisions, a petition is filed by or on behalf of the domestic industry if: (1) domestic producers who support the petition account for at least 25% of the total production of the domestic like product, and (2) domestic producers who support the petition account for more than 50% of the production of the domestic like product produced by that portion of the industry expressing support for or opposition to the petition.[11] Petitioner meets both of these requirements.

Petitioner's estimate of total U.S. production of chassis for 2024 is in the table below. The Coalition uses member company 2024 production data and actual production data for [*company name*], plus 2024 estimated production levels for all other non-Petitioner U.S. producers, to calculate total 2024 chassis production in the United

[9] Non-Petitioner U.S. Chassis Manufacturers, attached as **Exhibit I-5**.

[10] *Id.*; List of Petitioners and Contact Info, attached as **Exhibit I-4**.

[11] 19 U.S.C. § 1671a(c)(4)(A) (countervailing duty petitions) and § 1673a(c)(4)(A) (antidumping petitions).

States.[12] Though not members of the petitioning Coalition, [*company name* *company name* *narrative*].[13] Petitioner does not have access to the actual production volumes for the remaining U.S. producers but provides a reasonable estimate based on registration information from [*source*].[14] This estimate represents the best information available to Petitioner and is a reasonable estimate of total domestic chassis production.[15]

As Table 1 shows, the share of U.S. production of chassis among those U.S. producers that support the Petition exceeds the statutory standard.

TABLE 1
PETITIONER'S SHARE OF DOMESTIC PRODUCTION[16]

	2024 Production in Units
Estimated Domestic Production	[##]
Petitioner's Production	[##]
Petitioner's Share	[#]%
Non-Petitioner Producers Supporting Petition Production	[##]
Total Domestic Producers Supporting Petition Share	[#]%

[12] *See* Domestic Industry Support Calculation, attached as **Exhibit I-7**; *see also* Non-Petitioner U.S. Chassis Manufacturers, attached as **Exhibit I-5**.

[13] *See* Non-Petitioner U.S. Producers' Letters of Support, attached as **Exhibit I-1**. *See* [*source*].

[14] *See* Domestic Industry Support Calculation, attached as **Exhibit I-7**. [*source*] vehicle registration data is a source commonly used by the transportation industry to track shipments of chassis in the U.S. market. The [ ] data tracks the registration of chassis, among other types of vehicles, in the United States annually and includes information regarding [*methodology description*]. [*methodology description*]. Thus, chassis registration data is a helpful proxy for production and shipments of chassis in the United States in a given year.

[15] [*source*] registration data indicates that [*description*]. *See id.*

[16] *See id.*

Thus, Petitioner has the requisite industry support to file these petitions on behalf of the domestic industry.

D. Previous Requests for Import Relief for the Merchandise (19 C.F.R. § 351.202(b)(4))

Petitioner's member companies have previously filed for antidumping and countervailing duty relief on imports of chassis and subassemblies thereof from the People's Republic of China, as part of a separate coalition (*i.e.*, the Coalition of American Chassis Manufacturers).[17] Petitioner has not filed for relief from imports of the subject merchandise under sections 337 of the Act, section 301 of the Trade Act of 1974,[18] or section 232 of the Trade Expansion Act of 1962.

E. Scope of the Investigation and a Detailed Description of the Subject Merchandise (19 C.F.R. § 351.202(b)(5))

1. *Scope of Investigation*

The physical characteristics of the covered products, which define the scope, are as follows:

> The merchandise covered by these investigations consists of chassis and subassemblies thereof, whether finished or unfinished, whether assembled or unassembled, whether coated or uncoated, regardless of the number of axles, for carriage of containers, or other payloads (including self-supporting payloads) for road, marine roll-on/roll-off (RORO) and/or rail transport. Chassis are typically, but are not limited to, rectangular framed trailers with a suspension and axle system, wheels and tires, brakes, a lighting and electrical system, a coupling for towing behind a truck tractor, and a locking system or systems to secure the shipping container or containers to the chassis using twistlocks, slide pins or similar attachment devices to engage the corner fittings on the container or other payload.

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[17] *Certain Chassis and Subassemblies Thereof from the People's Republic of China*, 86 Fed. Reg. 36,093 (Dep't Commerce July 8, 2021) (antidumping duty order); *Certain Chassis and Subassemblies Thereof from the People's Republic of China*, 86 Fed. Reg. 24,844 (Dep't Commerce May 10, 2021) (countervailing duty order and amended final affirmative countervailing determination).

[18] While Petitioner did not "file for" such relief, chassis from China are currently covered by Section 301 duties. In September 2018, the U.S. Trade Representative imposed 10% duties on Chinese imports classified under HTS 8716.39.00, including chassis, which were later increased to 25%. *Notice of Modification of Section 301 Action: China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation*, 83 Fed. Reg. 47,974, 48,000 (U.S. Trade Rep. Sept. 21, 2018); *Notice of Modification of Section 301 Action: China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation*, 84 Fed. Reg. 20,459 (U.S. Trade Rep. May 9, 2019).

Subject merchandise includes, but is not limited to, the following subassemblies:

- Chassis frames, or sections of chassis frames, including kingpin assemblies, bolsters consisting of transverse beams with locking or support mechanisms, goosenecks, drop assemblies, extension mechanisms and/or rear impact guards;

- Running gear assemblies or axle assemblies for connection to the chassis frame, whether fixed in nature or capable of sliding fore and aft or lifting up and lowering down, which may or may not include suspension(s) (mechanical or pneumatic), wheel end components, slack adjusters, dressed axles, brake chambers, locking pins, and tires and wheels; and

- Assemblies that connect to the chassis frame or a section of the chassis frame, such as but not limited to, pintle hooks or B-trains (which include a fifth wheel), which are capable of connecting a chassis to a converter dolly or another chassis.

Importation of any of these subassemblies, whether assembled or unassembled, constitutes an unfinished chassis for purposes of these investigations.

Subject merchandise also includes chassis, whether finished or unfinished, entered with or for further assembly with components such as, but not limited to: hub and drum assemblies, brake assemblies (either drum or disc), dressed axles, brake chambers, suspensions and suspension components, wheel end components, landing gear legs, spoke or disc wheels, tires, brake control systems, electrical harnesses and lighting systems.

Processing of finished and unfinished chassis and components such as trimming, cutting, grinding, notching, punching, drilling, painting, coating, staining, finishing, assembly, or any other processing either in the country of manufacture of the in-scope product or in a third country does not remove the product from the scope. Inclusion of other components not identified as comprising the finished or unfinished chassis does not remove the product from the scope.

Individual components entered and sold by themselves are not subject to the investigations, but components entered with or for further assembly with a finished or unfinished chassis are subject merchandise. A finished chassis is ultimately comprised of several different types of subassemblies. Within each subassembly there are numerous components that comprise a given subassembly.

This scope excludes dry van trailers, refrigerated van trailers and flatbed trailers. Dry van trailers are trailers with a wholly enclosed cargo space comprised of fixed sides, nose, floor and roof, with articulated panels (doors) across the rear and occasionally at selected places on the sides, with the cargo space being permanently incorporated in the trailer itself. Refrigerated van trailers are trailers with a wholly enclosed cargo space comprised of fixed sides, nose, floor and roof, with articulated

> panels (doors) across the rear and occasionally at selected places on the sides, with the cargo space being permanently incorporated in the trailer and being insulated, possessing specific thermal properties intended for use with self-contained refrigeration systems. Flatbed (or platform) trailers consist of load carrying main frames and a solid, flat or stepped loading deck or floor permanently incorporated with and supported by frame rails and cross members.
>
> The finished and unfinished chassis subject to these investigations are typically classified in the Harmonized Tariff Schedule of the United States (HTSUS) at subheadings: 8716.39.0090 and 8716.90.5060. Imports of finished and unfinished chassis may also enter under HTSUS subheading 8716.90.5010. While the HTSUS subheadings are provided for convenience and customs purposes, the written description of the merchandise under investigation is dispositive.

2. *Technical Characteristics and Uses*

The merchandise subject to these investigations consists of chassis used in the transportation of typically intermodal[19] cargo containers, whether finished or unfinished and whether assembled or unassembled, and subassemblies thereof. Chassis are comprised of skeleton frames with a locking mechanism to which a container can be secured, running gear assemblies (including axle(s) and suspension(s)), and connection subassemblies such as pintle hooks or B-trains, among other parts. Chassis also feature landing gear used to support the chassis when disengaged from a truck trailer, electrical wiring systems for brake lights, and tire inflation systems, among other components.

Chassis are typically designed to accommodate specific container sizes, usually 20', 40', 45', or 53', and can even be built to carry more than one size of container (*e.g.*, "20'/40' combos"). Containers carried on chassis include marine containers (also referred to as "ISO" containers, as they are manufactured to specifications outlined by the International Organization for Standardization), domestic containers (designed to be carried over land, and not via ocean

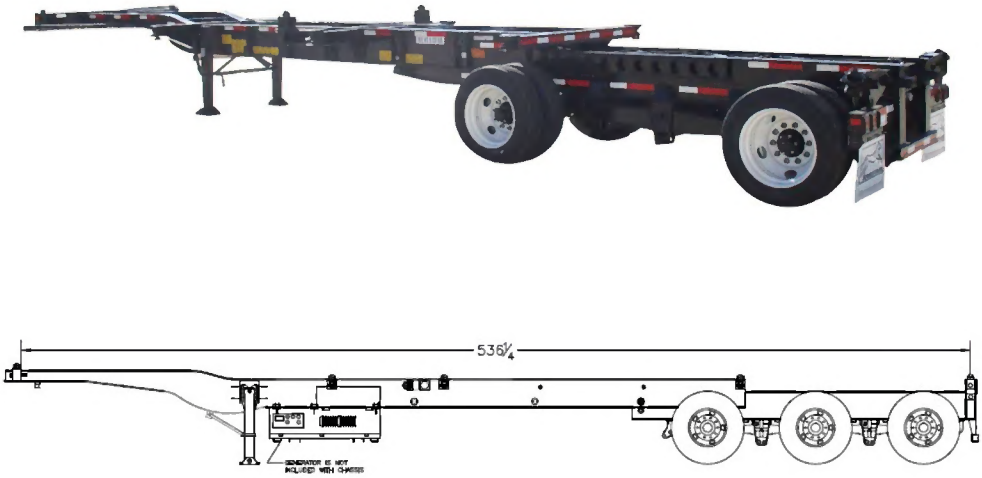
[19] The term 'intermodal' refers to the utilization of more than one transportation mode (*e.g.*, ship, rail, truck) to transport cargo shipments from one location to another.

transport), tank containers for carriage of liquids or sand, flat racks (container that have no sides), generators (used for emergency systems and other uses), waste containers and others. Below is pictured a standard chassis for carrying 20' containers.

Figure 1: Standard Chassis for 20' Containers

As shown in the drawings below, chassis can be "extendable" to enable the chassis to carry containers of multiple lengths. The extensions may take the form of a sliding or adjustable suspensions (Figure 2) or a protracting frame that elongates the chassis (Figure 3).

Figure 2: Extendable Chassis for 20' and 40' Containers with Sliding Suspension



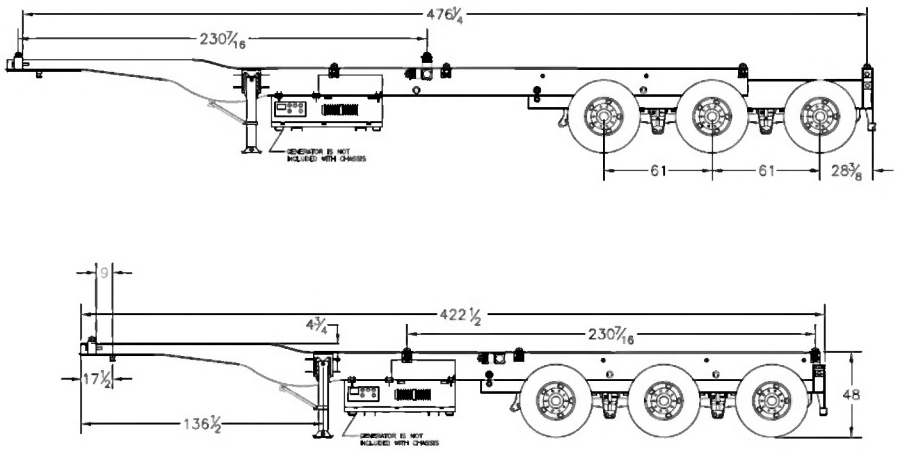
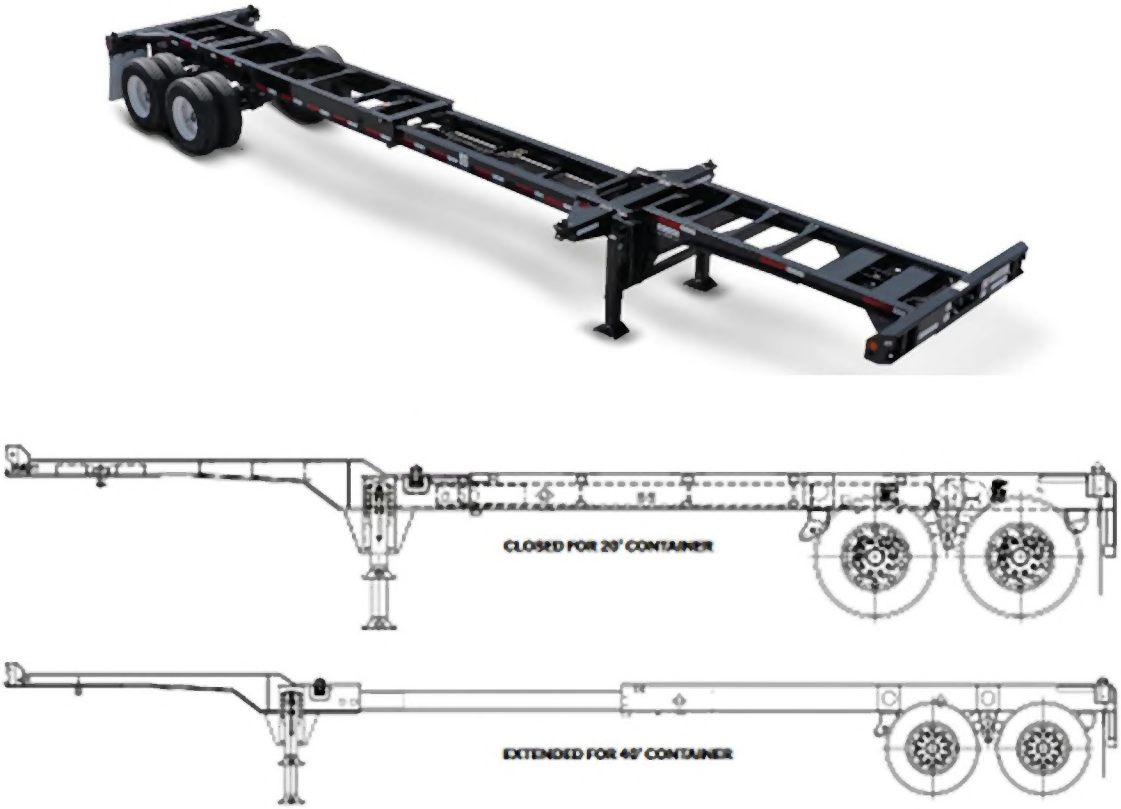


Figure 3: Extendable Chassis for 20' and 40' Containers with Extending Frame



The American Association of Railroads ("AAR") and American Bureau of Shipping ("ABS") both maintain standards and specifications for chassis, excerpts of which are attached at **Exhibit I-8** and **Exhibit I-9**, respectively.[20] Attached at **Exhibit I-10** is a draft ISO document focused on the damage and repair of chassis, which, while not a formal ISO standard, provides helpful descriptions of various chassis components in Annex I.[21]

Chassis may be imported into the United States in a fully assembled form or imported as subassemblies, with most or all of the integral items required to assemble a chassis into its finished form. For example, in the investigation into chassis from China, CIMC Intermodal Equipment, LLC ("CIE") imported chassis frames produced by its Chinese affiliates and assembled these frames with other chassis subassemblies to form a finished chassis.[22] The Commission found CIE's U.S. operations insufficient to constitute domestic production and did not include this assembler in the domestic industry.[23] The photograph below shows [

narrative and source

]. [

narrative and source

]. Since the previous investigation, CIMC has shifted U.S.-dedicated production activities from China to Thailand but, to Petitioner's knowledge, performs largely the same assembly operations in the United States as it did in the previous review.

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[20] *American Association of Railroads Manual of Standards and Recommended Practices Intermodal Equipment Manual*, American Association of Railroads (2017), excerpts attached as **Exhibit I-8**; *Rules for Certification of Cargo Containers*, American Bureau of Shipping (1998), excerpts attached as **Exhibit I-9**.

[21] *Freight Containers - Container Equipment Data Exchange (CEDEX) - Part 5: General Communication Codes for Chassis*, International Organization for Standardization (2014), attached as **Exhibit I-10**.

[22] *See Chassis and Subassemblies from China*, Inv. Nos. 701-TA-657, USITC Pub. 5187 (May 2021) (Final) at 20, excerpts attached as **Exhibit I-3**.

[23] *Id.* at 24-25.

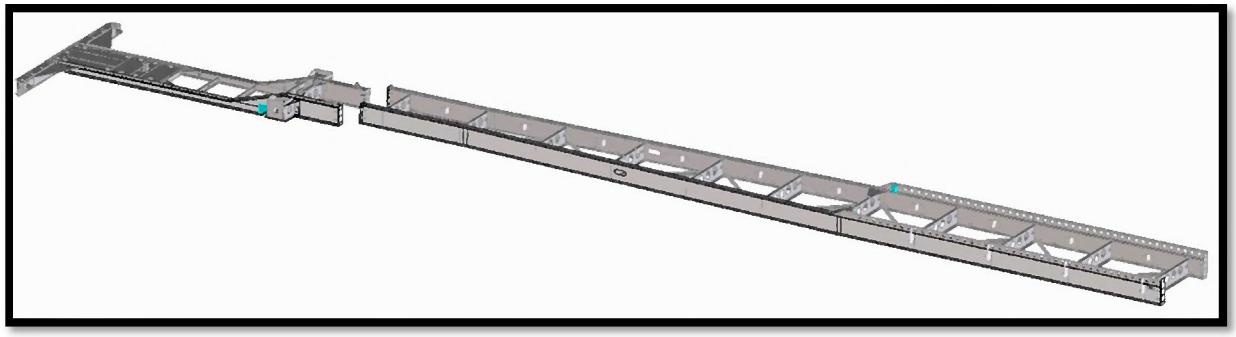
Figure 4: Example of Chassis Prepared for Export in Flat Racks

Any chassis assembled in the United States from subject chassis subassemblies manufactured in Mexico, Thailand, or Vietnam are subject to these investigations.

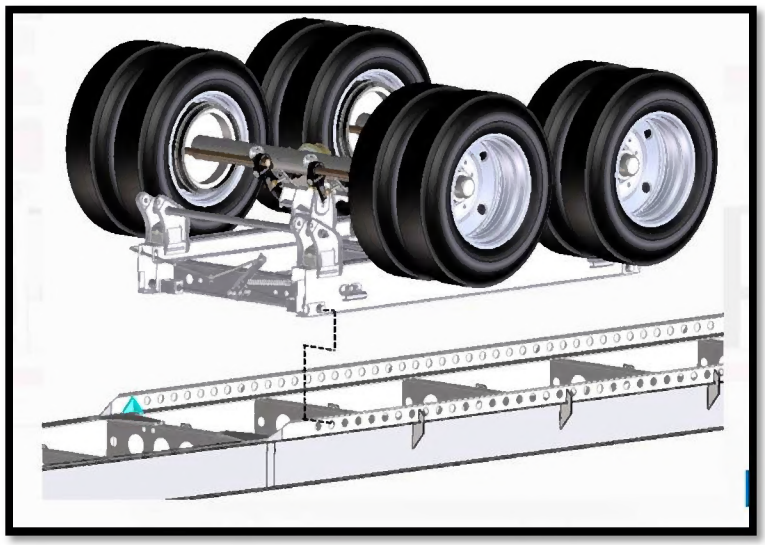
Moreover, for an unfinished or unassembled chassis to be subject to the scope, the subassemblies for a single chassis do not have to enter at the same time (*i.e.*, do not have to enter on the same entry summary). This is imperative to ensure U.S. importers cannot import a chassis in piecemeal fashion to render ineffective any eventual orders. In addition, if chassis subassemblies manufactured in Mexico, Thailand or Vietnam are assembled into a completed chassis in a third country, the chassis remains subject to the scope of these investigations.

The scope includes the following subassemblies of chassis: (1) chassis frames, or sections of chassis frames; (2) running gear assemblies or axle assemblies for connection to the chassis frame; and (3) assemblies and/or components that connect to the chassis frame or a section of the chassis frame. The following pictures/diagrams show the two primary subassemblies:

Chassis frame:



Running gear assembly:



3. *Production Methodology*

The production process for chassis is relatively straightforward and primarily involves the fabrication and assembly of welded steel parts. The chassis frame consists of welded steel parts in three basic subassemblies – the front, or forward beam and front crossmember, assembly, the middle assembly, and the rear, or rear crossmember including Rear Impact Guard, assembly. The completed chassis also includes the running gear assembly, air brake system, and lighting and electrical systems. The running gear assembly is composed of the tires, hub and drum assemblies, axles and suspensions, brake chambers, and other components. The chassis frame subassemblies

are composed of steel I-Beams, box beams, channels, and angles, that are cut and welded into the shape of the frame. [

company input descriptions

].

U.S. chassis producers use Metal Inert Gas welders to weld the various steel components together. The middle, or drop frame assembly, consists of the main longitudinal beams, cross members, and may include diagonal bracing. Once the steel parts are assembled and coated, the air brake system and electrical components are added to the assembly. Specifically, the final assembly of the product prior to delivery can be described as follows:

Stage 1: The front/gooseneck assembly in an orientation with the king pin facing upward provides for access to attach the landing gear and cross-brace.

Stage 2: The mainframe with the operational top surface being inverted for access to the lower portion of the structure provides access to install the axle/wheel/tire portion of the suspension. In the case of a slider type suspension this can be done in the upright orientation.

Stage 2a: In this stage the additional wheel/tire combinations are added to the axles. (Generally, a single wheel/tire is installed to each axle spindle with the pairing dual shipped free).

Stage 3: Once the front section and the mainframes have been processed through stages 1 and 2, they are oriented in an upright relation and the connection just aft of the landing gear is completed. This requires a support at the king pin area of the front section and a support near the forward location of the mainframe, in order to align for fastener placement.

Stage 4: The rear section, which can be comprised of the rear bolster and the rear impact guard, is secured to the rear portion of the main beam (aft of the suspension).

Stage 5: The axle alignment procedure is performed.

Stage 6: Air and electrical connection are completed from section to section.

Stage 7: The final inspection, including light check, air brake timing tests, and Federal Highway Administration inspection is accomplished.

4. *Tariff Classification*

Imports of subject merchandise are classified under Harmonized Tariff Schedule of the United States ("HTSUS") statistical number 8716.39.0090.[24] Major component parts (*i.e.*, subject subassemblies) of chassis may be entered into the United States under that HTSUS number, or under HTSUS statistical number 8716.90.5060. The most-favored nation duty rate for imports under these HTS numbers is zero percent for 8716.39.0090 and 3.1% for 8716.90.5060.[25]

Excerpts from the current HTS are attached at **Exhibit I-12**.[26] The tariff numbers are provided for the convenience of the U.S. government and do not define the scope of the petition. The written description of the merchandise under investigation is dispositive.

F. The Names of the Home Market Countries and the Name of Any Intermediate Country Through Which the Merchandise Is Transshipped (19 C.F.R. § 351.202(b)(6))

The chassis, and subassemblies thereof, covered by these Petitions are imported from Mexico, Thailand, and Vietnam. Petitioner currently does not have any evidence that the subject merchandise is currently produced in a country other than that from which it is exported. However, Petitioner emphasizes that subject merchandise also includes chassis and subassemblies that have been further processed in a third country, including but not limited to one or more of the following: trimming, cutting, grinding, notching, punching, drilling, painting, coating, staining, finishing,

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[24] *See, e.g.*, Customs Ruling E85372, attached as **Exhibit I-11**.

[25] *Chapter 87: Vehicles Other Than Railway or Tramway Rolling Stock, and Parts and Accessories Thereof*, Harmonized Tariff Schedule of the United States (2025) at 87-34, excerpts attached as **Exhibit I-12**.

[26] *Id.*

assembly, or any other processing that would not otherwise remove the merchandise from the scope of the investigation if performed in the country of manufacture of the in-scope product.

G. The Names and Addresses of Each Person Believed to Sell the Merchandise at LTNV and the Proportion of Total Exports to the United States (19 C.F.R. § 351.202(b)(7)(i)(A))

The names and addresses of the Mexican, Thai, and Vietnamese entities believed by Petitioner to be producing and exporting the chassis subject to these petitions are provided in **Exhibit I-13**.[27] In compiling this exhibit, Petitioner relied primarily upon information publicly available online, information procured from [*source*], registration data from [*source*], and Petitioner's industry knowledge.[28]

Information reasonably available to Petitioner does not allow it to identify the proportion of total exports to the United States accounted for during the most recent 12-month period by the producers listed in this exhibit. Petitioner believes, however, the companies listed in **Exhibit I-13** account for the vast majority of subject imports.[29]

H. Factual Information Related to the Calculation of Normal Value of the Foreign Like Product in Non-Market Economy Countries (19 C.F.R. § 351.202(b)(7)(i)(C))

Vietnam is treated as a non-market economy for antidumping purposes.[30] Volume IV of these petitions contains the information necessary to substantiate LTNV allegations and factual information relevant to Vietnam.

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[27] List of Known Foreign Producers, attached as **Exhibit I-13**.

[28] Petitioner also provides in **Exhibit I-14** a list of non-subject producers that may have shipped chassis to the United States during the period of investigation. Non-Subject Foreign Producers, attached as **Exhibit I-14**.

[29] List of Known Foreign Producers, attached as **Exhibit I-13**.

[30] *See Raw Honey From the Socialist Republic of Vietnam*, 89 Fed. Reg. 64,411 (Dep't Commerce Aug. 7, 2024) (final results of antidumping duty changed circumstance review) ("Commerce finds {that Vietnam} remains a non-market economy (NME) country for purposes of U.S. antidumping duty (AD) law due to the sustained and pervasive government influence over its country's economic activities.").

I. The Names and Addresses of Each Person Believed to Benefit from a Countervailable Subsidy Who Exports the Subject Merchandise to the United States and the Proportion of Total Exports to the United States (19 C.F.R. § 351.202(b)(7)(ii)(A))

The names and addresses of the Mexican and Thai entities believed by Petitioner to be benefiting from countervailable subsidies and who have exported the chassis subject to these petitions are provided in **Exhibit I-13**.[31] Information reasonably available to Petitioner does not allow it to identify the proportion of total exports to the United States accounted for during the most recent 12-month period by the producers listed in this exhibit. As stated above, Petitioner believes, however, that the companies listed in **Exhibit I-13** account for the majority of subject imports.[32]

J. The Alleged Countervailable Subsidy and Factual Information Relevant to the Alleged Countervailable Subsidy (19 C.F.R. § 351.202(b)(7)(ii)(B))

Volumes V and VI of these petitions contain information concerning the alleged countervailable subsidies as well as factual information relevant to the alleged countervailable subsidies, the law, regulations, and decrees under which the subsidies were bestowed, the manner in which the subsidies were provided, and Petitioner's estimation – to the extent practicable – of the value of the subsidies to subject producers and exporters of chassis subject to these petitions.

K. The Volume and Value of the Merchandise Imported During the Most Recent Three-Year Period (19 C.F.R. § 351.202(b)(8))

According to official U.S. import statistics, imports from Mexico, Thailand, and Vietnam into the United States under the relevant HTS numbers totaled $941 million in 2022, $1.2 billion in 2023, and $996 million in 2024. Volume-based imports are collected in different units of

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31 List of Known Foreign Producers, attached as **Exhibit I-13**.

32 *Id.*

measure for the two relevant HTS numbers. Specifically, HTS number 8716.39.0090 is collected in units, while HTS number 8716.90.5060 is collected by weight (in kilograms). Consistent with the regulations, Petitioner provides here the volume and value of subject imports during the most recent three-year period:

Complete Chassis (8716.39.0090)	**2022**	**2023**	**2024**
U.S. Imports from --	Quantity in Units		
Mexico	30,560	41,481	40,550
Thailand	1,325	1,038	596
Vietnam	714	983	824
Subtotal, All Subject	32,599	43,502	41,970

Complete Chassis (8716.39.0090)	**2022**	**2023**	**2024**
U.S. Imports from --	LDPV, U.S. Dollars		
Mexico	$611,336,946	$861,259,680	$771,725,254
Thailand	$17,166,157	$13,925,526	$8,214,538
Vietnam	$730,707	$3,918,552	$6,371,506
Subtotal, All Subject	$629,233,810	$879,103,758	$786,311,298

Parts (8716.90.5060)	**2022**	**2023**	**2024**
U.S. Imports from --	Quantity in Kilograms		
Mexico	42,801,105	59,360,220	52,622,488
Thailand	24,582,064	20,733,390	5,654,152
Vietnam	5,170,040	1,070,406	3,072,936
Subtotal, All Subject	72,553,209	81,164,016	61,349,576

Parts (8716.90.5060)	**2022**	**2023**	**2024**
U.S. Imports from --	LDPV, U.S. Dollars		
Mexico	$188,179,459	$216,285,378	$178,518,768
Thailand	$107,972,551	$72,204,145	$18,635,544
Vietnam	$15,299,372	$5,142,516	$12,201,516
Subtotal, All Subject	$311,451,382	$293,632,039	$209,355,828

Source: USITC Dataweb

Petitioner notes that these HTS categories include, but are not specific to, chassis and chassis subassemblies. As a result, U.S. import statistics alone are insufficient to analyze import volumes and market share. As noted, completed chassis are primarily imported under the HTSUS code 8716.39.0090, while chassis parts are normally imported under HTSUS 8716.90.5060 and sometimes 8716.90.5010.[33] These HTSUS codes reflect "basket" categories, meaning each category includes products other than chassis and subassemblies subject to the scope of the investigations. For example, 8716.39.0090 may contain trailers used to transport goods that are not otherwise specified, while the parts code 8716.90.5060 covers parts that are used in all "trailers and semi-trailers," including dry vans and reefers.[34] As noted in the scope language, these investigations only cover subassemblies that are chassis frames, that are "for connection to the chassis frame," or "that connect to the chassis frame." Subassemblies used in dry vans, reefers, and flatbeds are non-subject. Therefore, while U.S. import data is helpful for measuring imports of intermodal chassis and subassemblies, official import statistics alone are not the best available data source.

For that reason, Petitioner also provides import data taken from bill of lading and export declaration data obtained from [*source*], which is discussed in greater detail in Section IV.D.4 and which provides the most detailed picture of subject imports at this time.[35] For example, the bill of lading data identifies which entries are frame subassemblies, which would otherwise be captured in the trailer parts basket category (*i.e.*, HTSUS code 8716.90.5060).

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[33] Customs Ruling E85372, attached as **Exhibit I-11**; *Chapter 87: Vehicles Other Than Railway or Tramway Rolling Stock, and Parts and Accessories Thereof*, Harmonized Tariff Schedule of the United States (2025) at 87-34, excerpts attached as **Exhibit I-12**.

[34] *Chapter 87: Vehicles Other Than Railway or Tramway Rolling Stock, and Parts and Accessories Thereof*, Harmonized Tariff Schedule of the United States (2025), excerpts attached as **Exhibit I-12**.

[35] *See* Market Share Analysis, attached as **Exhibit I-15**.

Therefore, Petitioner relies on this bill of lading analysis to determine market share during the period of investigation ("POI"). The analysis provided in **Exhibit I-15** includes available bill of lading data for all known subject and non-subject foreign producers.[36]

L. The Names and Addresses of Each Entity the Petitioner Believes Imports or Is Likely to Import the Subject Merchandise (19 C.F.R. § 207.11(b)(2)(iii); 19 C.F.R. § 351.202(b)(9))

The names and addresses of importers of chassis from Mexico, Thailand, and Vietnam, known to Petitioner at this time, are listed in **Exhibit I-13**.[37] Petitioner believes, however, that there may be additional importers of subject merchandise that it has been unable to identify. Petitioner respectfully requests that the Department and the Commission obtain this information from U.S. Customs and Border Protection, as Petitioner does not have access to this complete information.

IV. DUMPED AND SUBSIDIZED SUBJECT IMPORTS ARE A CAUSE OF MATERIAL INJURY AND THREAT THEREOF TO THE DOMESTIC CHASSIS INDUSTRY

A. Introduction

Imports of chassis from Mexico, Thailand, and Vietnam have caused material injury to the domestic industry. Unfairly traded chassis imports from these three countries have been substantial in the past three years. Demand for chassis was generally strong toward the beginning of the period of investigation. However, despite having available capacity,[38] U.S. producers were unable to take full advantage of U.S. demand because subject producers shipped large amounts of unfairly priced products to the United States. These subject imports took nearly $[#] in sales from

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[36] *Id.*; Petitioner does not have access to entry data for Canadian imports and therefore used chassis registration data for Canadian chassis obtained from [*source*] as a proxy for Canadian entries.

[37] List of Known Foreign Producers, attached as **Exhibit I-13**.

[38] *See* Petitioner's Trade and Financial Data, attached as **Exhibit I-16**.

Coalition members and $[# *source*] and captured market share.[39] U.S. purchasers took advantage of the glut of subject imports to stock up on chassis. As a result, while demand for containerized shipping has generally remained strong, U.S. customers are not purchasing new chassis at the typical annual rate. Instead, customers are working off built-up inventories, which were predominantly from the subject countries. The effect of these imports on the production and profitability of the domestic chassis industry has been severe, causing operating income to plummet more than [#]% and dragging capacity utilization below [#].[40]

Subject imports also pose a threat of further material injury to the domestic industry. Because subject imports so degraded the domestic industry's financial performance, the industry is much more vulnerable to further injury from the subject imports. Additionally, prior to and during the POI, subject producers added capacity dedicated to export production and rapidly surged chassis to the United States. Now that demand has softened, subject producers likely have substantial unused capacity and existing inventories that would be directed at the U.S. market as soon as demand returns.

B. The Domestic Like Product Consists of Certain Chassis and Subassemblies Thereof Covered by the Scope

In determining whether an industry in the United States is materially injured or threatened with material injury by reason of imports of the subject merchandise, the Commission first defines the domestic like product.[41] The "domestic like product" is defined as "a product which is like, or in the absence of like, most similar in characteristics and uses with, the article subject to an

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39 Lost Sales and Lost Revenues, attached as **Exhibit I-6**.

40 *See* Petitioner's Trade and Financial Data, attached as **Exhibit I-16**.

41 *See NEC Corp. v. Dep't of Commerce*, 36 F. Supp. 2d 380, 382 (Ct. Int'l Trade 1998).

investigation . . . ."[42] The like product determination is a factual one made on a case-by-case basis.[43] The Commission generally considers the following factors: (1) physical characteristics and uses; (2) interchangeability; (3) channels of distribution; (4) customer and producer perceptions of the products; (5) common manufacturing facilities, production processes and production employees; and, where appropriate, (6) price.[44] In evaluating these factors, the Commission looks for clear dividing lines and disregards minor variations.[45]

As was the case in the China investigation, the Commission should define a single like product coextensive with the scope in this investigation. While there are some differences in size and design, all in-scope chassis share the same general physical characteristics, including overall shape and materials. All chassis are designed for use in the carriage of containers for transport. In addition, chassis produced to the same dimensions and specifications are generally interchangeable. All chassis are sold through the same or similar channels of distribution – (1) end users (typically trucking companies or chassis rental companies) or (2) distributors.[46] All chassis covered under the scope are manufactured in common facilities, using similar production processes and the same production employees. The Commission should accordingly determine that chassis represent a single domestic like product, coextensive with the scope identified above.

In addition, unfinished and unassembled chassis in the form of chassis subassemblies should also be part of the same domestic like product as finished and assembled chassis. Because

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42 19 U.S.C. § 1677(10).

43 *See, e.g.*, *NEC*, 36 F. Supp. 2d at 383.

44 *See Cleo, Inc. v. United States*, 501 F.3d 1291, 1295 (Fed. Cir. 2007).

45 *See id.*

46 *See, e.g.*, CMB International, CIMC (Vehicles) Group Excerpt at 11, excerpts attached as **Exhibit I-17** (discussing "direct sales and distributors").

the subassemblies are an intermediate product whose ultimate use is to be processed into chassis, the Commission typically uses its semi-finished like products analysis to examine whether they should be part of the same domestic like product.[47] Indeed, in the investigation into chassis from China, the Commission denied CIMC's request to treat chassis and subassemblies as separate like products, instead "defin{ing} a single domestic like product consisting of all chassis and subassemblies thereof" under a semifinished domestic like product analysis.[48]

In a semifinished product analysis, "the Commission examines the following: (1) the significance and extent of the processes used to transform the upstream into the downstream articles; (2) whether the upstream article is dedicated to the production of the downstream article or has independent uses; (3) differences in the physical characteristics and functions of the upstream and downstream articles; (4) whether there are perceived to be separate markets for the upstream and downstream articles; and (5) differences in the costs or value of the vertically differentiated articles."[49]

First, chassis subassemblies – such as chassis frames or running gear assemblies for connection to chassis frames – are dedicated to the production of chassis. For example, chassis frames are produced to the exact dimensions required for the final chassis and cannot be used to produce any different product.

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[47] *See, e.g.*, *Crystalline Silicon Photovoltaic Cells and Modules from China*, Inv. Nos. 701-TA-481 and 731-TA-1190, USITC Pub. 4295 (Dec. 2011) (Prelim.) at 10.

[48] *See Chassis and Subassemblies from China*, Inv. Nos. 701-TA-657, USITC Pub. 5187 (May 2021) (Final) at 11-12, excerpts attached as **Exhibit I-3**.

[49] *See Chassis and Subassemblies from China*, Inv. Nos. 701-TA-657 and 701-TA-1537, USITC Pub. 5120 (Sept. 2020) (Prelim.) at 6 n.19 (citing *Fluid End Blocks from China, Germany, India, and Italy*, Inv. Nos. 701-TA-632-635 and 731-TA-1466-1468, USITC Pub. 5017 (Feb. 2020) (Prelim.) at 5 n.16; *Glycine from India, Japan, and Korea*, Inv. Nos. 731-TA-1111-1113 , USITC Pub. 3921, (May 2007) (Prelim.) at 7; *Artists' Canvas from China*, Inv. No. 731-TA-1091, USITC Pub. 3853 (May 2006) (Final) at 6; *Live Swine from Canada*, Inv. No. 731-TA-1076, USITC Pub. 3766 (Apr. 2005) (Final) at 8 n.40; *Certain Frozen Fish Fillets from Vietnam*, Inv. No. 731-TA-1012, USITC Pub. 3533 (Aug. 2002) (Prelim.) at 7 n.27).

Second, there are not significant independent markets for the upstream and downstream articles. Chassis subassemblies are typically internally consumed by the same manufacturer to produce a finished chassis or shipped to the United States and internally consumed by an affiliated assembler to produce a finished chassis.

Third, there are not significant differences in the physical characteristics or functions of chassis subassemblies and the chassis themselves. Both subassemblies and chassis are made primarily from steel products and ultimately have an intended use for cargo transportation. All subassemblies, as defined in the scope, are intended to be included as parts of a final finished chassis and therefore have virtually no physical differences when compared to the finished chassis.

Fourth, there is only a moderate difference in the cost or value of the vertically differentiated articles. Chassis subassemblies are, as would be expected, somewhat less expensive than the final chassis, as the components are inputs into the manufacture of the chassis. The subassemblies as a whole, however, account for a significant majority of the total cost of goods sold for the final chassis.[50]

Finally, the processes used to transform the chassis subassemblies into the chassis are not complicated or extensive. The predominant portion of the production process is related to producing the subassemblies themselves, including fabricating and manufacturing. U.S. producers fabricate the steel and other components necessary to create the finished chassis in the stages identified above. This production process generally corresponds to the production of the subassemblies identified in the scope. Indeed, this is precisely why several foreign producers have

[50] *See, e.g.*, Customs Ruling R02804, attached as **Exhibit I-18** (noting that the value of the axles – which are combined into the axle assembly or running gear assembly – "generally surpasses the value of all other part{s} of the chassis").

established finishing operations in the United States, while retaining the most cost-intensive portion of production—fabricating the frame and running gear—in the subject country.

C. There Is a Single Domestic Industry Consisting of All Domestic Producers

Section 771(7)(4) of the Act defines the domestic industry as the domestic "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[51] The Commission should find that there is a single domestic industry manufacturing chassis in the United States.

Petitioner submits that companies that merely assemble subject chassis subassemblies in the United States are not producing chassis in the United States, and these companies should not be included in the domestic industry. In many other investigations, including the previous chassis investigation,[52] the Commission has found that companies with mere assembly operations should not be included in the domestic industry.[53] For example, CIE Intermodal Equipment, LLC (d/b/a CIE Manufacturing) is a wholly owned affiliate of state-owned Chinese manufacturer CIMC, which formerly shipped chassis from China and presently ships chassis from Thailand for CIE Manufacturing to assemble in the United States.[54] Moreover, even if CIE Manufacturing's assembly operation were considered domestic manufacturing, this company is a related producer

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[51] 19 U.S.C. § 1677(4)(A).

[52] *See Chassis and Subassemblies from China*, Inv. Nos. 701-TA-657, USITC Pub. 5187 (May 2021) (Final) at 21-22, excerpts attached as **Exhibit I-3**.

[53] *See, e.g.*, *Quartz Surface Products from China*, Inv. Nos. 701-TA-606 and 731-TA-1416, USITC Pub. 4794 (June 2018) (Prelim.) at 15; *Multilayered Wood Flooring from China*, Inv. Nos. 701-TA-476 and 731-TA-1179, USITC Pub. 4278 (Nov. 2011) (Final) at 7-8.

[54] *See* Letter from White & Case LLP to Trade Remedy and Law Enforcement Directorate, re: *Written Argument of CIMC Intermodal Equipment, LLC* (Mar. 19, 2024) (PUBLIC VERSION) at 3, excerpts attached as **Exhibit I-19** ("CIE is a U.S. company with chassis facilities in South Gate, California, and Emporia, Virginia, where the company assembles complete chassis using frames imported from {Dee Siam}.") (emphasis added).

with a primary interest in importing subject merchandise from Thailand and may be excluded from the domestic industry on that basis. Likewise, the Commission may consider Pitts to be primarily interested in imports from Vietnam based on their import arrangements with THACO, discussed below.[55]

D. Subject Imports Are Causing Material Injury to the Domestic Industry

In determining whether a domestic industry is experiencing present material injury caused by unfairly traded imports, the Commission considers:

(1) the volume of imports of the subject merchandise;

(2) the effect of imports of that merchandise on prices in the United States for domestic like products; and

(3) the impact of imports of such merchandise on domestic producers of domestic like products.[56]

An analysis of these factors shows that the domestic chassis industry is suffering material injury by reason of subject imports.

1. *The Commission Should Cumulate Subject Imports*

For purposes of evaluating the volume and price effects for a determination of material injury by reason of subject imports, section 771(7)(G)(i) of the Act requires the Commission to cumulate subject imports from all countries as to which petitions were filed on the same day, if such imports compete with each other and with the domestic like product in the U.S. market.[57] In assessing whether subject imports compete with each other and with the domestic like product, the Commission generally has considered four factors:

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55 *THACO exports first batch of 870 semi-trailers to US*, Vietnam+ (Dec. 17, 2021), attached as **Exhibit I-26**.

56 19 U.S.C. § 1677(7)(B).

57 *Id.* § 1677(7)(G)(i). None of the exceptions to cumulation apply. *See id.* § 1677(7)(G)(ii).

(1) the degree of fungibility between subject imports from different countries and between subject imports and the domestic like product . . . ;

(2) the presence of sales or offers to sell in the same geographic markets of subject imports from different countries and the domestic like product;

(3) the existence of common or similar channels of distribution for subject imports from different countries and the domestic like product; and

(4) whether the subject imports are simultaneously present in the market.[58]

While no single factor is necessarily determinative, and the list of factors is not exhaustive, these factors are intended to provide the Commission with a framework for determining whether the subject imports compete with each other and with the domestic like product.[59] Only a "reasonable overlap" of competition is required.

Each of the Commission's factors indicates that the imports subject to these petitions compete with each other and with the domestic like product. First, chassis produced in the subject countries and in the United States are highly fungible. Indeed, all chassis must comply with National Highway Traffic Safety Administration and Federal Motor Carrier Safety Administration regulations and Federal Motor Vehicle Safety Standards to operate in U.S. ports and on U.S. highways.[60] Chassis are also designed to meet various AAR, ABS, and ISO standards.[61] Foreign producers and U.S. assemblers of subject merchandise advertise their products as meeting these

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[58] *See Certain Cast-Iron Pipe Fittings from Brazil, the Republic of Korea, and Taiwan*, Inv. Nos. 731-TA-278-280, USITC Pub. 1845 (May 1986) (Final) at 8, *aff'd*, *Fundicao Tupy, S.A. v. United States*, 12 CIT 6, 6-7, 678 F. Supp. 898, 899 (1988), *aff'd*, 859 F.2d 915, 915 (Fed. Cir. 1988).

[59] *See, e.g.*, *Wieland Werke, AG v. United States*, 13 CIT 561, 565-67, 718 F. Supp. 50, 54 (1989).

[60] *See generally* 49 C.F.R. §§ 571.1-571.500; *id.* § 393.126(b)

[61] *See American Association of Railroads Manual of Standards and Recommended Practices Intermodal Equipment Manual*, American Association of Railroads (2017), excerpts attached as **Exhibit I-8**; *Freight Containers - Container Equipment Data Exchange (CEDEX) - Part 5: General Communication Codes for Chassis*, International Organization for Standardization (2014), attached as **Exhibit I-10**, and *Rules for Certification of Cargo Containers*, American Bureau of Shipping (1998), excerpts attached as **Exhibit I-9**.

standards.[62] Moreover, the number of lost sales identified in **Exhibit I-6** confirms that chassis from any subject country can easily be substituted for domestically produced chassis.[63]

Second, the record here will show that imports from each of the subject countries compete with imports from the other subject countries and with the domestic like product throughout the U.S. market. Chassis, regardless of source, are sold nationwide, with the ability to be used throughout the country. For instance, CIE Manufacturing has assembly locations on both the East and West Coasts to service these geographic regions.[64] Moreover, Chassis from these countries are used to transport goods in every region of the United States.

Third, the imports from the subject countries and the domestic like product are sold through the same channels of distribution: to distributors/leasing companies and end users. The record will demonstrate that subject imports and the domestic like product compete directly in all channels. For example, the lost sales/lost revenue data show [*sales methodologies*].[65]

Finally, the subject imports and the domestic like product have been simultaneously present in the U.S. market throughout the POI. Bill of lading data show that subject imports from each country entered in nearly every month of the POI.[66] Chassis produced by domestic producers were also present in the U.S. market throughout the POI.[67]

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62 *See, e.g.*, Examples of Chassis Producers and Assemblers Meeting U.S. Standards, attached as **Exhibit I-20**.

63 Lost Sales and Lost Revenue, attached as **Exhibit I-6**.

64 *CIE Manufacturing Homepage*, CIE, last accessed Feb. 18, 2025, attached as **Exhibit I-21**.

65 *See* Lost Sales and Lost Revenues, attached as **Exhibit I-6**.

66 *See* Import Shipment & Market Share Analysis, attached as **Exhibit I-15**.

67 *See* Petitioner's Trade and Financial Data, attached as **Exhibit I-16**.

In sum, these Petitions are being filed on the same day and subject imports compete with each other and with the domestic like product in the U.S. market, thereby satisfying the threshold requirement for cumulation. Subject imports from each subject country are fungible with the domestic like product and each other, subject imports from each subject country and the domestic like product are sold in the same channels of distribution and in similar geographic markets, and subject imports from each subject country and the domestic like product have been simultaneously present in the U.S. market. As such, there is a reasonable overlap of competition between the domestic like product and imports from each subject country and between imports from each subject country. The Commission should therefore analyze subject imports on a cumulated basis for its analysis of whether the domestic industry is materially injured by reason of subject imports.

2. *Subject Imports Are Not Negligible*

The Commission generally will consider imports from a subject country to be negligible if they account for less than three percent of total imports of the subject merchandise.[68] The Commission may make its determination using "reasonable estimates on the basis of available statistics."[69] The Commission has discretion when choosing what source to rely on to determine negligibility.[70] In assessing negligibility, the Commission will examine "the most recent 12-month period for which data are available that precedes" the filing of the petition.[71]

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[68] 19 U.S.C. §§ 1673b(a)(l), 1673d(b)(l), 1677(24)(A)(i).

[69] *Certain Oil Country Tubular Goods from India, Korea, the Philippines, Taiwan, Thailand, Turkey, Ukraine, and Vietnam*, Inv. Nos. 701-TA-499-500 and 731-TA-1215-1217 and 1219-1223, USITC Pub. 4489 (Sept. 2014) (Final) at 16.

[70] *See, e.g.*, *Certain Cold-Rolled Steel Products from Argentina, Brazil, Japan, Russia, South Africa, and Thailand*, Inv. Nos. 701-TA-393 and 731-TA-829-830, 833-834, 836 and 838, USITC Pub. 3283 (Mar. 2000) (Final) at 9-10.

[71] 19 U.S.C. § 1677(24)(A)(i).

The most recent 12-month period for which data are available is January 2022-December 2024. As shown in **Exhibit I-15** bill of lading and export documents establish that, during this period, imports from Mexico, Thailand, and Vietnam accounted for [#]%, [#]%, and [#]% of imports in 2024, respectively.[72] As such, imports from these countries exceeded the negligibility threshold and thus satisfy the statutory threshold for investigation.

3. *Conditions of Competition*

a. Chassis Are Primarily Sold on the Basis of Price

Price is a key condition of competition in the chassis industry. The Commission has previously found that there is a moderate-to-high degree of substitutability between domestically produced and foreign produced chassis.[73] In the previous chassis investigation, "{t}he overwhelming majority of purchasers (22 of 25) reported that they 'usually' or 'sometimes' purchase the lowest-priced product."[74] Here too, U.S. chassis compete with subject imports on the basis of price.

b. Chassis Demand is Traditionally Tied to Demand for Containerized Transportation and Predictable Fleet Replacement

Historically, U.S. chassis demand has been relatively predictable. As the Commission recognized in the previous chassis investigation, "U.S. Demand for chassis is related to shipping trends, including freight movement for products imported into the United States and exported from the United States, and freight movement within the United States."[75] As shown below,

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72 *See* Import Shipment & Market Share Analysis, attached as **Exhibit I-15**.

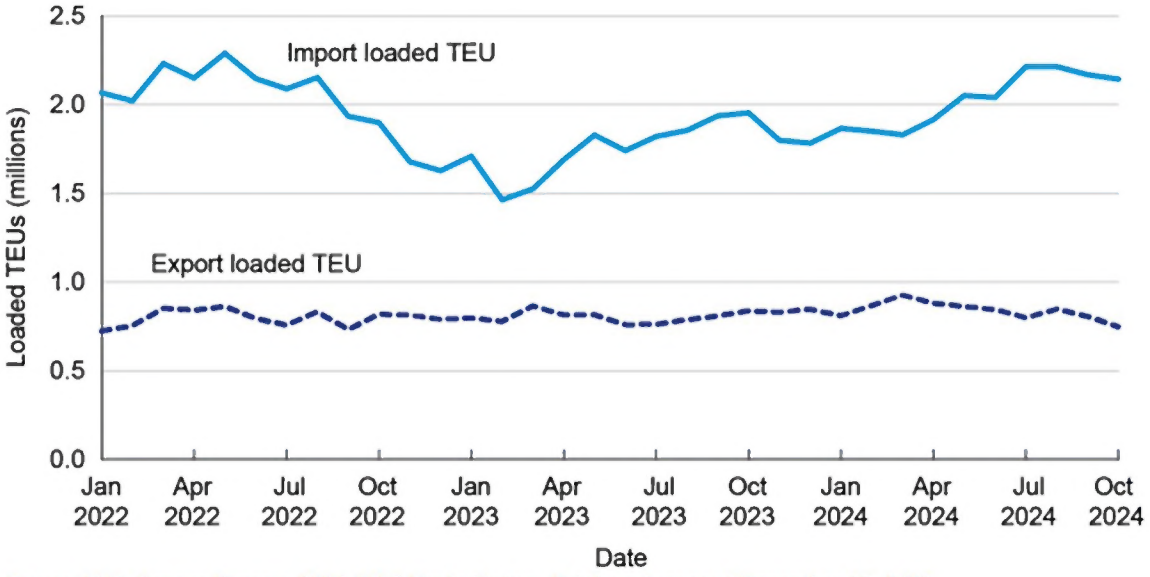
73 *See Chassis and Subassemblies from China*, Inv. Nos. 701-TA-657, USITC Pub. 5187 (May 2021) (Final) at 35, excerpts attached as **Exhibit I-3**.

74 *Id.*

75 *Id.* at 29-30.

containerized import volumes were higher in the first half of 2022 before declining in the second half of 2022. Containerized imports then rebounded through the end of the POI.

Figure 5: Containerized Import and Export SWTs (in Kilograms) by Month, January 2022-October 2024



Source: U.S. Census Bureau. 2024. USA Trade Online. October. Accessed December 15, 2024. http://usatrade.census.gov/.

Additionally, each year a certain number of chassis "age out" and must be replaced.[76] Leasing companies and chassis pools know far in advance what percentage of their fleet will turnover each year and place orders commensurately.

4. *The Volume of Subject Imports Is Significant*

In evaluating the volume of imports, the Commission considers whether the absolute and relative volumes of imports, as well as changes in volumes, are significant. The available data show that the volume of subject imports, both in absolute terms and relative to U.S. consumption is significant within the meaning of the relevant statutory provision.

[76] *Id.* at 30-31.

a. The Volume of Subject Imports Is Significant in Absolute Terms

The volume of subject imports was significant in absolute terms during the POI. In a typical year, U.S. market demand for chassis is roughly 35,000 chassis.[77] However, in 2021, demand for transport of containerized freight increased and peaked in mid-2022 (*see* Figure 5). This increase led to increased demand for chassis. Yet, subject producers shipped far more chassis than the market actually required. This is apparent from the gap between the number of chassis imported and the number of chassis registered. In 2022, subject producers exported [##] chassis, but only [##] subject chassis were registered from these producers.[78]

Subject importers continued to ship large volumes in 2023, even as demand for containerized shipping was declining.[79] In 2024, absolute volumes for U.S., subject, and nonsubject producers dropped off significantly, despite ample and increasing underlying demand for containerized freight transportation (*see* Figure 5). However, demand for chassis did not rebound because of the large volumes of subject imports that had previously flooded the U.S. market that were still present in the United States as inventory. This supply overhang replaced sales that would otherwise have been made in 2023 and 2024.

The subject producers' public statements corroborate the surge in imports and the rush to capture U.S. demand during the investigation period. In Thailand, CIMC completed a new production facility dedicated to U.S. exports in the first half of 2021 and began full production in June 2021.[80] CIMC's production at this new facility began just months after the Commission and

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77 *Id.* at 46.

78 *Compare* Subject Producer Registration Compilation, attached as **Exhibit I-22**, *with* Import Shipment & Market Share Analysis, attached as **Exhibit I-15**.

79 *See* Import Shipment & Market Share Analysis, attached as **Exhibit I-15**.

80 EAPA Case No. 7810 Onsite Verification Report (Jan. 26, 2024) at 2, 7, excerpts attached as **Exhibit I-23**.

Department assessed preliminary AD/CVD duties on its Chinese parent company's chassis.[81] In July 2022, Thai producer Panus announced it signed an "exclusive distribution agreement to supply intermodal equipment to the newly established Panus USA LLC."[82] Under the agreement, Panus began supplying chassis in March 2022 and promised to "supply over 3,000 semi-trailers to the North American market in 2022, 7,000 trailers in 2023, and 12,000 in 2024."[83] Vietnamese producer THACO announced an even more aggressive agreement for 15,500 chassis in 2022 and 25,000 in 2023.[84] In Mexico, ATRO Trailers also began expanding into the United States shortly before the POI,[85] and GG Trailers opened a 6,000 chassis production facility intended, in part, to serve the U.S. market.[86]

b. Subject Import Market Share Was Significant During the Period

The volume of subject imports is even more substantial when viewed in relative terms. Petitioner does not have reasonable access to the information needed to calculate apparent domestic consumption and thus exact market shares over the full POI. However, an approximation of market shares based on Coalition members' U.S. shipments and bill of lading and export registration data demonstrate that U.S. producers' market share decreased from [#]% from 2022

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81 *Certain Chassis and Subassemblies Thereof from the People's Republic of China*, 86 Fed. Reg. 56 (Dep't Commerce) (prelim. affirm. countervailing duty deter.); *Certain Chassis and Subassemblies Thereof from the People's Republic of China*, 86 Fed. Reg. 12,616 (Dep't Commerce Mar. 4, 2021) (prelim. affirm. determ. of sales at less than fair value).

82 *Thailand trailer manufacturer Panus enters US market*, Trailer Body Builders (July 8, 2022), attached as **Exhibit I-24**.

83 *Thailand's Leading Trailer Manufacturer Successfully Enters US Market*, Panus (May 5, 2022), attached as **Exhibit I-25**.

84 *THACO exports first batch of 870 semi-trailers to US*, Vietnam+ (Dec. 17, 2021), attached as **Exhibit I-26**.

85 ATRO Remolques LinkedIn Profiles, attached as **Exhibit I-27**.

86 *GG Trailers Opens Plant in Coahuila; Will Produce 6 Thousand Container Chassis Per Year*, T21 (Aug. 10, 2022), attached as **Exhibit I-28**.

to [#]% in 2024.[87] Simultaneously, subject imports increased from [#]% to [#]% of apparent domestic consumption.[88]

MARKET SHARE APPROXIMATION (in units)[89]

	2022	2023	2024
Subject Imports	[ ]	[ ]	[*10,000*]
Nonsubject Imports	[ ]	[ ]	[ ]
U.S. Producers' U.S. Shipments	[ ]	[ ]	[ ]
Total (Apparent U.S. Consumption)	[ ]	[ ]	[ ]
Subject Imports as a Share of Total	[*75%*]	[ ]	[ ]
Nonsubject Imports as a Share of Total	[ ]	[ ]	[ ]
US Producers' U.S. Shipments as a Share of Total	[ ]	[ ]	[ ]

5. *The Subject Imports Have Had Negative Price Effects on the Domestic Like Product*

In evaluating the effect of subject imports on prices, the Commission must consider whether there has been significant underselling by the subject imports, and whether imports significantly suppressed or depressed domestic prices.[90] Subject imports compete directly with the domestic like product, as dumped and subsidized subject imports serve all geographic markets in the United States and are built to the same technical standards for the same uses as chassis from U.S. producers. Being comparable in all other major respects, subject imports and the domestic

87 Import Shipment & Market Share Analysis, attached as **Exhibit I-15**.

88 *Id.*

89 *See id.*

90 19 U.S.C. § 1677(7)(C)(ii).

like product compete primarily on the basis of price, meaning subject producers can use unfair pricing to take sales and capture market share.

Subject imports undersold the domestic like product throughout the POI. Large chassis purchases are typically made through requests for quotes, wherein the purchaser identifies the type and number of chassis needed and entertains price quotes from domestic and foreign producers. Price is generally the only distinguishing factor these large purchasers consider. For example, at the beginning of the investigation period, [*narrative of quote volume*].[91] According to market intelligence, [*narrative of quote pricing*].[92] The low pricing environment already existed at the beginning of the POI. In the beginning of 2023, [*narrative of lost sale and pricing*] per-unit quote.[93] As demand softened, subject producers lowered prices even further to capture remaining available sale volume.[94] On this basis, the Commission should determine that subject imports had significant negative price effects on the domestic like product.

The Commission will need to collect detailed information regarding domestic and subject products to assess the extent of underselling in this investigation. Petitioner recommends that the Commission collect data on the following pricing products:

Product 1. Tandem axle gooseneck chassis for carriage of 40' ISO containers, with steel wheels, and with mechanic suspension

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91 Declaration of [*source*], attached as **Exhibit I-29**.

92 *Id.*

93 *Id.*

94 *Id.*

Product 2. Extendable Tandem axle chassis for carriage of 20' ISO containers, with steel wheels, and with mechanic suspension

Product 3. Triaxle chassis capable of extension using a sliding suspension for carriage of heavy 20' up to 40' containers, with steel wheels, and with mechanic suspension

Product 4. Tandem axle chassis capable of extension using an extending frame for carriage of heavy 20' up to 40' containers, with steel wheels, and with mechanic suspension.

Further evidence of the negative price effects of the subject imports appears in the reports of lost sales and lost revenues. Petitioner has provided information regarding lost sales and revenues with an estimated total value of nearly [#] during the POI.[95] These lost sales and revenues establish that imports of subject chassis are competing directly with the domestic like product, so that unfairly low average unit values ("AUV") for subject imports have a direct effect on domestic prices and sales.

6. *The Adverse Impact of Subject Imports on the Domestic Industry Is Significant*

In examining the impact of subject imports on the domestic industry, the Commission is instructed to "evaluate all relevant economic factors which have a bearing on the state of the industry in the United States."[96] These factors include, but are not limited to:

(I) actual and potential decline in output, sales, market share, profits, productivity, return on investments, and utilization of capacity;

(II) factors affecting domestic prices;

(III) actual and potential negative effects on cash flow, inventories, employment, wages, growth, ability to raise capital, and investment;

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[95] *See* Lost Sales and Lost Revenues, attached as **Exhibit I-6**. Pursuant to 19 C.F.R. § 207.11(b)(2)(v), Petitioner has provided information on lost sales and lost revenue that is reasonably available to it. This information is also being submitted electronically as required by the Commission's regulations.

[96] 19 U.S.C. § 1677(7)(C)(iii).

(IV) actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative or more advanced version of the domestic like product; and

(V) the magnitude of the margin of dumping.[97]

The Commission is directed to evaluate all factors "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[98] A review of these factors shows substantial indicators of injury to the domestic industry by reason of the subject imports in this investigation.

a. The Domestic Industry's Production and Trade Indicators Demonstrate the Injury Caused by Subject Imports

Unfairly priced subject imports have negatively impacted the financial performance of the domestic industry by taking substantial sales and market share from U.S. producers. In 2022, despite years of injury from dumped and subsidized Chinese imports, U.S. producers quickly ramped up capacity to meet domestic demand.[99] Yet, Petitioner's capacity utilization rates were only [#]% in 2022 and [#]% in 2023 before plummeting to [#]% in 2024.[100] While Coalition members' commercial shipments increased slightly from 2022 to 2023, shipments dropped [#]% over the POI.[101] Total net sales exhibited a similar trend, falling [#]% from 2022 to 2024.[102] Along with deteriorating production, capacity utilization, and shipments, Coalition members were forced to lay off or reassign workers. The total number of production workers at Coalition members' facilities decreased [#]% over the POI, and total hours worked declined

97 *Id.* §§ 1677(7)(C)(iii)(I)-(V).

98 *Id.* § 1677(7)(C)(iii).

99 *See* Petitioner's Trade and Financial Data, attached as **Exhibit I-16**.

100 *See id.*

101 *See id.*

102 *See id.*

[ ]%.[103] These major negative effects on American workers constitutes injury to the domestic industry caused by unfairly traded subject imports.

b. Subject Imports Have Caused Domestic Producers to Lose Sales and Revenues

Subject imports have used unfair pricing to take substantial sales and revenues from domestic producers in recent years. As demonstrated in Exhibit I-6, the Coalition has identified lost sales and revenues with an estimated total value of $[#].[104] And total lost sales and revenue are undoubtedly significantly higher, as U.S. producers are often unable to decisively document their lost sales, particularly among lower volume purchasers that may not even offer U.S. producers an opportunity to obtain the business.

c. Subject Imports Adversely Affected the Domestic Industry's Financial Performance During the POI

Subject imports had a severe adverse impact on the domestic industry's financial performance during the POI. At the beginning of the period, subject imports took [#]% of the market,[105] and Coalition members' operating income margin was already at [#].[106] As subject imports continued to flood into the United States and create a supply overhang, the Coalition members' operating income as a percent of sales fell nearly [#] to [#]% in 2024.[107] The decline in Coalition members' in net income as a percent of sales was even more severe, dropping from [#]% to [#]%.[108] Overall operating income fell by more than

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103 *See id.*

104 Lost Sales and Lost Revenue, attached as **Exhibit I-6.**

105 *See* Import Shipment & Market Share Analysis, attached as **Exhibit I-15**.

106 *See* Petitioner's Trade and Financial Data, attached as **Exhibit I-16**.

107 *See id.*

108 *See id.*

$[#] from 2022-2024.[109] Additionally, any increases in per-unit value were insufficient to be economically meaningful, as Coalition members experienced a per-unit operating [*description*] in 2024.[110] Indeed, these higher AUVs and [*description*] reflect the domestic industry's scramble find any remaining demand that had not already been absorbed by the subject imports, including in higher-end and niche product lines.

Subject imports also harm the U.S. industry's ability to make capital expenditures and recover the necessary return on existing investments. U.S. producers made more than $[#] in capital investments in 2022.[111] These investments were made to ensure U.S. producers could meet any level of U.S. demand—even anomalous demand. Yet subject imports rendered these investments largely underutilized and degraded the returns U.S. producers could make from these investments in 2023 and 2024.[112] Moreover, the influx and persistence of subject imports in the U.S. market forced U.S. producers to pull back on new capital investments, resulting in [#]% decrease in capital expenditures over the investigation period.[113]

d. The Estimated Dumping Margins Are High

Coalition members have been forced to compete with imports dumped at substantial margins. Petitioner estimates dumping margins for the subject merchandise at the following levels:[114]

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109 *See id.*

110 *See id.*

111 *See id.*

112 *See id.*

113 *See id.*

114 Petition for the Imposition of Antidumping Duties, *Certain Chassis and Subassemblies Thereof from Mexico*, vol. II (Feb. 26, 2025) at 5; Petition for the Imposition of Antidumping Duties, *Certain Chassis and Subassemblies Thereof from Thailand,* vol. III (Feb. 26, 2025) at 20; Petition for the Imposition of Antidumping Duties, *Certain Chassis and Subassemblies Thereof from the People's Republic of Vietnam*, vol. IV (Feb. 26, 2025) at 19.

Subject Country	Estimated Dumping Margin
Mexico	32.37%
Thailand	234.06%
Vietnam	304.68%

M. Subject Imports Threaten Material Injury to the Domestic Industry

As the discussion above demonstrates, subject imports have caused material injury to the domestic chassis industry. Additionally, reasonably available evidence shows that subject imports threaten the domestic industry with further material injury.

As an initial matter, the Department should cumulate subject imports for its threat analysis. The Act provides that in evaluating the threat of material injury, the Commission may cumulatively assess the volume and price effects of imports of the subject merchandise from all countries with respect to which the petitions were filed on the same day, "if such imports compete with each other and with domestic like products in the United States market." As these Petitions cover all of the subject countries, the first requirement is met. And as demonstrated in Section IV.D.1 above, the subject imports all compete with each other and with the domestic like product in the U.S. market. Thus, the statutory requirements for cumulation in a threat investigation have been satisfied.

In determining whether subject imports threaten a domestic industry with material injury, the Commission must consider a number of factors. These factors include:

- A significant rate of increase of the volume or market penetration of imports of the subject merchandise;
- Price effects of the subject imports;
- The nature of any countervailable subsidies;
- Existing unused production capacity or potential increases in production capacity in the exporting country;

- Inventories of the subject merchandise; and
- The potential for product-shifting.
- Any other demonstrable adverse trend that indicates there is likely to be material injury (whether or not it is actually being imported at the time)[115]

These factors are present in this case and will be shown throughout the investigation.

Increase in Imports: As discussed previously, available bill of lading and export data show that foreign producers rushed merchandise into the United States in excess of what the market demanded. Additionally, subject producers continue to ship large volumes of chassis to the United States during the investigation period. This initial rush of imports and their persistent presence in the market has taken market share and negatively impacted the domestic industry, causing shipments and profitability to decline significantly. And imports are likely to continue at high volumes because of the large amount of U.S.-dedicated production capacity the subject producers recently brought online.

Increasing chassis imports from the subject countries will be particularly injurious as U.S. demand for chassis remains suppressed going forward. As discussed, there are still large volumes of subject chassis in the United States as inventory. This has created a supply-demand imbalance, wherein chassis demand is relatively low despite healthy demand for containerized shipping. However, while U.S. producers miss out on what should be a period of healthy demand, analysts anticipate that freight demand and overall U.S. economic growth will soften in 2025.[116] If this is the case, the presence of any volume of unfairly traded imports will be highly injurious to the domestic industry.

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115 19 U.S.C. § 1677(7)(F)(i).

116 Cathy Morrow Robertson, *Slow growth predicted for US economy, freight demand in 2025: Inland24*, Journal of Commerce (Oct. 1, 2024), attached as **Exhibit I-30**.

Price Effects: The Act provides that, in determining whether the domestic industry is threatened with material injury, the Commission should consider "whether imports of the subject merchandise are entering at prices that are likely to have a significant depressing or suppressing effect on domestic prices, and are likely to increase demand for further imports."[117] This was the case during the investigation period and threatens to continue in the future, without relieve. As discussed, subject imports undersold the domestic industry to win sales.[118] This pervasive underselling caused domestic producers to lose sales and revenue. Customers cut off contracts early in favor of subject imports,[119] and U.S. producers were forced to either lower prices further or lose additional sales.[120] Moreover, as demand softens, subject producers will have even more incentive to offer chassis at even lower prices to win the remaining available sales.

Nature of the Subsidies: As part of its threat analysis, the Commission must consider "if a countervailable subsidy is involved" and, in particular, "whether the countervailable subsidy is a subsidy described in Article 3 or 6.1" of the WTO Agreement on Subsidies and Countervailing Measures.[121] Article 3 of the WTO Subsidies Agreement describes subsidies that are prohibited because they are contingent upon export performance or upon the use of domestic over imported goods.[122] As discussed, in Volumes V and VI of these petitions, the governments of Mexico and Thailand provide countervailable subsidies that encourage the expansion of capacity, production, and export of the subject merchandise to the United States.

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117 19 U.S.C. § 1677(7)(F)(i)(IV).

118 Declaration of [*source*], attached as **Exhibit I-29**.

119 Lost Sales/Lost Revenue, attached as **Exhibit I-6**; Declaration of [*source*], attached as **Exhibit I-29**.

120 Declaration of [*source*], attached as **Exhibit I-29**.

121 19 U.S.C. § 1677(7)(F)(i)(I).

122 *Agreement on Subsidies and Countervailing Measures* (Apr. 15, 1994), Marrakesh Agreement Establishing the World Trade Organization, Annex 1, 1867 U.N.T.S. 14 at Art. 3.

In Mexico, subject producers benefit from numerous countervailable subsidy programs. These include direct and indirect federal tax incentives; preferential lending; grant programs; and state-level investment programs. In Thailand, the government provides countervailable subsidies to support industrial manufacturers, including those in the transportation sector. In recent countervailing duty investigations, the Department has determined that the government of Thailand provides countervailable subsidies to select Thai industries and exporter, and the Department has also determined that the government of Thailand provides electricity to producers for less than adequate remuneration. Other subsidies include investment promotion exemptions for duties on machinery and raw materials; income tax exemptions on net profits for favored activities; income tax reductions for special locations and zones; incentives for improving production efficiency; duty drawback on raw materials; tax coupons for exported goods; export buyer's credits; export revolving credit and supplier credit; and preferential low-interest loans from Thai government authorities. Moreover, in both countries, reasonably available evidence demonstrates that the People's Republic of China provides certain transnational subsidies to industrial manufacturers, such as the provision of loans and financing from Chinese state-owned institutions and the provision of steel products for less than adequate remuneration. These programs encourage both expansion of capacity and increased export of subject merchandise to the United States.

Excess Capacity and Inventories: Information about foreign producers' inventories and excess capacity are not reasonably available to Petitioner. However, public reporting suggests foreign producers have substantial available capacity that will target the U.S. market.

Mexican chassis producers have added or dedicated new capacity to the United States. At the end of 2022, GG Trailers began production at a facility capable of producing 6,000 chassis per

year.[123] According to Atro Trailers' website, it has "expanded {its} facilities" and is now capable of producing 1,000 trailers per month.[124]

Thai producers have also added capacity in recently years. Shortly after preliminary duties were assessed on chassis from China, Dee Siam Manufacturing Co., Ltd., which is ultimately owned by CIMC, "launched a new project to manufacture chassis frames for the United States . . . known as Project Durian."[125] Dee Siam rapidly built an new facility for this project, with trial production starting in May 2021 and full production beginning June 2021.[126] Since then, CIMC reported purchasing six additional hectares to "expand production" in Thailand to "serve domestic and export markets."[127] Thai producer Panus also demonstrated impressive capacity and an ability to rush large volumes of chassis to the U.S. market, pledging to grow imports from 7,000 in 2022 to 12,000 in 2024.[128]

Vietnamese producers have likewise added capacity in recent years and announced their intention to ramp up exports to the United States. THACO announced the intention to sell 25,000 chassis to the U.S. market in 2023.[129] While it is unclear whether these products were ultimately sold to the United States, this announcement demonstrates THACO's substantial available capacity. In fact, THACO announced that it would build a new production facility specifically to

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123 *GG Trailers Opens Plant in Coahuila; Will Produce 6 Thousand Container Chassis Per Year*, T21 (Aug. 10, 2022), attached as **Exhibit I-28**.

124 *ATRO Trailers Homepage*, ATRO Trailers, last accessed Feb. 18, 2025, attached as **Exhibit I-31**.

125 EAPA Case No. 7810 Onsite Verification Report (Jan. 26, 2024) at 2, excerpts attached as **Exhibit I-23**.

126 *Id.*

127 *CIMC Vehicle signed an agreement with Amata and TCR*, Amata (Nov. 26, 2021), attached as **Exhibit I-32**.

128 *Thailand trailer manufacturer Panus enters US market*, Trailer Body Builders (July 8, 2022), attached as **Exhibit I-24**.

129 *Thaco Group exports semi-trailers to the US market*, Doanh nghiep & Thuonghieu (Dec. 16, 2021), attached as **Exhibit I-33**.

accommodate increased exports to the United States.[130] Producer Kotinochi Chassis explains that it was established "in early 2021 for export to the US and EU markets" and advertises chassis built to U.S. standards.[131]

Subject producers made substantial investments in adding and expanding U.S.-dedicated capacity. U.S. demand has temporarily softened, due to U.S. customers' decision to stock up on imported chassis during the POI, but imports will undoubtably return as demand returns. Moreover, given softer demand, it is likely that many of these companies increased inventories as demand softened, rather than ramping down production. These large volumes of available capacity and inventories threaten to injure the domestic industry further in the future.

V. CONCLUSION

The statutory factors support a finding that imports of chassis and subassemblies thereof from Mexico, Thailand, and Vietnam have caused material injury to the domestic industry, and that such imports threaten additional material injury. Accordingly, Petitioners request that the Department and the Commission initiate investigations and grant the relief requested in these Petitions.

130 *THACO exports first batch of 870 semi-trailers to US*, Vietnam+ (Dec. 17, 2021), attached as **Exhibit I-26**.

131 Kotinochi JSC Homepage, Kotonochi JSC, last accessed Feb. 23, 2024, attached as **Exhibit I-34**.

Respectfully submitted,

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Dated: February 26, 2025

EXHIBIT LIST		
EXHIBIT NO.	**DESCRIPTION**	**SECURITY**
I-1	Non-Petitioner U.S. Producers' Letter of Support	Public Version
I-2	Laura Curtis, *Port Traffic Booms Despite Recession Fears*, Transport Topics (Aug. 19, 2024)	Public
I-3	*Chassis and Subassemblies from China*, Inv. Nos. 701-TA-657, USITC Pub. 5187 (May 2021) (Final) (excerpts)	Public
I-4	List of Petitioners and Contact Information	Public
I-5	Non-Petitioner U.S. Chassis Manufacturers	Public
I-6	Lost Sales and Lost Revenues	Public Version
I-7	Domestic Industry Support Calculation	Public Version
I-8	*American Association of Railroads Manual of Standards and Recommended Practices Intermodal Equipment Manual*, American Association of Railroads (2017) (excerpts)	Public Version
I-9	*Rules for Certification of Cargo Containers*, American Bureau of Shipping (1998) (excerpts)	Public
I-10	*Freight Containers - Container Equipment Data Exchange (CEDEX) - Part 5: General Communication Codes for Chassis*, International Organization for Standardization (2014)	Public Version
I-11	Customs Ruling E85372	Public
I-12	*Chapter 87: Vehicles Other Than Railway or Tramway Rolling Stock, and Parts and Accessories Thereof*, Harmonized Tariff Schedule of the United States (2025) (excerpts)	Public
I-13	List of Known Foreign Producers	Public

EXHIBIT LIST		
EXHIBIT NO.	**DESCRIPTION**	**SECURITY**
I-14	Known Non-Subject Producers	Public
I-15	Import Shipment & Market Share Analysis	Public Version
I-16	Petitioner's Trade and Financial Data	Public Version
I-17	CMB International, CIMC (Vehicles) Group Excerpt at 11 (excerpts)	Public
I-18	Customs Ruling R02804	Public
I-19	Letter from White & Case LLP to Trade Remedy and Law Enforcement Directorate, re: *Written Argument of CIMC Intermodal Equipment, LLC (PUBLIC Version)* (March 19, 2024) (excerpts)	Public
I-20	Examples of Chassis Producers and Assemblers Meeting U.S. Standards	Public
I-21	*CIE Manufacturing Homepage*, CIE, last accessed Feb. 18, 2025	Public
I-22	Subject Producer Registration Compilation	Public Version
I-23	EAPA Case No. 7810 Onsite Verification Report (Jan. 26, 2024) (excerpts)	Public
I-24	*Thailand trailer manufacturer Panus enters US market*, Trailer Body Builders (July 8, 2022)	Public
I-25	*Thailand's Leading Trailer Manufacturer Successfully Enters US Market*, Panus (May 5, 2022)	Public
I-26	*THACO exports first batch of 870 semi-trailers to US*, Vietnam+ (Dec. 17, 2021)	Public
I-27	ATRO Remolques LinkedIn Profiles	Public

EXHIBIT LIST		
EXHIBIT NO.	**DESCRIPTION**	**SECURITY**
I-28	*GG Trailers Opens Plant in Coahuila; Will Produce 6 Thousand Container Chassis Per Year*, T21 (Aug. 10, 2022)	Public
I-29	Declaration of [*source*]	Public Version
I-30	Cathy Morrow Robertson, *Slow growth predicted for US economy, freight demand in 2025: Inland24*, Journal of Commerce (Oct. 1, 2024)	Public
I-31	*ATRO Trailers Homepage*, ATRO Trailers, last accessed Feb. 18, 2025	Public
I-32	*CIMC Vehicle singed an agreement with Amata and TCR,* Amata (Nov. 26, 2021)	Public
I-33	*Thaco Group exports semi-trailers to the US market*, Doanh nghiep & Thuonghieu (Dec. 16, 2021)	Public
I-34	Kotinochi JSC Homepage, Kotonochi JSC, last accessed Feb. 23, 2024	Public

EXHIBIT I-1

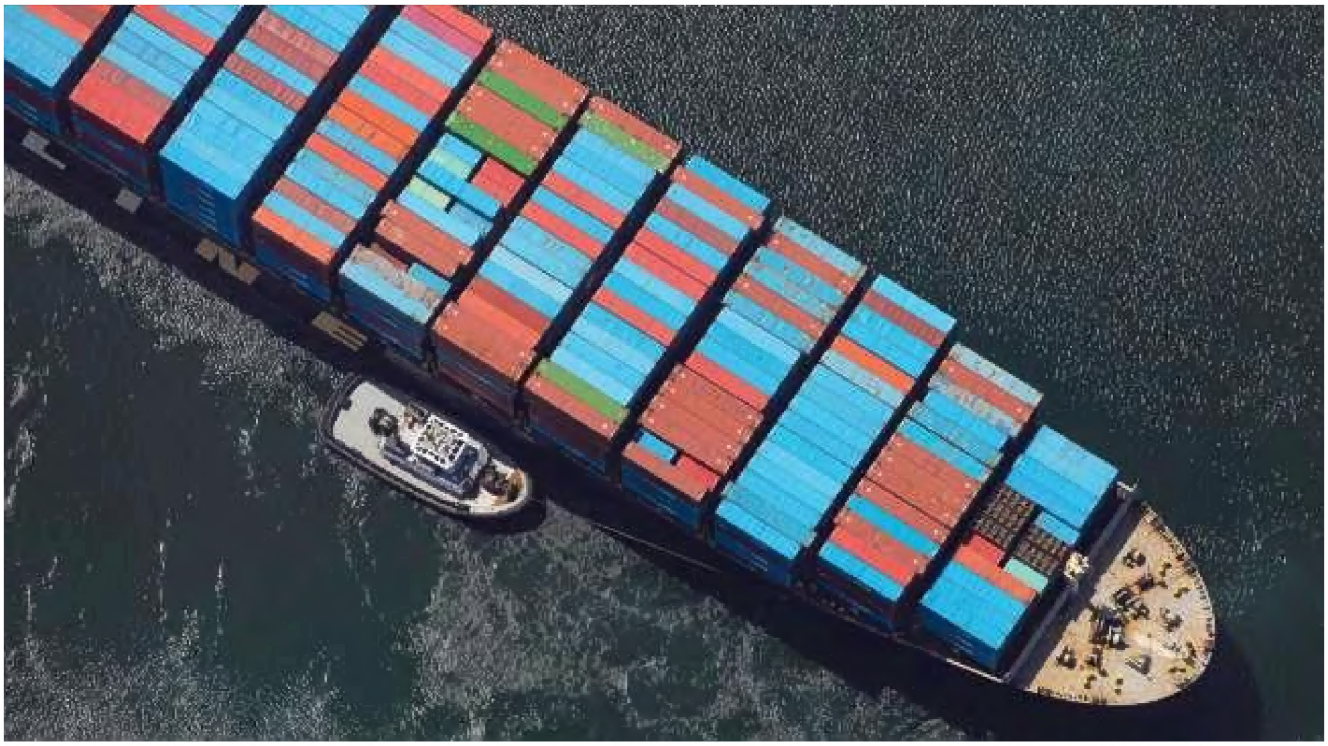
ENTIRE EXHIBIT NOT CAPABLE OF PUBLIC SUMMARY

EXHIBIT I-2

Business | Logistics | Laura Curtis | Bloomberg News | August 19, 2024 12:19 PM, EDT

Port Traffic Booms Despite Recession Fears

LA-Long Beach Complex Sees Third-Strongest Month on Record



The ports of Los Angeles and Long Beach had their third-strongest month ever in July. (Tim Rue/Bloomberg News)

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The busiest port complex in the U.S. is churning through import volumes near the highs set during the pandemic despite worries about a cooling economy.

The ports of Los Angeles and Long Beach, which account for roughly a third of all U.S. container imports, had their third-strongest month ever in July, just shy of an all-time high reached in May 2021. Back then, a wave of inbound consumer goods caused supply bottlenecks on land and a queue of cargo ships waiting for a berth offshore was getting longer by the day.

Demand now is driven by retailers and other importers stocking up ahead of U.S. tariffs on Chinese goods and a possible strike by a large group of American dockworkers — adding to the usual frenzy of pre-holiday ordering that occurs this time of year.

The marine terminals in Southern California's San Pedro Bay are withstanding the crush so far, though some gauges of capacity constraints are starting to rise.

"We're in a strong position heading into the peak shipping season as consumers purchase back-to-school supplies and shippers move goods ahead of potential tariff increases," Port of Long Beach CEO Mario Cordero said in a statement. "We have plenty of capacity across our terminals and cargo continues to move efficiently and sustainably."

RELATED: Port Leaders Cautiously Optimistic for 2024

In the latest rush to restock, fear of delayed shipments is a big factor.

Talks between the union representing longshoremen on the East and Gulf coasts and their employers have reached an impasse, six weeks before their contract expires Sept. 30. Some ocean freight that might come through ports from Boston to Houston is shifting to West Coast gateways until that uncertainty is resolved.

According to data from Sea-Intelligence, a Copenhagen-based maritime data and advisory firm, every one day of a strike would take about five days for ports to clear the resulting cargo backlog. A one-week strike starting Oct. 1, for instance, would take until mid-November to work through.

"If we get a two-week strike, then realistically, the ports would not be back to normal operations until we are into 2025," Sea-Intelligence CEO Alan Murphy said in a research note released last week.

Companies are also racing to beat the imposition of more tariffs on Chinese goods and, in the event Donald Trump returns to the presidency next year, his fulfillment of a campaign pledge to step up the trade war with China and raise tariffs on all U.S. imports.

According to data released this month by the National Retail Federation and Hackett Associates, U.S. container imports through major ports this year will reach 24.9 million measured in 20-foot equivalent units, up 12% from last year and close to 2021 and 2022 levels that topped 25 million.

LA-Long Beach and other West Coast ports have been losing market share to their eastern rivals for years. Hackett Associates Founder Ben Hackett said fresh worries about labor disruptions at eastern ports have pushed the West Coast's share of cargo "above 50% for the first time in over three years."

Such factors are distorting the demand picture, making it hard to know whether peak shipping season started early and trade volumes will level off soon, or if importers will continue bringing in more than usual.

There's also the chance that consumers' ability to continue spending bottoms out, leaving warehouses full and companies with too much inventory.

The latest retail sales report reflects consumer resilience despite higher borrowing costs, a cooling labor market, and an economic outlook clouded by wars and the U.S. presidential election in November.

But with pandemic savings now largely gone and wage growth cooling, many Americans are increasingly resorting to credit cards and other loans to support their purchases.

Cautious Consumers

Walmart Inc.'s latest earnings report underscores how U.S. households are becoming more cost-conscious in light of economic uncertainty and high interest rates. Americans are also pulling back on travel, while deferring big home renovations.

Walmart ranks No. 1 on the Transport Topics Top 100 list of the largest private carriers in North America. It also takes the top spot on the wholesale/retail sector list.

"We are seeing that the consumer continues to be discerning, choiceful, value-seeking" and focusing on essentials, Chief Financial Officer John David Rainey said in an interview Thursday.

Home Depot Inc. and Whirlpool Corp. cut their sales forecasts for the year as their shoppers held back spending on big-ticket items and home improvement projects.

The Home Depot ranks No. 50 on the TT Top 100 private list.

So far, though, a consumption slowdown isn't visible in the industry that moves 80% of global merchandise trade. Asked whether he sees a recession on the horizon, the chief executive of one of the world's largest container carriers said not according to his bookings.

"All of us were surprised by the strong demand that we've seen since the first of May," Rolf Habben Jansen, CEO of the German container carrier Hapag-Lloyd AG, said in an interview with Bloomberg Television last week. "That's actually still continuing well into the third quarter."

Hapag-Lloyd ranks No. 13 on the Transport Topics Top 50 list of the largest global freight carriers.

At the Port of LA, preliminary August figures show sustained momentum. Executive Director Gene Seroka said nearly all indicators of port efficiency are at or better than they were when the surge started, though "recently we're seeing some micro issues."

Dwell time for containers — a measure of how smoothly they're moving through the port — has moved up, reaching more than six days. "That's far too high, it needs to be between two and four days," Seroka said.

Strains are also starting to appear in truck chassis availability — an issue blamed for the severe delays at LA-Long Beach during the COVID-19 bottlenecks of 2021 and 2022.

Still, he doesn't see anything that's a cause for alarm. "We've been clipping out the last three months at really high productivity" Seroka said.

He said some industry observers believe that U.S. imports may have peaked in July, a hypothesis that matches up with a recent decline in spot shipping rates.

"We'll see if that holds true," Seroka said. "So much of it depends on the economy."

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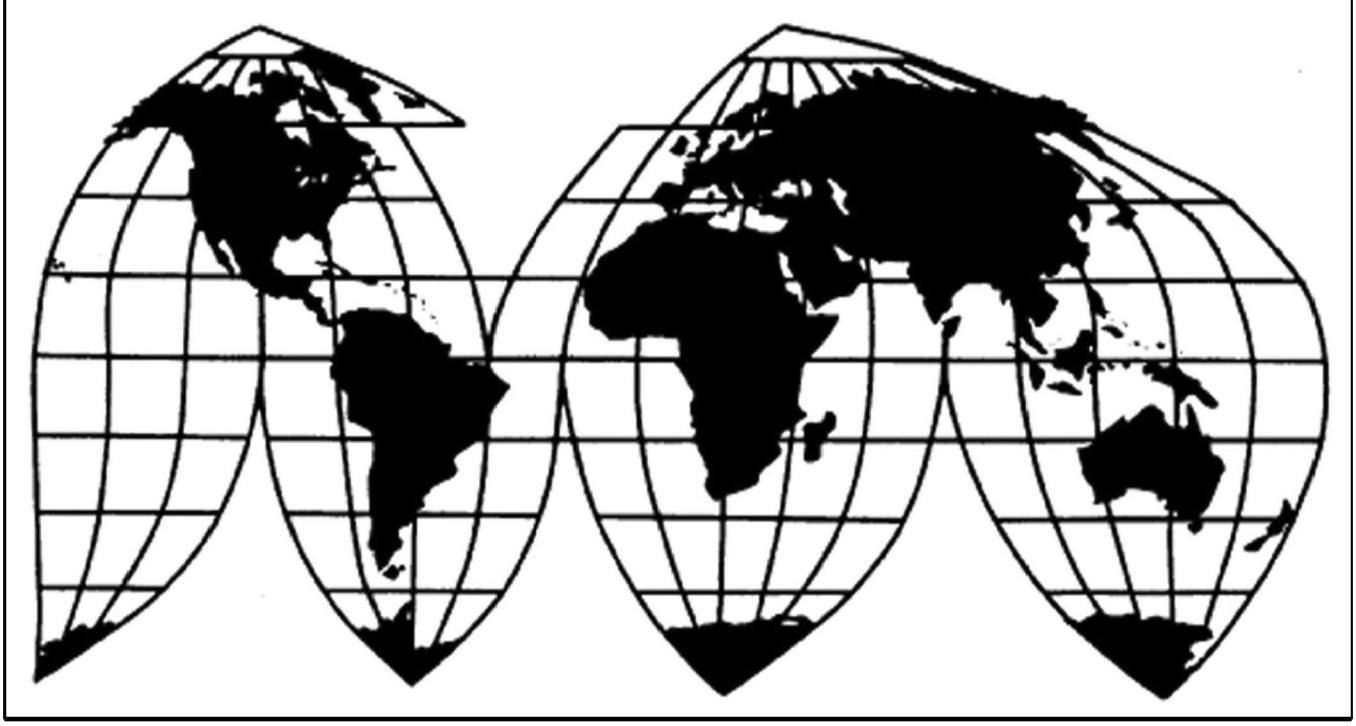
EXHIBIT I-3

Chassis and Subassemblies from China

Investigation No. 701-TA-657 (Final)

Publication 5187 **May 2021**

U.S. International Trade Commission



Washington, DC 20436

market).[32] Chassis subassemblies (chassis frames, running gear assemblies, landing gear assemblies, and assemblies that connect to the chassis frame) are also included in the scope.[33]

C. Arguments of the Parties

Petitioner's *Arguments*. Petitioner requests that the Commission define a single domestic like product, coextensive with the scope definition.[34] It claims that, under a semifinished product analysis, subassemblies and components are part of the same domestic like product as fully assembled chassis.[35]

Respondents' *Arguments*. CIMC requests that the Commission find that complete chassis constitute a separate domestic like product from subassemblies and components.[36] Under a semifinished product analysis, CIMC argues that: (1) subassemblies and components are not dedicated exclusively to the production of complete chassis, but are widely used as component parts for the manufacture of non-chassis trailer products; (2) subassemblies and components are sold in streams of commerce that complete chassis are not; (3) subassemblies and components have different inherent physical characteristics and functions, as it is impossible for any single subassembly or component to have the same physical characteristics and functions of complete chassis, which are composed of multiple subassemblies; (4) complete chassis are significantly costlier than any type of subassembly or component; and (5) transforming subassemblies into a complete chassis is a significant process.[37]

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[32] CR/PR at I-10, II-1.

[33] CR/PR at I-10.

[34] Petitioner's Prehearing Brief at 5; Petitioner's Posthearing Brief at 2, Exhibit 1 at 93-102.

[35] Petitioner's Prehearing Brief at 5-6, 8-19.

[36] *See* CIMC's Prehearing Brief at 10 at Attachment A at 3, 11; CIMC's Posthearing Brief at Exhibit 1 at 58-60.

[37] *See* CIMC's Prehearing Brief at Attachment A at 11-16.

D. Domestic Like Product Analysis

In our preliminary determinations, we applied a semifinished product analysis and defined a single domestic like product consisting of all chassis and subassemblies thereof.[38] We found that the physical characteristics of the four major subassemblies do not appear to change significantly when assembled together to form a completed chassis and that subassemblies have no functions other than being attached to a chassis or other type of trailer.[39] Furthermore, we found that there are very few commercial sales of subassemblies, and that most of the cost of goods sold ("COGS") of fully assembled chassis reflects the cost of the running gear subassembly and steel components.[40] In light of these considerations, and in the absence of any contrary argument in the preliminary phase, we found that subassemblies are not a distinct domestic like product from a completed chassis.[41]

With additional information obtained in the final phase of this investigation, we again analyze whether we should define subassemblies and components as a separate domestic like product from fully assembled chassis. Based on our analysis of the semifinished domestic like product factors, we define a single domestic like product consisting of all chassis and subassemblies thereof, coextensive with the scope of investigation.

Extent of Processes Used to Transform Upstream Product into Downstream Product. The four major subassemblies for a chassis are the frame, the running gear subassembly, the

[38] *See Chassis and Subassemblies from China*, Inv. Nos. 701-TA-657 and 731-TA-1537 (Preliminary), USITC Pub. No. 5120 (Sept. 2020) at 9-11 ("Preliminary Determinations").

[39] Preliminary Determinations, USITC Pub. No. 5120 at 11.

[40] Preliminary Determinations, USITC Pub. No. 5120 at 11.

[41] Preliminary Determinations, USITC Pub. No. 5120 at 11.

include CIE in the domestic industry.[70] It maintains that assemblers of subassemblies into complete chassis, such as CIE, do not perform sufficient production-related activities in the United States to be included in the domestic industry.[71]

Respondents' Arguments. CIMC argues that CIE engages in sufficient production-related activities to be considered a domestic producer.[72] It contends that: (1) CIE made a $5 million capital investment to expand chassis and subassembly production capabilities at its South Gate, California and Emporia, Virginia facilities; (2) CIE hired technical workers, engineers, and warehousing and sourcing experts to oversee and improve its new production capabilities; (3) the value added by CIE consists of everything but the chassis frame imported from China, which it estimates as *** percent of the total value of a chassis; (4) the *** employees in 2020 that CIE reported in its U.S. producer questionnaire exceed the level reported by most petitioning firms for the same year; and (5) CIE sources approximately *** percent of the value of the chassis in the United States.[73]

B. Sufficient Production-Related Activities Analysis

In 2018 and 2019, CIE's domestic production operations consisted primarily of bolt-on assembly of 53-foot chassis from China, called "complete knock down" ("CKD") assembly.[74]

[70] *See* Petitioner's Prehearing Brief at 19.

[71] *See* Petitioner's Prehearing Brief at 19-29.

[72] *See* CIMC's Posthearing Brief at Exhibit 1 at 53. CIMC does not argue that CIE should be included in the domestic industry for purposes of the Commission's present injury analysis. *Id.* Rather, even if the Commission were to find that CIE engages in sufficient production-related activities to be included as a domestic producer, CIMC admits that the Commission could find CIE to be a related party and therefore subject to exclusion under the related parties provision. *Id.*; CIMC's Prehearing Brief at 6.

[73] *See* CIMC's Posthearing Brief at Exhibit 1 at 54-55.

[74] *See* CR/PR at III-6; CIMC's Prehearing Brief at 40.

***, CIE assembled complete chassis from subassemblies and components that it both imported and procured domestically.[75]

In our preliminary determinations, we found that CIE's assembly operations during the preliminary phase period of investigation (January 2017 to March 2020) were not sufficient to constitute domestic production.[76] We found that these operations encompassed a modest capital investment, particularly compared with production of completed chassis, and were not technically complex.[77] We also found that these operations neither added substantial value to the product nor employed substantial workers.[78] Moreover, we found that CIE imported many of the components used in its assembly operations from its affiliates in China.[79] Nevertheless, we noted that, in the final phase of these investigations, we intended to issue CIE a U.S. producers' questionnaire and would further consider CIE's status as a domestic producer with respect to any evolution in its subassembly and final assembly operations.[80]

Because there is no new information or argument in the record of the final phase of this investigation concerning CIE's CKD assembly operations, we adopt our analysis in the preliminary determinations that these operations are not sufficient to constitute domestic production. We consider below the information in the final phase record pertaining to CIE's

[75] *See* CR/PR at III-6; CIMC's Prehearing Brief at 40-41; CIMC's Posthearing Brief at Exhibit 1 at 52-53 (CIE "began manufacturing complete chassis in the United States using frames imported from China and subassemblies and components manufactured in the United States and third countries").

[76] *See* Preliminary Determinations, USITC Pub. No. 5120 at 14. Based on its finding that CIE was not a domestic producer, the Commission found that there were no related party issues in the preliminary phase. *Id.* at 14 n.58. Hence, the Commission defined the domestic industry to encompass all domestic producers of completed chassis (or those subassemblies listed in the scope), but not CIE. *Id.* at 14.

[77] Preliminary Determinations, USITC Pub. No. 5120 at 14.

[78] Preliminary Determinations, USITC Pub. No. 5120 at 14.

[79] Preliminary Determinations, USITC Pub. No. 5120 at 14.

[80] Preliminary Determinations, USITC Pub. No. 5120 at 14 n.57.

operations assembling completed chassis from subassemblies. We find that these operations during the POI did not constitute sufficient production-related activities for CIE to be considered a domestic producer.

Source and Extent of Capital Investment. From a greenfield investment standpoint, the five petitioning U.S. producers reported capital investment costs needed to produce complete chassis in the United States ranging from $*** to $***.[81] By contrast, CIE reported that, in 2020, it invested $*** in its South Gate, CA and Emporia, VA facilities ***.[82]

Technical Expertise Involved. Asked to evaluate the complexity of assembly of in-scope subassemblies not manufactured by their firm into complete chassis, *** petitioning U.S. producers rated it as one out of five ("minimally" complex, intense, and important), while CIE rated it as ***.[83] The five petitioning U.S. producers reported annual research and development ("R&D") expenses ranging from *** from 2018 to 2020,[84] while CIE reported ***.[85] CIE, however, stated that, ***.[86]

CIE has *** at its South Gate, California facility and *** at its Emporia, Virginia facility.[87] CIMC depicts CIE's process to transform subassemblies and components into complete chassis as involving at least *** and five production stations for (1) preparing axle assemblies, (2) installing running gear and landing legs onto the frame, (3) installing electrical harnesses and

[81] *See* Cheetah, Hercules, Pitts, Pratt, and Stoughton's U.S. Producer Questionnaire Responses at II-6.

[82] CR/PR at Table III-6.

[83] CR/PR at Table III-3. *** asserts that ***. *Id.*

[84] *See* Cheetah, Hercules, Pitts, Pratt, and Stoughton's U.S. Producer Questionnaire Responses at III-13a.

[85] CR/PR at Table III-4.

[86] CR/PR at Table III-4 n.2; *see also* CR/PR at Table III-5 (CIE reported ***).

[87] CIMC's Prehearing Brief at 45.

(*i.e.,* unloading and positioning) for marine chassis arriving at U.S. ports; (3) performed warranty repairs; and (4) performed CKD assembly for 53-foot domestic chassis.[95]

Conclusion. We find that CIE's operations assembling subassemblies into complete chassis were insufficient to constitute domestic production of chassis. We acknowledge that these activities increased during the latter part of the POI: in 2019, CIE assembled *** complete chassis from subassemblies and had *** commercial sale, while in full-year 2020 it assembled *** complete chassis and had *** commercial sales of chassis.[96] CIE's reported employment levels[97] and quantity and parts sourced in the United States[98] also rose in 2020. Nevertheless, the record shows that CIE's subassembly assembly operations encompassed a modest capital investment when compared with the five petitioning firms' capital investments to produce complete chassis in the United States. The record also indicates that CIE's subassembly assembly operations do not add substantial value to the finished product. Moreover, CIMC reported in its importers' questionnaire response that, in 2020, CIE imported running gear subassemblies from its affiliates in China for internal consumption.[99] CIMC also reported that CIE still imports frame subassemblies from its affiliates in China, which it estimates accounts for approximately *** percent) of the total value of the chassis.[100] In light

[95] CIMC's Prehearing Brief at 40.

[96] CR/PR at Tables III-7 and VI-3.

[97] In the preliminary phase, CIE did not report employment levels for its assembly operations, but explained ***. Preliminary Determinations, Confidential Views, EDIS Doc. #720214, at 18.

[98] In its U.S. purchaser questionnaire response, CIE reported decreasing imports of chassis and subassemblies from China each year from 2018 to 2020. *See* *** U.S. Purchaser Questionnaire Response at II-1. Also, since the beginning of the POI, *** reported *** purchases of subassemblies and components from the United States and *** purchases from China, claiming that ***. *See* *** U.S. Purchaser Questionnaire Response at II-2.

[99] Worksheet accompanying CIMC's U.S. Importer Questionnaire Response (Mar. 17, 2021), EDIS Doc. #737387.

[100] *See* *** U.S. Purchaser Questionnaire Response at II-2; CIMC's Prehearing Brief at 41.

of these considerations, we find that CIE's subassembly assembly operations during the POI are insufficient to constitute domestic production.

Based on our finding that CIE is not a domestic producer, there are no related party issues in these investigations.[101] We consequently define the domestic industry to encompass all domestic producers of chassis and subassemblies thereof, but not to include CIE's assembly operations.

IV. Material Injury by Reason of Subject Imports[102]

Based on the record in the final phase of this investigation, we find that an industry in the United States is materially injured by reason of imports of chassis and subassemblies from China found by Commerce to be subsidized by the government of China.

A. Legal Standards

In the final phase of antidumping and countervailing duty investigations, the Commission determines whether an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.[103] In making this determination, the Commission must consider the volume of subject imports, their effect on

[101] None of the petitioning U.S. producers are related to exporters or importers of subject merchandise. *See* CR/PR at Table III-2. None of the petitioning U.S. producers reported imports of chassis from any subject source during the POI. *See* CR/PR at Table III-13.

[102] Pursuant to Section 771(24) of the Tariff Act, imports from a subject country of merchandise corresponding to a domestic like product that account for less than 3 percent of all such merchandise imported into the United States during the most recent 12 months for which data are available preceding the filing of the petition shall generally be deemed negligible. 19 U.S.C. §§ 1671b(a), 1673b(a), 1677(24)(A)(i), 1677(24)(B); *see also* 15 C.F.R. § 2013.1 (developing countries for purposes of 19 U.S.C. § 1677(36)). The exceptions to this general rule are not applicable here.

Based on questionnaire data, subject imports from China subject to the countervailing duty investigation accounted for *** percent of total U.S. imports of chassis and subassembly units in the 12-month period (July 2019 to June 2020) preceding the filing of the petitions. CR/PR at Table IV-3. Thus, we find that subject imports from China are not negligible.

[103] 19 U.S.C. §§ 1671d(b), 1673d(b).

harm occurred 'by reason of' the LTFV imports," and that it is "not attributing injury from other sources to the subject imports."[116] The Federal Circuit has examined and affirmed various Commission methodologies and has disavowed "rigid adherence to a specific formula."[117]

The question of whether the material injury threshold for subject imports is satisfied notwithstanding any injury from other factors is factual, subject to review under the substantial evidence standard.[118] Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.[119]

B. Conditions of Competition and the Business Cycle

The following conditions of competition inform our analysis of whether there is material injury by reason of subject imports.

1. Demand Considerations

U.S. demand for chassis is related to shipping trends, including freight movement for products imported into the United States and exported from the United States, and freight movement within the United States.[120] U.S. merchandise trade (defined as U.S. imports plus

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decision in *Swiff-Train v. United States*, 793 F.3d 1355 (Fed. Cir. 2015), the Federal Circuit affirmed the Commission's causation analysis as comporting with the Court's guidance in *Mittal*.

[116] *Mittal Steel*, 542 F.3d at 873 (quoting from *Gerald Metals*, 132 F.3d at 722), 877-79. We note that one relevant "other factor" may involve the presence of significant volumes of price-competitive nonsubject imports in the U.S. market, particularly when a commodity product is at issue. In appropriate cases, the Commission collects information regarding nonsubject imports and producers in nonsubject countries in order to conduct its analysis.

[117] *Nucor Corp. v. United States*, 414 F.3d 1331, 1336, 1341 (Fed. Cir. 2005); *see also Mittal Steel*, 542 F.3d at 879 ("*Bratsk* did not read into the antidumping statute a Procrustean formula for determining whether a domestic injury was 'by reason' of subject imports.").

[118] We provide in our discussion below a full analysis of other factors alleged to have caused any material injury experienced by the domestic industry.

[119] *Mittal Steel*, 542 F.3d at 873; *Nippon Steel Corp.*, 458 F.3d at 1350, *citing U.S. Steel Group*, 96 F.3d at 1357; S. Rep. 96-249 at 75 ("The determination of the ITC with respect to causation is ... complex and difficult, and is a matter for the judgment of the ITC.").

[120] CR/PR at II-15.

U.S. exports), an indicator of the volume of goods being transported around the United States, increased by 6.0 percent from January 2018 to December 2020.[121] The increases were concentrated at the beginning of the POI, as U.S. merchandise trade peaked in October 2018, when it was 26.4 percent higher than in January 2017.[122] U.S. merchandise trade was generally lower in 2019 than in 2018, then fell substantially during the spring of 2020 at the start of the COVID-19 pandemic, but has since recovered.[123] On an aggregated annual basis, U.S. merchandise trade increased by 8.1 percent from 2017 to 2018, decreased by 1.5 percent from 2018 to 2019, and decreased by 9.0 percent from 2019 to 2020.[124]

While demand for chassis is related to shipping trends, there is not a one-to-one correspondence between shipping trends and chassis purchases, as freight carriers and intermodal pool operators maintain existing fleets of chassis. Turnover in those fleets also affects demand for chassis.[125] Purchasers estimated that their chassis have a lifespan of 12 to 30 years, with a majority (nine of 16) of responding firms reporting a lifespan of 20 years.[126] The average age of the chassis fleets in operation reported by purchasers was eight years, and nine responding purchasers reported replacing between one and 15 percent of their fleet

[121] CR/PR at II-16, Fig. II-1.

[122] *Derived from* CR/PR at Fig. II-1 and source data available at https://www.census.gov/foreign-trade/balance/c0015.html (last accessed February 19, 2021).

[123] CR/PR at II-16.

[124] *Derived from* CR/PR at Fig. II-1 and source data available at https://www.census.gov/foreign-trade/balance/c0015.html (last accessed February 19, 2021).

[125] CR/PR at II-18. Demand for chassis was also reported to be affected by short-term demand surges that can occur at ports as well as inland hubs which cause increased chassis dwell times (the time a chassis is on rent to customer). The imbalances could affect demand on a more regional level without occurring nationwide. CR/PR at II-13. However, U.S. producers and importers both reported selling chassis to all regions in the United States. *Id.* at II-7, Table II-3; *see also* Petitioner's Prehearing Brief at 51.

[126] CR/PR at II-18.

during the POI.[127] The majority (12 of 23) of responding purchasers indicated that the average age of their fleets had not changed since 2018, and none of the 22 responding purchasers indicated changes in their pattern of maintenance or repairs since 2018.[128]

Most (four of five) of the petitioning U.S. producers and *** reported fluctuating U.S. demand for chassis since January 1, 2018, while a majority (14 of 23) of responding purchasers and *** reported U.S. demand for chassis had increased since January 1, 2018.[129] Only two of the 30 reporting industry participants (both purchasers) reported that demand declined.[130] Notwithstanding these perceptions and the relatively moderate fluctuations in the U.S. merchandise trade during the POI, the apparent U.S. consumption data compiled through questionnaires show substantial declines in consumption of chassis and subassemblies from 2018 to 2020, particularly from 2018 to 2019, as discussed further in Section IV.D below.

In this investigation, we collected data based on chassis and subassemblies combined (by value, units, and short tons) as well as on completed chassis and various types of subassemblies (by value, units, and short tons).[131] As explained below, we rely on the data collected both for chassis and subassemblies combined by value and for completed chassis by unit to measure apparent U.S. consumption. The record indicates that there are wide discrepancies in unit value among the different types of subassemblies and between complete

[127] CR/PR at II-18. Two of the largest purchasers, ***, reported replacing three to six and 5.4 percent of their fleets during the POI, respectively. *Id.* at n.67.

[128] CR/PR at II-18.

[129] CR/PR at Table II-5.

[130] CR/PR at Table II-5.

[131] CR/PR at Tables C-2, E-1 to E-3.

time, and price.[148] Purchasers reported that differences between domestically produced chassis and subject imports with respect to availability, quality, and flexibility in lead times and deliveries serve to affect the degree of substitutability.[149] In light of this evidence, we find that there is a moderate-to-high degree of substitutability between domestically produced chassis and chassis imported from China.[150]

We find that price is an important factor in purchasing decisions, although availability/capacity/delivery time and quality/specifications are also important factors. Purchasers most often cited as among the top three purchasing factors availability/capacity/delivery time (cited 25 times), quality/specifications (cited 23 times), and price/cost (cited 17 times).[151] Moreover, price is among the purchasing factors that at least three-quarters of responding purchasers rated as "very important."[152] The overwhelming majority of purchasers (22 of 25) reported that they "usually" or "sometimes" purchase the lowest-priced product.[153]

[148] CR/PR at Table II-11. An equal number (11 of 23) of purchasers reported that U.S. chassis were "comparable" and were "inferior" to chassis imported from China with respect to coating. *Id.*

[149] CR/PR at II-20.

[150] *See* CR/PR at II-20.

[151] CR/PR at Table II-8. Quality/specifications was the most frequently cited first-most important factor (cited 16 times), followed by availability/capacity/delivery time (cited six times), and price (cited three times). *Id.* Availability/capacity/delivery time was the most frequently cited second-most important factor (cited 15 times), followed by price (cited five times), and quality/specifications (cited four times). *Id.* Price was the most frequently cited third-most important factor (cited nine times). *Id.*

[152] *See* CR/PR at Table II-9. The purchasing factors that at least three-quarters of responding purchasers rated as "very important" are quality meets industry standards (all 27 purchasers), reliability of supply (26 purchasers), delivery time (25 purchasers), delivery terms and product consistency and uniformity (23 purchasers each), price (22 purchasers), and availability to supply large orders (21 purchasers). *Id.*

[153] CR/PR at II-22.

apparent U.S. consumption.[201] We disagree. First, even after declining from 2018 to 2019, subject imports remained the dominant source of supply in the U.S. market, comprising no less than *** percent of apparent U.S. consumption, by value, of combined chassis and subassemblies and no less than *** percent of apparent U.S. consumption of completed chassis units at any time during the POI.[202] We find that their presence in the market was sufficiently large that subject imports could continue to exert price pressure on the domestic like product, despite any declines in absolute volume or market share.

Second, while CIMC focuses on the decline in apparent U.S. consumption over the POI, we evaluate demand trends in this investigation based on the record as a whole. In this respect, we first observe that at least one trade publication described U.S. shipments of chassis during 2018 as a "spike," and that Petitioner estimated that more typical levels of chassis demanded in the U.S. market each year are 25,000 to 35,000 chassis based on industry data,[203] which are *** to U.S. shipment levels of complete chassis in 2019 and 2020.[204] Considering this record evidence, it appears that apparent U.S. consumption began the POI at an abnormally high level, and that declines in apparent U.S. consumption during the POI primarily stemmed from starting off at this abnormally high level. U.S. shipments reported in 2018, particularly of subject imports, were dramatically higher than in any other year of the POI.[205] While apparent

[201] *See* CIMC's Prehearing Brief at 73-74; CIMC's Posthearing Brief at 12-13.

[202] CR/PR at Tables C-2 and F-5.

[203] CR/PR at II-13. While CIMC reported 50,000 chassis are required in the U.S. market each year, this quantity greatly exceeds other record evidence on chassis units required in the U.S. market as summarized above. *Id*.

[204] *See* CR/PR at Table F-5.

[205] Apparent U.S. consumption of combined chassis and subassemblies, by value, was *** percent lower in 2019 than in 2018 and apparent U.S. consumption by units of complete chassis was *** percent lower in 2019 than in 2018. CR/PR at Tables C-2 and F-5. Furthermore, as discussed in the preliminary determinations, a dramatic increase in 2018 was also true relative to 2017. *See* CR/PR at IV-

EXHIBIT I-4

List of Petitioner Companies and Contact Information

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Stoughton Trailers LLC
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Stoughton, WI 53589
Telephone: (608) 873-2500

EXHIBIT I-5

Non-Petitioner U.S. Chassis Manufacturers

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Telephone: (205) 486-5251
Email: sales@fontainetrailer.net

Hercules Enterprises LLC
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Email: sales@herculeschassis.com

KWIK Equipment Sales LLC
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Pearland, TX 77581
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Email: sales@kwikequip.com

Pitts Enterprises (d/b/a Dorsey Intermodal)
5734 Pittsview Hwy
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Telephone: (800) 321-8073

Pratt Intermodal Chassis
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Email: info@prattchassis.com

Pro-Haul Manufacturing, Inc.
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Gallipolis, OH 45631
Telephone: (205) 487-3202
Email: info@prohaul.com

EXHIBIT I-6

ENTIRE EXHIBIT NOT CAPABLE OF PUBLIC SUMMARY

EXHIBIT I-7

ENTIRE EXHIBIT NOT CAPABLE OF PUBLIC SUMMARY

EXHIBIT I-8

ENTIRE EXHIBIT NOT CAPABLE OF PUBLIC SUMMARY

EXHIBIT I-9

Rules for

Certification of Cargo Containers

Rules for

Certification of Cargo Containers

1998

American Bureau of Shipping
Incorporated by Act of the Legislature of
the State of New York 1862

Foreword

The American Bureau of Shipping, with the aid of industry, published the first edition of these Rules as a Guide in 1968. Since that time, the Rules have reflected changes in the industry brought about by development of standards, international regulations and requests from the intermodal container industry. These changes are evident by the inclusion of programs for the certification of both corner fittings and container repair facilities in the fourth edition, published in 1983.

In this fifth edition, the Bureau will again provide industry with an ever broadening scope of services. In response to requests, requirements for the newest program, the Certification of Marine Container Chassis, are included. Additionally, the International Maritime Organization's requirements concerning cryogenic tank containers are included in Section 9.

On 21 May 1985, the ABS Special Committee on Cargo Containers met and adopted the Rules contained herein.

On 6 November 1997, the ABS Special Committee on Cargo Containers met and adopted updates/revisions to the subject Rules. The intent of the proposed changes to the 1987 edition of the ABS "Rules for Certification of Cargo Containers" was to bring the existing Rules in line with present design practice. The updated proposals incorporated primarily the latest changes to IACS Unified Requirements and ISO requirements.

The effective date of the Rule changes is 13 May 1998 in line with other 1998 ABS Rules.

Contents

Rules for Certification of Cargo Containers

Appendices

Section 15 Certification of Container Chassis

15.1 General

A marine container chassis is a vehicle built specifically for the purpose of transporting a marine cargo container, so that when the container is placed upon the chassis, the unit produced serves the same function as a full semitrailer. Examples of different types of chassis are shown in Figures 15.2 through 15.6.

This section provides the requirements for the interface between marine containers and the container chassis. This section does not provide requirements for flatbed trailers or trucks used for the transport of containers.

The certification of chassis will be to the requirements contained herein or other approved specifications based upon the submission and review of design plans, material specifications, and a quality control program. Approval is also based on the satisfactory completion of the prototype tests in 15.15.1 through 15.15.19, the production tests in 15.15.1 through 15.15.6, and the survey of each chassis. Certification will be to the gross vehicle weight rating (GVWR) specified by the applicant.

The GVWR may be higher than weights which can be legally transported over any highway. It is the operator's responsibility to check the maximum combined vehicle weight for the country or state of operation and to operate within that limit. To assist clients in determining the allowable GVWR for a particular country we have reprinted tables published by the International Road Federation that detail the limits of motor vehicle sizes and weights for most countries. (See Appendix C).

The GVWR is the rated structural capacity of the chassis, including the tare weight of the chassis being supported by the kingpin and axle(s) with the load uniformly distributed over its cargo bearing area. The GVWR is to be specified in kilograms or pounds. It is the manufacturer's responsibility to designate a GVWR limited by the component with the lowest working rating. Consideration is to be given to the ratings of the suspension system, tires, rims, bearings, hubs, axles, brakes, subframe, etc. Consideration of environmental and operational factors may require the manufacturer to reduce the nominal rating of the components or the chassis. The GVWR represents the load that may be continually sustained by the components in the system.

15.1.1 Specifications

The chassis manufactured in accordance with the requirements specified herein will conform to the standards, requirements, and recommended practices, of the following codes at the time of manufacture:

American National Standards Institute (ANSI)
International Organization for Standardization (ISO)
Truck Trailer Manufacturers Association (TTMA)
Society of Automotive Engineers (SAE)

To assist manufacturers, the Association of American Railroads Specification M-943-80, Container Chassis for TOFC Service is shown in these Rules in Appendix B.

Engineering information provided herein notwithstanding, the manufacturer shall remain solely responsible for the design and performance of the chassis in its intended service.

15.1.2 Chassis Built Under Survey

Chassis which have been built to the full requirements of the Rules, and to the satisfaction of the Surveyors to the Bureau, will be certified and distinguished by the Emblem shown in Figure 15.1.

15.1.3 Chassis Not Built Under Survey

Individual existing chassis which have not been built to the requirements of these Rules, but which are submitted for certification, are to be subjected to testing in accordance with the requirements of these Rules. Where found satisfactory they will be certified accordingly.

FIGURE 15.1 Emblem—General Service

This is a representation of the emblem that will be affixed to each Bureau-approved marine container chassis.

FIGURE 15.2 Flatframe Chassis for Twenty Foot Container

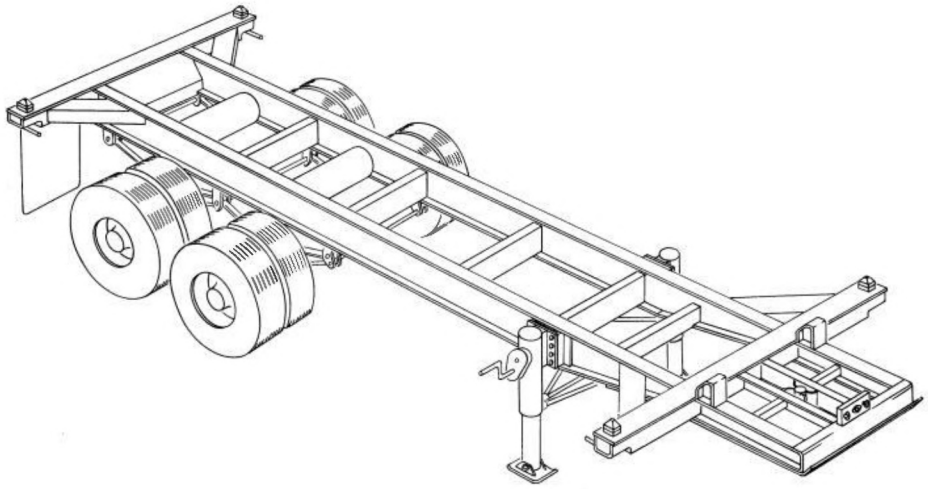
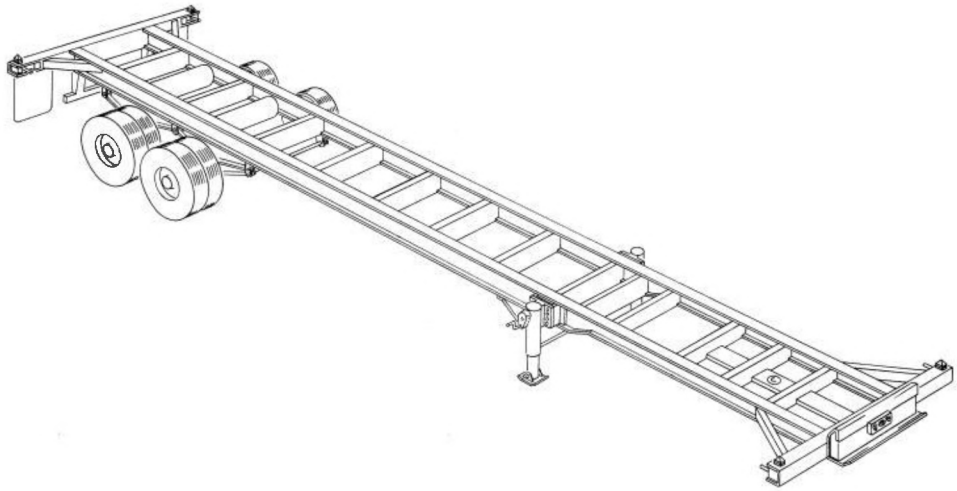


FIGURE 15.3 Flatframe Chassis for Forty Foot Container



15.1.4 Optional Inspection

When requested by an owner the Bureau may also inspect chassis in accordance with owner specifications in addition to the inspection required by the Rules for certification.

15.1.5 Loading, Handling and Securing

These Rules are published with the understanding that the responsibility for securing a chassis and for the reasonable handling and loading of chassis including the avoidance of weight distributions which are likely to set up abnormally severe stresses, does not rest upon the Committee, or the Bureau.

15.1.6 Application for Certification

The application* for the certification of chassis by design series is to include a statement that the equipment will be built in conformance to approved plans; that they will be manufactured under a quality control program acceptable to the Bureau; that they will be available for inspection during manufacture and testing; and that they will be tested in accordance with prescribed procedures. The application is also to affirm that changes in design, materials, or fabrication methods will not be made without written approval from the Bureau.

15.1.7 Certification by Design Series

For the application of each design series to be certified, plans and data including at least the following are to be submitted:

Application/Chassis data/Material identification—four copies
Welding procedures—four copies
Specified torque for fasteners—four copies
Drawings—four copies each
- General arrangement
- Sub-assemblies
- Details of components
- Markings and data plates

Test agenda—four copies
Quality control procedures—a one time requirement for each manufacturing facility.

15.1.8 Certification of an Approved Design Series

For the certification of additional units of an approved design series, the submittal is to include at least the following:

Application form
Chassis Data—one copy
Marking Drawing—four copies only if owner has changed

15.1.9 Design Changes

When changes are being made to an application* or to an approved design series, the applicant is to submit at least the following:

Chassis Data—one copy
General Assembly, sub assembly, and detail drawings, showing any revision from original design—four copies
Marking Drawing—four copies only if owner has changed

All changes will be reviewed. If the modifications are deemed significant, retesting of those parts of the chassis affected by the modification may be required.

15.1.10 Application for Certification of Existing Units

Any owner of an existing chassis may apply to the Bureau for certification. The application is to include the date of manufacture, the manufacturer's serial number, the operating number, the GVWR, and a test agenda which identifies the load values to be used during the testing of the chassis.

15.1.11 Certification to Other Requirements

When the application includes a request for certification to governmental requirements, international conventions, or other standards, the submittal is to include the necessary information required for the reviews.

15.3 Construction

The manufacturer is responsible for the quality of workmanship. The Surveyor is to satisfy himself that procedures and workmanship, as well as the material used, are in accordance with the reviewed plans and the requirements of these Rules.

*To assist clients in providing the information necessary for the certification of container chassis the Bureau has printed application forms, available upon request.

FIGURE 15.4 Gooseneck Chassis for Forty Foot Container

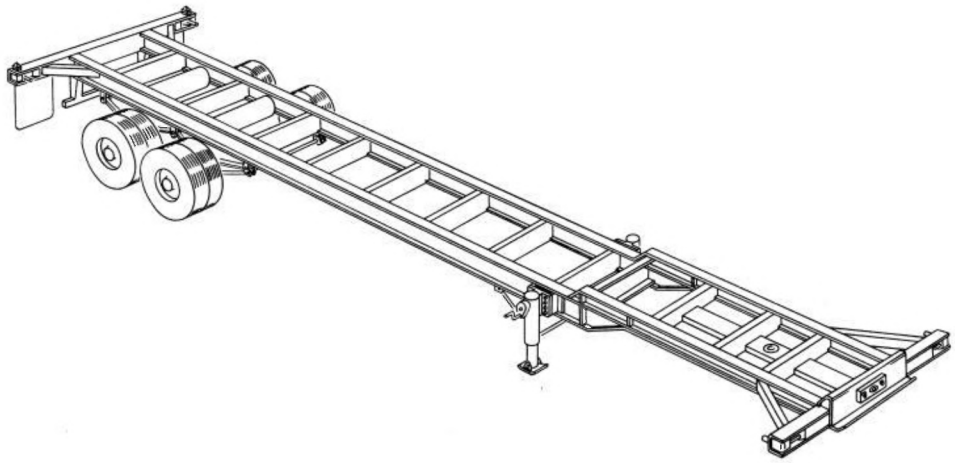
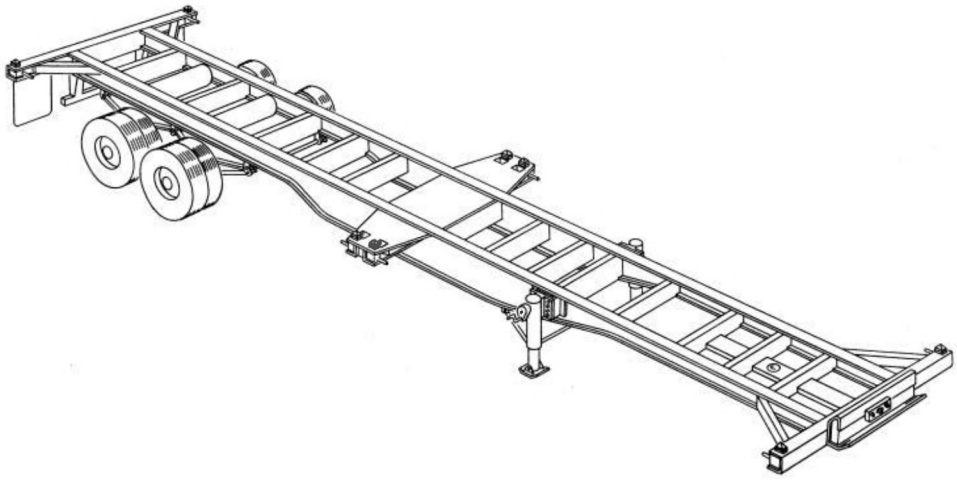


FIGURE 15.5 Combination Chassis for Twenty Foot or Forty Foot Containers



15.3.1 Material Standards

Except where specifically approved, all structural materials are to conform to an established specification. In the selection of materials due regard is to be given to established practices in the country in which the material is produced and the purpose for which the material is intended, the expected service, and the nature of construction of the chassis.

15.3.2 Quality Control Document

The manufacturer is to submit a quality control document which details those inspections and controls which are to be followed to ensure production units of quality at least equal to that of the prototype. The quality control document is to contain the information listed in paragraphs 4.1.1 through 4.1.5. It is also to contain the procedures of the production tests 15.15.1 through 15.15.6.

15.3.3 Welding

Welding is to comply with the requirements of this section unless approved otherwise. In all instances, welding procedures and filler metals are to produce sound welds that have strength and toughness comparable to that of the base material.

15.3.4 Workmanship and Supervision

The Surveyor is to be satisfied that all welders and welding operators are properly qualified and are experienced in the type of work proposed and in the proper use of the welding processes and procedures to be followed. The Surveyor is to be satisfied that a sufficient number of skilled supervisors will be employed to ensure thorough supervision and control of all welding operations.

15.3.5 Environment

Proper precautions are to be taken to ensure that all welding is done under conditions where the welding site is protected against the harmful effects of moisture, wind and severe cold. Paint or oil mist and other contaminants which tend to cause weld porosity are to be kept from the vicinity where welding is in progress.

15.3.6 Preheat

The use of preheat is to be considered when welding higher-strength steels, materials of thick cross sections, materials subject to high restraint, and when welding under high humidity or when the temperature of the steel is below 0°C (32°F). The control of interpass temperature is to be specially considered when welding quenched and tempered higher-strength steels. When preheat is used, the base metal temperature is to be in accordance with the accepted welding procedure and to the satisfaction of the Surveyor.

15.3.7 Low-Hydrogen Electrodes or Welding Processes

The use of low-hydrogen electrodes or welding processes is recommended for welding all higher-strength steel weldments subject to high restraint. When using low-hydrogen electrodes or processes, proper precautions are to be taken to ensure that the electrodes, fluxes, and gases used for welding are clean and dry.

15.3.8 Weld Soundness and Surface Appearance

All welds are to be sound and crack free throughout the weld cross section and fused to the base material. Welds are to be reasonably free from imperfections such as lack of fusion, incomplete penetration, slag inclusions, and porosity. The surfaces of welds are to be visually inspected and are to be regular and uniform with a minimum amount of reinforcement and reasonably free from undercut and overlap. Welds and adjacent base metal are to be free from injurious arc strikes. When required by an approved plan or by a specification, contour grinding is to be carried out to the Surveyor's satisfaction.

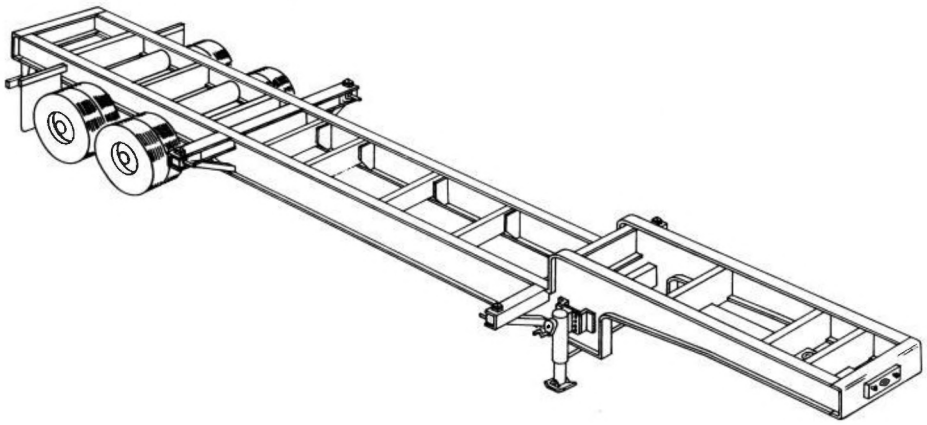
15.3.9 Repair Welding

Unsatisfactory welding as determined by visual inspection, or non-destructive test methods is to be corrected by the removal of the defective weld and/or adjacent material. The defective weld area is to be rewelded using a procedure consistent with the base material and to the satisfaction of the attending Surveyor. Removal by mechanical means of minor surface defects such as arc strikes, scratches or shallow gouges may be permitted at the discretion of the attending Surveyor.

15.3.10 Quality Control

To assure quality, sample welds may be required to be made periodically by welders and operators at the discretion of the Surveyor. Sample welds are to be made, at the location of production welding, using the same equipment, material and filler metal as intended for production. The sample welds are to be examined for workmanship and may be required to be sectioned, etched and examined for weld soundness. When necessary, measures are to be taken to correct unacceptable workmanship. The Surveyor is to be satisfied that the welders and operators are proficient in the type of work which they are called upon to perform through due consideration of the system of employment, training, apprenticeship, plant testing, inspection, etc., employed.

FIGURE 15.6 Dropped Frame Chassis for Twenty Foot Tank Container



15.5 Definitions

15.5.1 Air Brake System

A brake system which uses compressed air as a means of transmitting pressure or force from driver control to service brakes and emergency brakes.

15.5.2 Axle

Rectangular, square, or circular steel sections with spindles pressed onto the end about which wheels rotate.

15.5.3 Axle Setting

Single axle setting: the distance from the centerline of the axle to the rear surface of the chassis. Tandem axle setting the distance from the centerline, between the front and rear axles of the tandem to the rear surface of the chassis.

In some countries other than the United States the measurement is made from the centerline of the kingpin.

15.5.4 Bogie

A removable, self-contained assembly of axles, wheels, springs and suspension and brake components built specifically for use as rear wheels under a chassis. When the assembly is not removable, it is called "undercarriage" or "running gear."

15.5.5 Bolster

A transverse structural member designed to support and hold the container in a fixed position. Examples of common types of bolsters are shown in Figure 15.7.

15.5.6 Check Valve

A device which is used to isolate automatically one part of the air brake system from another. A one-way check valve provides free air flow in one direction only. A two-way check valve permits actuation of the brake system by either of two brake application valves.

15.5.7 Drain Valve

A valve or petcock fitted to the air reservoir or other low point in the air system to allow for drainage of moisture that may have condensed in the air system.

15.5.8 Fenders

Rigid structures mounted over tires to prevent damage from debris picked up by the tires. Also known as mudguards.

15.5.9 Fifth Wheel

A device used to connect a truck tractor to a chassis in order to permit articulation between the units. It is generally composed of a trunnion plate and latching mechanism mounted on the truck tractor.

15.5.10 Front Pin Locking Device

A container securement device that, when locked, prevents the container from disengaging from the chassis. (See Figure 15.8.)

15.5.11 Glad Hands

Fittings for connection of air brake lines between vehicles.

15.5.12 Gooseneck

The forward portion of the chassis that fits into the recess, or tunnel, of containers constructed in accordance with 6.9.3. See Figure 15.9.

15.5.13 Gross Vehicle Weight Rating (GVWR)

The structural capacity of a chassis supported at the kingpin and axles with the load uniformly distributed along its length. In some countries other than the United States this includes the weight of the tractor.

15.5.14 Gross Weight

The weight of a chassis and a container with the weight of its entire contents. For the definition of gross weight relating to containers, see Section 5.

15.5.15 Harness

A set of wires used to transmit electrical power through the chassis.

15.5.16 Horn

A structural member on the front of a chassis to serve as a gathering device for guiding a container into its proper place on the chassis for securement. In transit the horn provides a mechanical stop to prevent forward movement of the container with respect to the chassis. Frequently the horn serves as a mounting place for the connection box. Also known as "container guide" or "stop." (See Figure 15.9.)

15.5.17 Kingpin

The pin on a chassis that mates with the fifth wheel of a truck tractor while coupling the two units together. See Figure 15.10.

15.5.18 Landing Gear

Devices generally adjustable in height, used to support the front end of a chassis in an approximately level position when disconnected from the towing vehicle. Also called "Supports." See Figure 15.11.

15.5.19 Landing Legs

Vertically adjustable supporting members of a landing gear to which sandshoes or wheels are attached.

15.5.20 Running Lights

Marker, clearance, and identification lights of a chassis. (See Figure 15.12.)

15.5.21 Sandshoe

A horizontal steel plate used on a landing gear (supports) which serves as the ground contact surface. Sometimes used in combination with a wheel type landing gear.

15.5.22 Semitrailer

A vehicle equipped with one or more axles and constructed so that the front end, and a substantial part of its own weight and that of its load, rests upon a truck tractor. A container chassis is a special type of semitrailer.

15.5.23 Seven-Way Plug (7-way plug; 7-way connector)

The electrical connector carrying seven circuits which transmits electrical power from the tractor to the chassis. A 6-way plug or connector contains six circuits, etc. See Figure 15.13.

15.5.24 Spring Suspension

A suspension utilizing one or more cambered steel leaves to absorb road shocks from the axles and transfer loads through suspension components to the suspension subframe.

15.5.25 Hangers

The brackets used to mount the suspension to the subframe. Made to accommodate the end of the spring.

15.5.26 Suspension

A means whereby the axle or axles of a unit are attached to the vehicle frame. Designed in such a manner that road shocks are absorbed through springs (leaf, air, torsion, or other), thus reducing the forces entering the frame. Overslung suspension is a suspension where the spring passes over the axle. Underslung suspension is a suspension where the spring passes under the axle.

15.5.27 Tare Weight

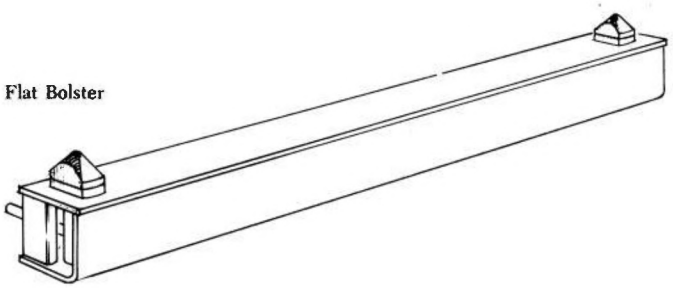
The weight of a chassis without the container.

15.5.28 Truck Tractor

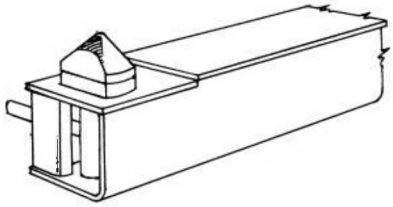
A powered motor vehicle used for pulling a chassis or semitrailer and so constructed as to carry part of the chassis weight and load.

FIGURE 15.7 Typical Bolsters

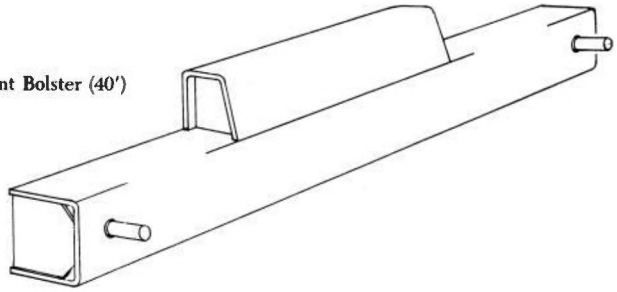
Flat Bolster



Stepped Bolster



Front Bolster (40′)



15.5.29 Twist Lock

A securement device consisting of a rotatable head and fixed collar that projects into the bottom aperture of a bottom corner fitting to prevent the disengagement of the container from the chassis when the rotatable head is in the locked position. (See Figure 15.14.)

15.5.30 Undercarriage

Consists of the complete subframe suspension, with one or more axles which may be interconnected, and wheels, tires and brakes.

15.5.31 Upper Coupler Assembly

Consists of the upper coupler plate, reinforcement framing and kingpin mounted on a chassis.

15.5.32 Upper Coupler Plate

A plate structure through which the kingpin neck and collar extend. The bottom surface of the plate contacts the fifth wheel when the chassis is coupled.

15.7 Design Considerations

The chassis is to have sufficient structural strength to remain serviceable and withstand, without significant permanent deformation, the static and dynamic loads imposed by normal service in highway, railway, and shipboard service when loaded to its GVWR. The specific design loading requirements are to be not less than those given in 15.7.1 times the GVWR. The manufacturer is responsible for designing the chassis with sufficient strength to withstand the design loads and is to include factors of safety allowing for fatigue, normal wear and tear, manufacturing fabrication techniques, and material properties. The chassis shall be operable in climate conditions varying from –45°C to 54°C (–50°F to 130°F).

15.7.1 Direction of Forces

Acceleration of forces relative to the longitudinal axis of the chassis are:

Direction	*Accelerations*
Downward	1.7G
Upward	0.5G
Lateral	0.3G
Longitudinal	3.5G

G represents the acceleration due to gravity.

The above values are for railway and road requirements. When the chassis is to be used for shipboard service, the downward acceleration of force is to be 1.8G. The acceleration of forces are assumed to act singly or simultaneously in any combination.

15.7.2 Load Transfer Areas

The chassis is to be capable of accepting the container loads in the vertical downward direction by one or more of the three possible means listed herein.

- **a** By accepting loads from the container corner fittings through the front and rear supporting bolsters in the area of the container securement devices only.
- **b** By accepting loads from the container base structure through the chassis main frame in area specified as the load transfer zones in Figure 6.2.
- **c** By any combination of the above.

15.7.3 Container Securing Devices

The chassis is to be capable of absorbing the lateral forces shown in 15.7.1 through the fittings (and gooseneck, when provided) mounted on one side of the chassis, acting in either direction, when the container is loaded to its maximum gross weight. The chassis is to be capable of absorbing the longitudinal forces shown in 15.7.1 through the fittings mounted on one end of the chassis, acting in either direction. The twist locks are to be capable of withstanding 2.5 times the tare weight of the chassis in a vertical upward direction. The securing devices are to restrain the container from moving laterally, longitudinally, or vertically more than 25 mm (1 in.).

15.7.4 Chassis Securing Points

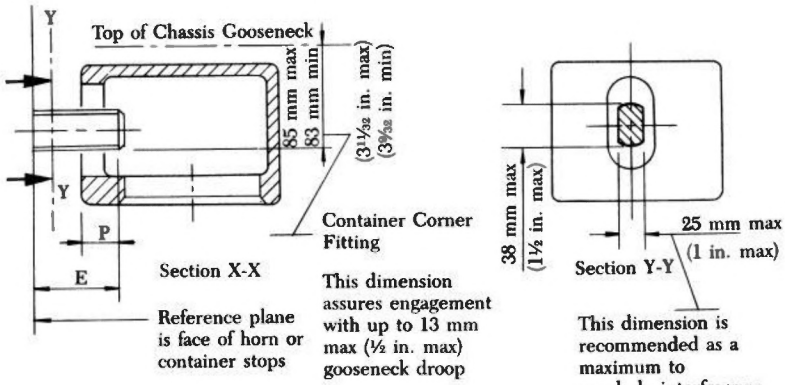
Securing points on chassis (see Figure 15.15), when provided, are to be designed for the purpose of securing the chassis to the ship's deck and are to have an aperture or apertures each capable of accepting only one lashing. The securing point should permit varying directions of the lashing to the ship's deck. If more than one aperture is fitted to one securing point, each aperture is to have the same strength as is required or the securing point in the table below. The same number of securing points are to be provided on each side of the chassis, the minimum number being two, the maximum is six.

The minimum required strength for each securing point is to be determined by the following formula:

$$Sr = \frac{GVWR \times 10 \times 1.2}{n}$$

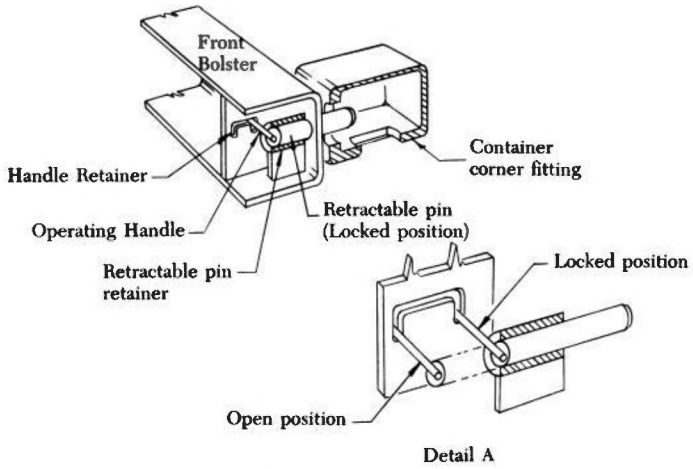
Sr = minimum required strength for each securing device
GVWR = the Gross Vehicle Weight Rating
n = the minimum number of securing points on one side of the chassis

FIGURE 15.8 Front Pin Locking Device



P (Pin penetration) 32 mm min (1¼ in. min) Measured from front face of corner fitting in rearmost position on chassis to end of pin exclusive of chamfer

E (Pin Extension) 67 mm min (2⅝ in. min) Measured from rear face of horn or stops to end of pin exclusive of chamfer



Detail A

Securing points should be capable of transferring the load from the lashings to the structure of the chassis. Securing points are not to be fitted to the bumpers or axles of any chassis, unless these latter items are specially constructed and the loads are directly transmitted to the chassis. Securing points on chassis should be located so as to ensure an effective restraint by the lashings. Securing points should be located in positions where the lashings can be readily and safely attached. This should be taken into account, particularly where side-guards, or fenders are fitted to the chassis. The internal free passage of the aperture should be not less than 80 mm (3 in.). The aperture need not be circular in shape. A marking in a clearly visible color should indicate each securing point on the vehicle.

15.9 Design Features

15.9.1 Container Securing Devices

Securing devices are to be provided for each container size for which the chassis is designed. All securing devices are to be capable of being locked and unlocked to the corner fittings of either a loaded or unloaded container without undue force.

The twist lock and collar of a securing device are to be in accordance with Figure 15.14. The operating handle is to be capable of rotating 90 degrees and is to be parallel with the bolster when in a locked position. The pin of a front pin locking device is to be in accordance with Figure 15.8. The locking pin is to penetrate the corner fitting 32 mm (1¼ in.) minimum when measured from the face of the front corner fitting.

The dimensions for the distance between the centers of the container securing devices, and the value of the difference of the diagonal tolerances are not to exceed those given in Figure 15.18.

15.9.2 Kingpin

A coupling pin, commonly referred to as a kingpin, is to be provided for coupling the chassis to the fifth wheel of the tractor. The location of the kingpin is to be specified by the applicant. The dimensions of the kingpin are to be in accordance with ISO 337 as shown in Figure 15.10. The kingpin is to be designed to meet the rail mode operational conditions required by AAR Specification 7-931-83, Part 4.2.3. The kingpin is to be hardened to 380–420 on the Brinell scale or equivalent.

The kingpin is to be mounted in accordance with ISO 337. Alternative methods of mounting will be considered provided they are no less effective. If the alternative method of mounting provides for welding, the process including the grade and/or specification of the electrodes is to be submitted for review.

15.9.3 Chassis Support

A chassis support is to be provided to support the chassis when it is not coupled to a truck tractor. The chassis support includes the landing gear assembly, bracing, mounting brackets, and fasteners that connect these items to the chassis.

The distance between the landing gear and the transverse center line of the kingpin, is to be specified by the applicant. Where manually operated landing gears are used, they are to be equipped with heavy duty wheels or pads (sand shoes) and heavy duty axles. The lifting capacity of both landing gear legs is to be a minimum of 17,235 kg (38,000 lbs.), with 135.6 Nm (100 ft. lbs.) of torque delivered to the input shaft.

The mounting holes for the landing gear box or plate are to be in two vertical rows 190 mm (7½ in.) apart, center to center, horizontally and 51 mm (2 in.) apart, center to center, vertically, as shown in Figure 15.16.

The landing gear leg spacing dimensions are to be a minimum of 1143 mm (45 in.) from the inside edge of the wheels or sand shoes, and a maximum of 2235 mm (88 in.) from the outside edge of the wheels or sand shoes. There is to be no cross bracing which results in less than 305 mm (12 in.) road clearance. See Figure 15.11. Chassis are not to be supported solely by their own landing legs during transport.

15.9.4 Couplers

Coupling devices i.e. glad hands, are to be provided for connecting air brake lines between the chassis and the tractor. They are to be so designed that the service brake line and emergency line brake cannot be misconnected.

15.11 Electrical System and Reflectors

The electrical system, including the connector socket, the quantity and type of lamps, the quantity and type of reflectors, are to be submitted for review. All electrical components are to meet the requirements of the government* where the chassis is intended for service. (See Figures 15.12 and 15.17.)

15.11.1 Connector Socket

The connector socket** is to be designed in accordance with paragraph 4.3 of ISO 3731 or 4.3 of ISO 3732 determined by the design voltage of the chassis. (See Figure 15.13).

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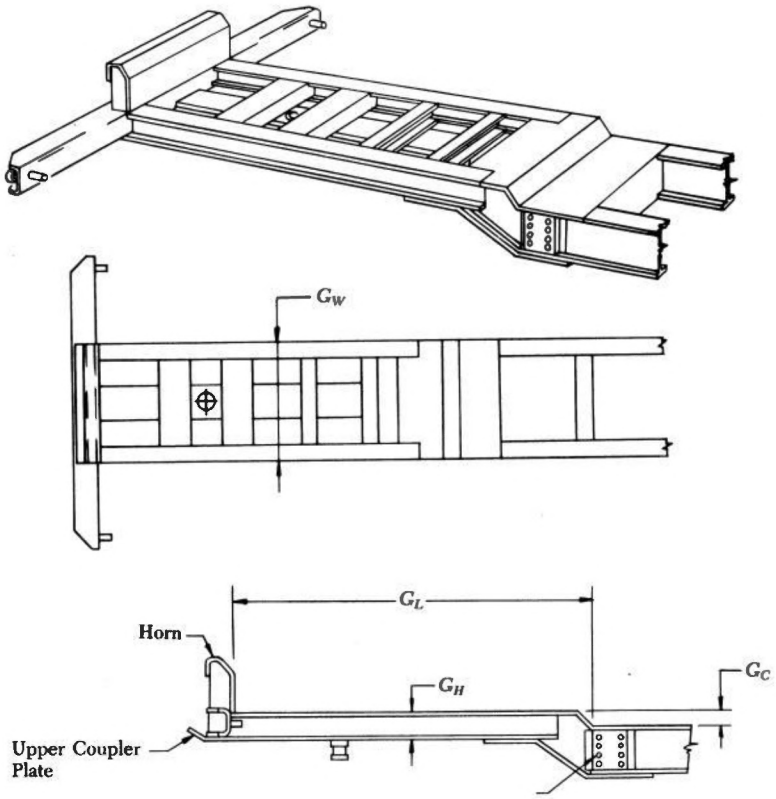
*The United States requirements for the electrical system is published by the Bureau of Motor Carrier Safety in the Code of Federal Regulations, Title 49, Part 393.

**The connector socket is to be designed to receive the connector plug, which is not part of these requirements, also shown in Figure 15.13.

FIGURE 15.9 Gooseneck



Chassis Gooseneck Dimensions

		Millimeters	Inches
Gooseneck Length	G_L	3124 Max	123 Max
Gooseneck Width	G_W	1016^{+0}_{-3}	$40^{+0}_{-Z\setminus,}$
Gooseneck Height Above Upper Coupler Plate	G_H	121 Min	4¾ Min
Gooseneck Height Above Main Frame	G_C	$121^{+0}_{-1.5}$	$4^{3}/_{4}{}^{+0}_{-}$ $Z\setminus z$

The chassis gooseneck illustrated is compatible with the tunnel dimensions shown in Figure 6.5. It may not be compatible with existing non-standard tunnel type containers.

15.11.2 Wiring

A conventional seven wire cable is to be installed as shown in Figure 15.17. The wiring harness is to be made in two main sections coupled by a watertight junction box just ahead of the rear bolster. Separate harnesses from the electrical socket are to be provided inside the front bolster for the front marking lights. The harness is to be supported by grommets through the upper coupler area and secured along the main rails with non-metallic or plastic coated clips. Where the hardness passes through crossmembers, bolsters, or other steel components, rubber grommets are to be used.

15.11.3 Lamps

The quantity and location of lamps are to be as shown in Figure 15.12 or as required by the country of intended service. The lamps are to be recessed from the sides and ends of the chassis for protection.

15.11.4 Reflectors

The quantity and location of reflectors are to be as shown in Figure 15.12 or as required by the country of intended service. The reflectors are to be recessed from the sides and ends of the chassis for protection.

15.13 Testing Requirements

15.13.1 Prototype Tests

The prescribed tests, 15.15.1 through 15.15.19 are required to be performed on a prototype. The tests are to be witnessed by a Surveyor. The tests need not all be performed on the same chassis, nor sequence listed. However, the tests are not to be performed on more than two representative chassis; the dimensional check is to be done first.

When the result of any test is not satisfactory, the test is to be repeated on a minimum of two additional chassis to demonstrate satisfactorily the adequacy of the design.

15.13.2 Production Tests

The prescribed tests 15.15.1 and 15.15.6 are to be performed on each production unit. If the manufacturing operation has sufficient jigs and fixtures to control dimensions, and the quality control procedures assure their accuracy, the frequency of performing the dimensional check may be modified.

The Surveyor is to witness representative production tests during periodic visits to the plant of the manufacturer. Records of production tests are to be made available to the Surveyor during the periodic visits.

15.15 Tests

15.15.1 Dimensional Check

The chassis under test is to be measured to ensure compliance with the dimensional specifications in Figure 15.18.

15.15.2 Attachment/Fastener Fabrication Check

The attending Surveyor is to verify that all welded components and those secured by fasteners are fabricated in accordance with reviewed prints. Fasteners are to be checked for the manufacturers specified torque.

15.15.3 Kingpin Alignment Test

The kingpin is to be tested for alignment on the longitudinal and transverse centerlines. A gauge, as shown in Figure 15.19 is to be placed in contact with the upper coupler plate and slid over the kingpin. The kingpin must pass through the slot in the gauge with the top of the gauge in contact with the upper coupler plate.

15.15.4 Axle Alignment Test*

The chassis is to be placed on a level surface. The unloaded vehicle is to be rolled back and forth to avoid brake applications. The vehicle *must* be level from side to side as well as from front to rear. Remove the outer wheels or affix extenders to the axle ends to achieve a straight line from the kingpin to the axle. (See Figure 15.20.)

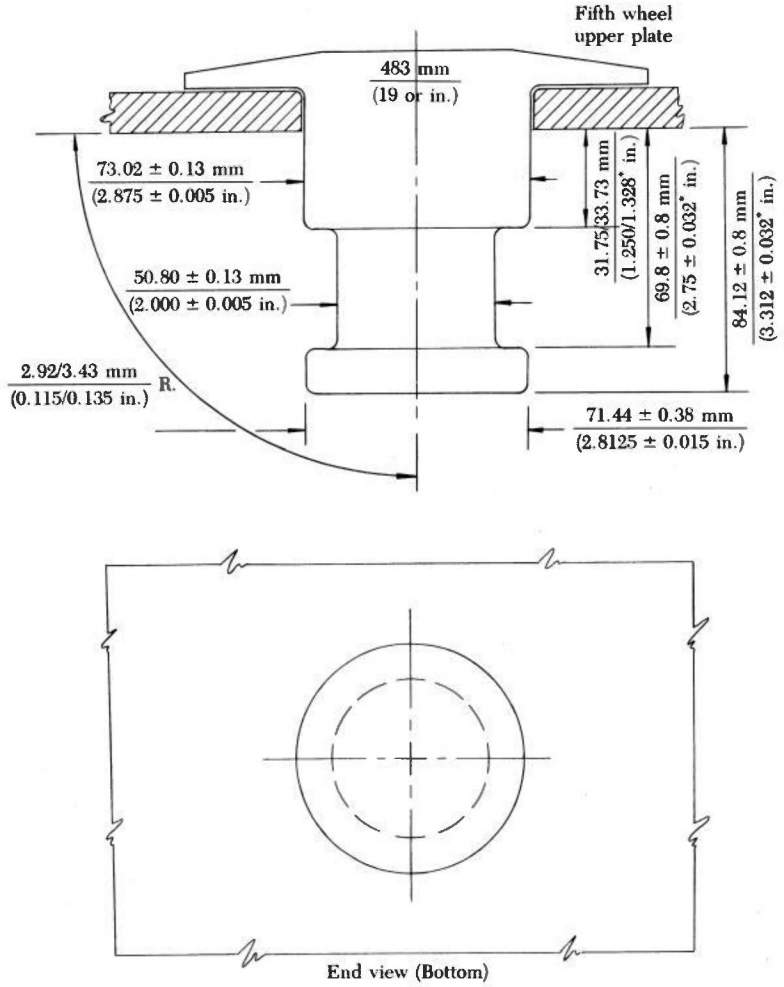
a The distance from the kingpin to the axle on both sides of the front axle are to be measured. The distances are to be equal, within 3 mm (Z\, in.).

b When tandem axles are provided the distances between axles are to be measured on both sides of the chassis. The distances are to be equal, within 1.5 mm (Z\zn in.).

c The lateral centerline of the chassis body and axles are to be determined. The distances between the centerlines should not exceed 6 mm (¼ in.).

*This test is intended as a guide for the alignment of axles on newly manufactured and rebuilt chassis and describes one procedure for measuring chassis axle alignment with simple tools. Other procedures will also be considered.

FIGURE 15.10 Fifth Wheel Kingpin



15.15.5 Electrical System Test

The chassis is to be in a normal operating position coupled to a tractor, with its electrical connector plug connected to the tractor's power supply. The chassis is to be examined for:

Installation of all wiring and connector sockets
Installation of grommets
Quantity, type and location of lamps
Operation of all lamps, i.e., running, directional, brake

15.15.6 Air Brake System Test

The chassis may be road tested for proper operation of both service and emergency brake systems. Alternatively the chassis may be tested using the procedure described below and as shown in Figure 15.21.

a The chassis couplers (glad hands) are to be connected to air lines through air line couplers. The shut-off valve in the control (service) line is to be closed. Air is to be allowed to enter through the supply (emergency) line. The air pressure is to be between 7.7 and 8.4 kg/cm^2 (110 to 120 psi). The valve in the control (service) line is to be opened and the brakes should apply.

b Close the valve in the air supply line and in the control (service) line leaving service brakes applied. The pressure at the gauges is to be recorded and held for five minutes. A drop in pressure exceeding .35 kg/cm^2 (5 psi) is considered unacceptable. The system is to be checked for leaks. If there are any, they must be repaired. Then this procedure is to be repeated until the system holds the pressure as prescribed above.

c With the valves in the air supply line and in the control (service) line closed, uncouple the control (service) glad hands. The air in the control (service) line will exhaust into the atmosphere. The brakes should release. The drain cock in the supply line is to be opened and the pressure is to be allowed to drop gradually, the relay emergency valve should function and apply the brakes.

d After the air in the supply (emergency) line of relay emergency valve systems is exhausted, there is to be no air flowing out of the exhaust port of the drain.

The drain cock in the supply (emergency) lines is to be closed. The valve in the air supply line is to be opened. The brakes, which were applied in the emergency application, should release.

15.15.7 Kingpin and Upper Coupler Assembly Test

The chassis is to be placed on a level asphalt or concrete surface. The landing gear legs are to be extended to maintain the chassis in a level position. A container is to be placed on the chassis and secured with the chassis own container securing devices. The container is to be loaded with an evenly distributed load. The weight of the container with its load, plus the chassis is to equal the GVWR. A tractor is to couple its fifth wheel with the kingpin of the chassis. The approach and coupling is to be sudden. The tractor is to be moved 3 m (10 ft) forward, returned to its starting position and uncoupled from the chassis. The test is to be done three times. The first test is to be with the tractor in line with chassis; the second approach is to be 90 degrees to the roadside; the third approach is to be 90 degrees to the curbside.

15.15.8 Grappler Lift Test

The chassis is to be placed on a level asphalt or concrete surface. The landing gear legs are to be extended to maintain the chassis in a level position. A container is to be placed on the chassis and secured with the chassis own container securing devices. The container is to be raised leaving the chassis suspended by its own securing devices. The chassis shall remain suspended for a period of not less than five minutes.

15.15.9 Chassis Landing Gear System Strength Test

The chassis is to be placed on a level asphalt or concrete surface. The landing gear legs are to be extended to maintain the chassis in a level position. A container is to be placed on the chassis resting in its normal operating position, i.e. on the four twist lock pads or two twist lock pads and its tunnel. The container is to be secured with the chassis own container securing devices. The container is to be loaded with an evenly distributed load. The container with its load, plus the chassis, is to equal the GVWR. The loaded container is to remain on the chassis for not less than five minutes.

Note: Some production plant procedures facilitate handling of in-process running gear assemblies by caging (securing the brakes in not applied position) the spring brakes on the assemblies. It is necessary, therefore, that the inspection procedure be applied after all other required system checks have been performed.

FIGURE 15.11 Landing Gear Spacing and Road Clearance

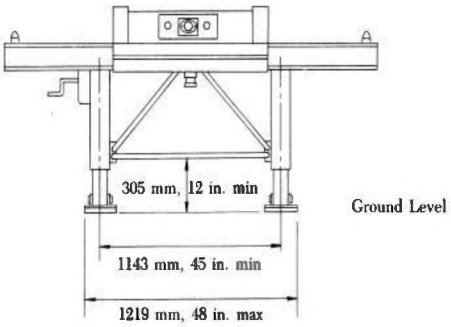
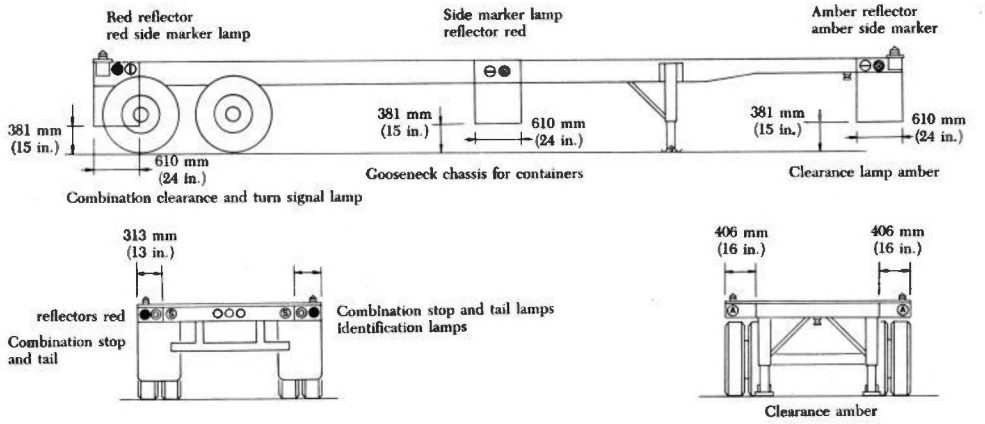


FIGURE 15.12 Lamp and Reflector Layout



Key

○○○ Identification lamps
◘ Combination clearance and turn signal lamp
⑤ Combination stop and tail
⊗ Turn signal lamp
Ⓓ Side marker-red
⊖ Side marker-amber
● Reflector-red
● Reflector-amber
○ Clearance-red
Ⓐ Clearance-amber

Notes (referenced in sketches)

(1) All lamps must be marked, certified, and meet visibility requirements.

(2) A license plate lamp is also required though not shown in sketches.

(3) Side marker lamps should be located within the indicated zones shown in the sketch. DOT requires that the rear side marker lamps be not less than 15 inches nor more than 60 inches from the ground. TTMA recommends that all side markers be not less than 15 inches nor more than 60 inches from the ground.

(4) Intermediate side marker lamps and reflectors are not required on trailers less than 30 feet overall length. The overall trailer length may be computed exclusive of either the dolly or the tongue.

(5) Reflectors shall not be less than 15 inches nor more than 60 inches from the ground.

(6) Rear clearance and identification lamps on dump and opentop trailers may be located on the rear sill and be in compliance, provided this is as high as practicable.
Rear clearance and identification lamps on closed van trailers where the door opening height is less than one inch smaller than the trailer body inside height and the door header is not greater than approximately two inches with less than one inch of available space for mounting lamps may be located on the rear sill and be in compliance, provided this is as high as practicable.

(7) Front clearance lamps must indicate extreme width even if this location is not at the top or front of the trailer in the case of a small diameter tank, the proper location would be on front of rear fenders.

(8) Front clearance lamps are not required at top on removable front bulk-head. Mounting must be on rigid part of front member. Front clearance lamps may be mounted at the frame level on platform trailers with permanent front bulk-heads if a higher mounting would reflect into the drivers eyes by way of the side view mirror.

15.15.10 Chassis Support Strength Test

The chassis is to be placed on a level asphalt or concrete surface. The landing gear legs are to be extended to maintain the chassis in a level position. A container is to be placed on the chassis and secured with the chassis own container securing devices. The container is to be loaded with an evenly distributed load. The weight of the container with its load, plus the chassis, is to equal 1.7 times the GVWR. The front of the chassis to be supported by a tractor or other device, but the kingpin is not to be engaged. The chassis front is to be elevated until the landing gear support legs are 50 to 100 mm (2 to 4 in.) above the test surface then lowered until the complete load is reimposed gradually on the chassis support.

15.15.11 Drop Test

The chassis is to be placed on a level asphalt or concrete surface. The landing gear legs are to be extended to maintain the chassis in a level position. A container is to be placed on the chassis and secured with the chassis own container securing devices. The container is to be loaded with an evenly distributed load. The weight of the container with its load, plus the chassis, is to equal the GVWR. The front end of the chassis is to be elevated by a tractor until the support legs are 90 mm (3½ in.) above the test surface. The tractor is not to engage the kingpin but is to extend under the chassis the minimum distance required to support the chassis in a static condition. The tractor is to be accelerated abruptly permitting the chassis to drop and the landing gear to impact on the asphalt or concrete surface. This test is to be repeated ten times.

15.15.12 Landing Gear Bracing Test, Longitudinal

The chassis is to be placed on a level asphalt or concrete surface. The chassis is to be empty and coupled to a tractor or otherwise secured to withstand the forces to be applied. The landing gear legs are to be extended to maintain the chassis in a level position.

A force equal to 6350 kg (14000 lb) is to be applied simultaneously to each of the extended landing gear legs. The force is to be applied parallel to the longitudinal axis of the chassis at midpoint on the centerline of the axle of the landing gear shoe. The force is to be applied first toward the rear of the chassis and then toward the front of the chassis.

In each case the force is to be held for not less than five minutes.

15.15.13 Landing Gear Strength Test, Longitudinal

The chassis is to be placed on a level asphalt or concrete surface. The chassis is to be empty and coupled to a tractor or otherwise secured to withstand the forces to be applied. The landing gear legs are to be extended to maintain the chassis in a level position.

A 5,900 kg (13,000 lb) horizontal force is to be applied parallel to the longitudinal axis of the chassis at midpoint on the center line of the axle of the landing gear. The force is to be applied first toward the front of the chassis and then toward the rear of the chassis. The force is to be held for not less than five minutes. Upon removal of the force, the torque delivered at the input shaft to extend or retract the legs is not to exceed 135.6 Nm (100 ft lb).

This test may be waived if: test 15.15.12 Landing Gear Bracing Test, Longitudinal, was conducted with the landing gear in place; and tubes simulating the landing gear were not used; and the results of the test are considered satisfactory.

15.15.14 Landing Gear Bracing Test, Lateral

The chassis is to be placed on a level asphalt or concrete surface. The chassis is to be empty and coupled to a tractor or otherwise secured to withstand the forces to be applied. The landing gear legs are to be extended to maintain the chassis in a level position.

A force equal to 9,075 kg (20,000 lb) is to be applied to the landing gear legs parallel to the transverse axis of the chassis. The force is to be applied to the extended legs on the centerline of the axle of the landing gear shoe. The force is to be divided with 5,900 kg (13,000 lb) being applied inward and 3,175 kg (7,000 lb) being supplied outward simultaneously.

15.15.15 Landing Gear Strength Test, Lateral

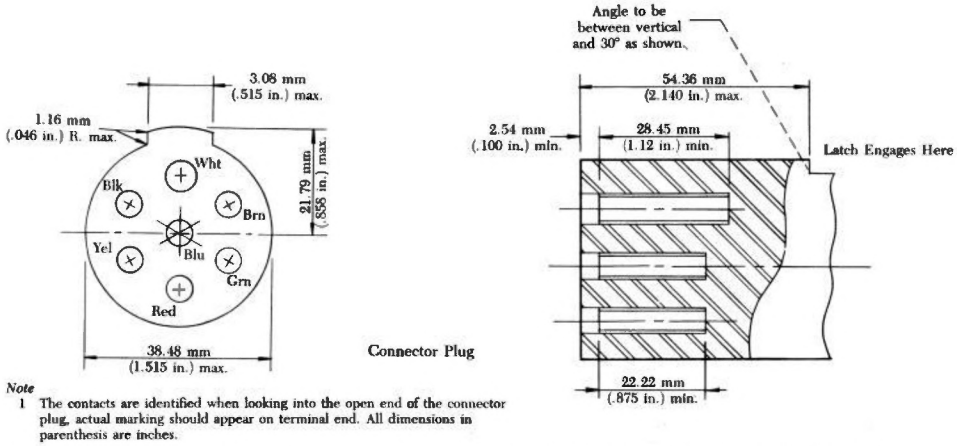
The chassis is to be placed on a level asphalt or concrete surface. The chassis is to be empty and coupled to a tractor or otherwise secured to withstand the forces to be applied. The landing gear legs are to be extended to maintain the chassis in a level position.

A force equal to 5,900 kg (13,000 lb) is to be applied to the landing gear legs parallel to the transverse axis of the chassis. The force is to be applied inward at the centerline of the axle of the landing gear shoe.

The force is to be held for not less than five minutes. Upon removal of the force, the torque delivered at the input shaft to extend or retract the legs is not to exceed 135.6 Nm (100 ft lb).

Note: If the landing gear legs are provided with wheels instead of sand shoes, the force is to be applied 25 mm (1 in.) above the bottom of the leg.

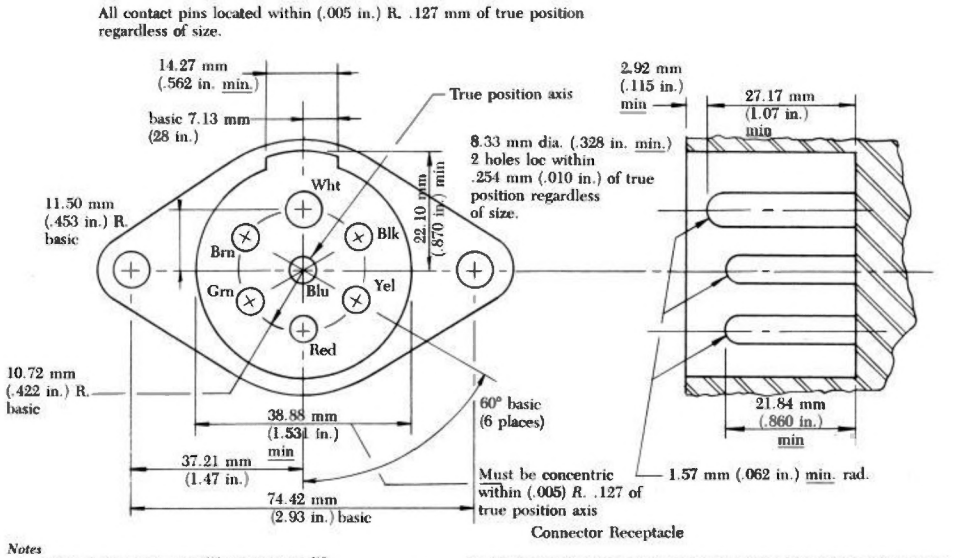
FIGURE 15.13 Seven Conductor Electrical Connector



Note

1 The contacts are identified when looking into the open end of the connector plug, actual marking should appear on terminal end. All dimensions in parenthesis are inches.

Conductor Identification	*Wire Color*	*Lamp and Signal Circuits*
Wht	White	Ground return to towing vehicle
Blk	*Black	Clearance, side-marker, and identification lamps
Yel	Yellow	Left-hand turn signal and hazard signal lamps
Red	Red	Stop lamps and antilock devices
Grn	Green	Right-hand turn signal and hazard signal lamps
Brn	*Brown	Tail, clearance, side-marker lamps and license plate lamps
Blu	Blue	Auxiliary



Notes

1 External contact no. 1¼ $^{+.002}_{-.005}$ round ($6.35^{+.051}_{-.127}$)

2 External contacts no. 2-thru-7 inclusive 3/16 $^{+.002}_{-.005}$ round ($4.75^{+.051}_{-.127}$)

3 The contacts are identified when looking into the open end of the insert. Actual markings should appear on terminal end. All dimensions in parenthesis are millimeters.

15.15.16 Landing Gear Strength Test, Vertical

The chassis is to be placed on a level asphalt or concrete surface. A container is to be placed on the chassis. The container is to be secured with the chassis own securing devices. The landing gear legs are to be extended to maintain the chassis in a level position. The container is to be loaded to a landing gear axle weight of 31,750 kg (70,000 lb).

The load is to be held for not less than five minutes. Upon removal of the load, the torque delivered at the input shaft to extend or retract the legs in low gear is not to exceed 135.6 Nm (100 ft lb).

15.15.17 Landing Gear Strength Test, Component

The chassis is to be placed on a level asphalt or concrete surface. The landing gear legs are to be extended to maintain the chassis in a level position. A container is to be placed on the chassis. The container is to be secured with the chassis own securing devices.

The container is to be loaded to a landing gear axle weight of 1.5 times the landing gears rating. The legs are to be retracted 76 mm (3 in.) and then extended 76 mm (3 in.).

Upon removal of the load, the torque delivered at the input shaft to extend or retract the legs in low gear is not to exceed 135.6 Nm (100 ft lb).

15.15.18 Landing Gear Strength Test, Lifting

The chassis is to be placed on a level asphalt or concrete surface. A container is to be placed on the chassis. The container is to be secured with the chassis own securing devices. The landing gear legs are to be extended 370 mm (14½ in.) or until the chassis is level. The container is to be loaded to a front axle weight equal to the design rating of the landing gear.

The low gear of the landing gear assembly is to be engaged. Torque is to be applied to the input shaft to extend the legs 25 mm (1 in.). The torque is to be measured at the input shaft. The average torque measured during the extension procedure is not to exceed 135.6 Nm (100 ft lb).

15.15.19 Securing Point Strength Test

The chassis is to be placed on a level asphalt or concrete surface. The landing gear legs are to be extended to maintain the chassis in a level position. The chassis is to be empty and secured to withstand the forces to be applied.

1. The securing ring is to be measured. The dimensions are to be within the minimum and maximum dimensions shown.

2. A force equal to the GVWR times 10 times 1.2 divided by the total number of securing points on each side of the chassis is to be applied in tension to a securing ring. The force is to be applied three times. The line of force is to be at 30°, 60°, and 90° to the longitudinal axis of the chassis, while at 60° downward to the horizontal plane.

The force is to be held for not less than five minutes. Upon removal of the force, the securing point is not to exhibit any deformation.

FIGURE 15.14 Twist Lock Securing Device

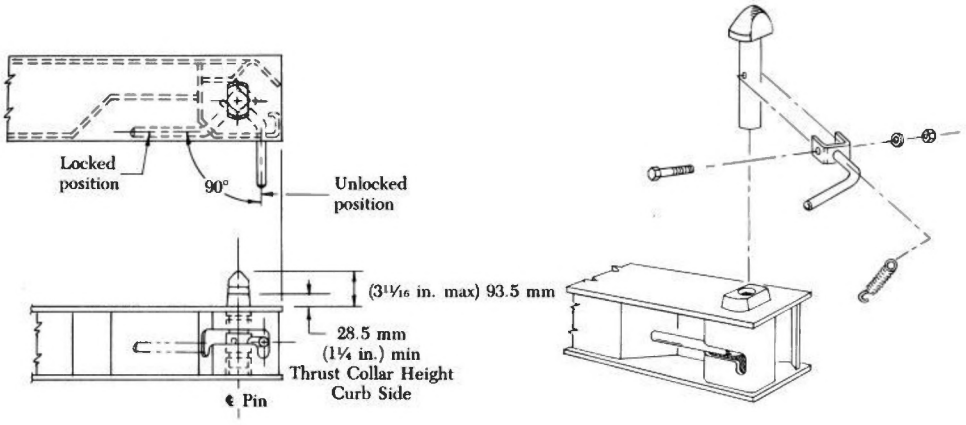


FIGURE 15.15 Chassis Securing Point

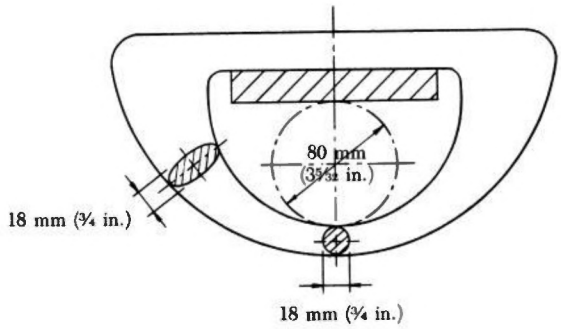


FIGURE 15.16 Mounting Hole Pattern in Landing Gear Support Bracket

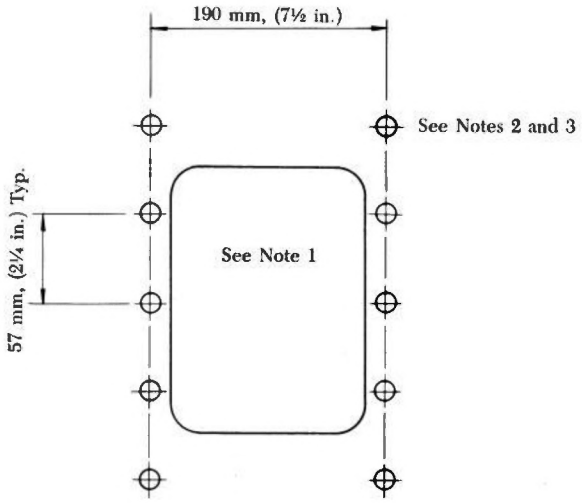
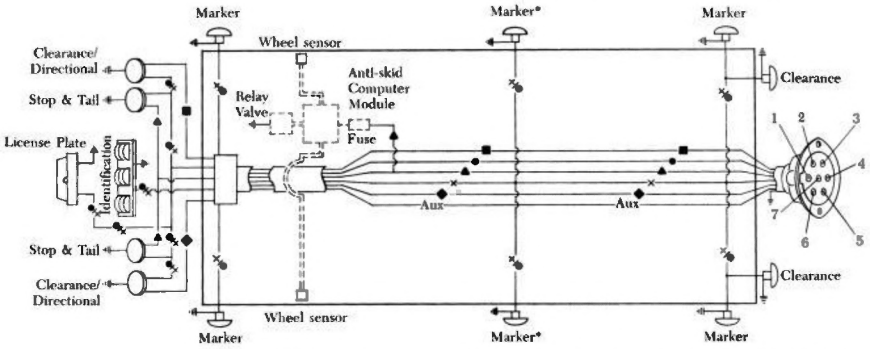


FIGURE 15.17 Electrical System Schematic

Conductor No.	*Color*	*Key*	*Lamp and Signal Circuits*
1	White	⊣⊢	Ground Return to Towing Vehicle
2†	Black	×	Clearance, Side Marker, and Identification Lamps
3	Yellow	■	Left-Hand Turn Signal and Hazard Signal Lamps
4	Red	▲	Stop Lamps, Anti-lock Devices (When Installed)
5	Green	◆	Right-Hand Turn Signal and Hazard Signal Lamps
6†	Brown	●	Tail, Clearance, Side-Marker and License Plate Lamps
7	Blue	AUX	Auxiliary, Optional Lamps, Dome, Etc.

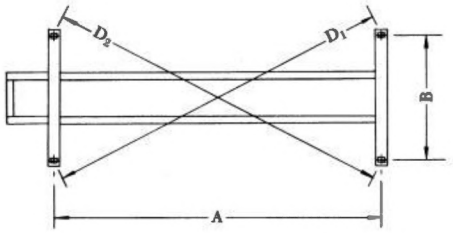


Rear Plug for Doubles Operation Only.

*Omitted on units less than 30 ft. long.

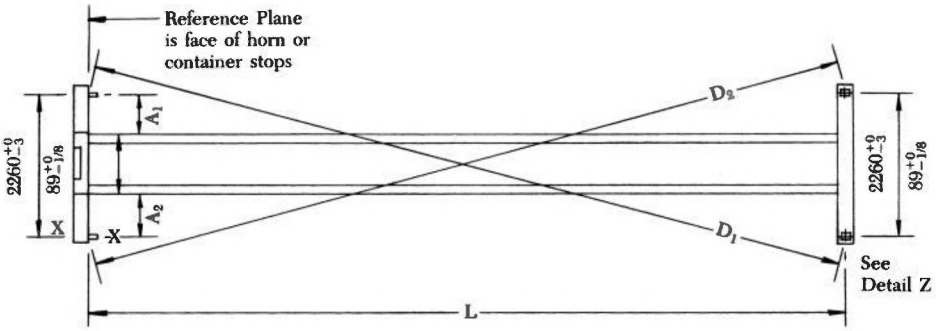
†Conductor No. 2 Black and No. 6 Brown should be balanced ●/x x/● = optional.

FIGURE 15.18 Dimensional Requirements Straight Frame Chassis



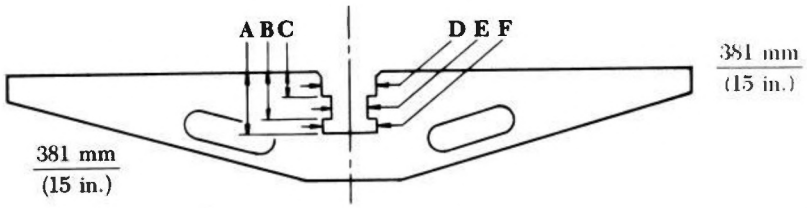
Freight Container Designation	*Length (external)* mm	ft	in.	A mm	ft	in.	B mm	ft	in.	K Max = D_1 • D_2 or D_2 • D_1 mm	in.
40-FT	12192	(40	0)	11985 ± 6	(39	3⅞ ± ¼)	2260^{+0}_{-3}	(7	$5^{+0}_{-1/8}$)	16	⅝
30-FT	9125	(29	11¼)	9818 ± 6	(29	3⅞ ± ¼)	2260^{+0}_{-3}	(7	$5^{+0}_{-1/8}$)	13	½
20-FT	6058	(19	10½)	5853 ± 6	(19	$2^{7}/_{16}$ ± ¼)	2260^{+0}_{-3}	(7	$5^{+0}_{-1/8}$)	10	⅜
10-FT	2991	(9	9¾)	2787 ± 6	(9	$1^{23}/_{32}$ ± ¼)	2260^{+0}_{-3}	(7	$5^{+0}_{-1/8}$)	6	¼

Dimensional Requirements
Gooseneck Chassis



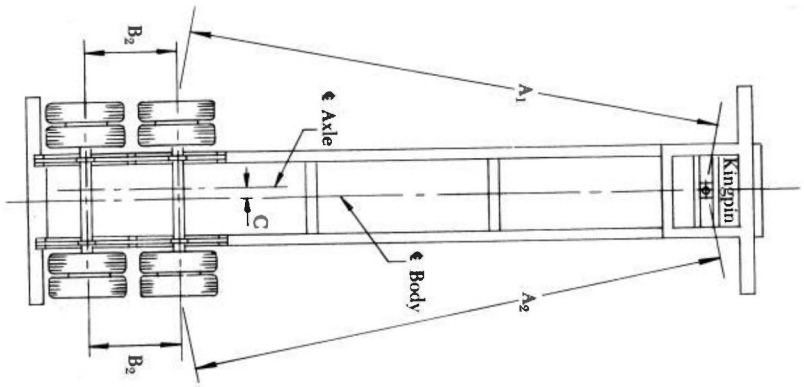
Container size mm	ft	in.	*L* mm	ft	in.	*K Max* mm	in.
12192	40	0	11985 ± 6	(39	8¼ ± ¼)	16	(⅛)

FIGURE 15.19 Kingpin Gauge



A	*B*	*C*	*D*	*E*	*F*
86.31 mm (3.398 in.)	67.59 mm (2.661 in.)	36.35 mm (1.431 in.)	74.55 mm (2.935 in.)	53.42 mm (2.103 in.)	74.78 mm (2.944 in.)

FIGURE 15.20 Axle Alignment



$A_1 = A_2$, ± 3 mm (⅛ in.)
$B_1 = B_2$, ± 1.5 mm (1/16 in.)
C = <6 mm (¼ in.)

FIGURE 15.21 Brake System Test

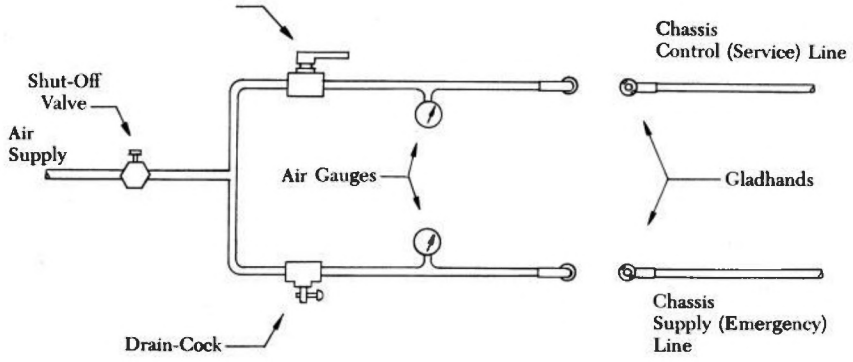


EXHIBIT I-10

ENTIRE EXHIBIT NOT CAPABLE OF PUBLIC SUMMARY

EXHIBIT I-11

NY E85372

August 6, 1999

CLA-2-87:RR:NC:MM:101 E85372

CATEGORY: Classification

TARIFF NO.: 8716.39.0090

Mr. C.B. Lay
C.B. Lay Customs Brokers, Inc.
230 International Avenue
P.O. Drawer JJ
Douglas, Arizona 85608

RE: The tariff classification of a Trailer, Container Chassis to transport steel ocean freight containers assembled in Mexico

Dear Mr. Lay:

In your letter dated July 18, 1999 you requested a tariff classification ruling.

You submitted a drawing of a 40 foot trailer, container chassis.

The article in question is known as a Trailer, Container Chassis and is used to transport steel ocean freight containers from the U.S. port of arrival to the container's U.S. destination. The trailers which are proposed for importation into the United States are of two lengths: a 20 foot and a 40 foot trailer. Following the placing of the (ocean) container on the trailer chassis and the container being locked in place on the trailer, the trailers are pulled over the road by means of a fifth wheel diesel tractor.

The applicable subheading for the Trailer Container Chassis will be 8716.39.0090, Harmonized Tariff Schedule of the United States (HTS), which provides for Trailers and semi-trailers; other vehicles not mechanically propelled; and parts thereof: Other trailers and semi-trailers for the transport of goods: Other...Other: Other: Other. The rate of duty will be Free.

This ruling is being issued under the provisions of Part 177 of the Customs Regulations (19 C.F.R. 177).

A copy of the ruling or the control number indicated above should be provided with the entry documents filed at the time this merchandise is imported. If you have any questions regarding the ruling, contact National Import Specialist Robert DeSoucey at 212-637-7035.

Sincerely,

Robert B. Swierupski
Director,
National Commodity
Specialist Division

EXHIBIT I-12

CHAPTER 87

VEHICLES OTHER THAN RAILWAY OR TRAMWAY ROLLING STOCK,
AND PARTS AND ACCESSORIES THEREOF

Notes

1. This chapter does not cover railway or tramway rolling stock designed solely for running on rails.

2. For the purposes of this chapter, "tractors" means vehicles constructed essentially for hauling or pushing another vehicle, appliance or load, whether or not they contain subsidiary provision for the transport, in connection with the main use of the tractor, of tools, seeds, fertilizers or other goods.

   Machines and working tools designed for fitting to tractors of heading 8701 as interchangeable equipment remain classified in their respective headings even if presented with the tractor, and whether or not mounted on it.

3. Motor chassis fitted with cabs fall in headings 8702 to 8704, and not in heading 8706.

4. Heading 8712 includes all children's bicycles. Other children's cycles fall in heading 9503.

Subheading Note

1. Subheading 8708.22.00 covers:

   (a) front windscreens (windshields), rear windows and other windows, framed; and

   (b) front windscreens (windshields), rear windows and other windows, whether or not framed, incorporating heating devices or other electrical or electronic devices, when suitable for use solely or principally with the motor vehicles of headings 8701 to 8705.

Additional U.S. Notes

1. Road tractors, trailers and semi-trailers remain separately classified in headings 8701 and 8716, respectively, even when entered together.

2. For the purposes of classifying bicycles under the provisions therefore in heading 8712, the diameter of each wheel is the diameter measured to the outer circumference of the tire which is mounted thereon or, if none is mounted thereon, of the usual tire for such wheel.

Statistical Note

1. For the purposes of statistical reporting numbers in headings 8701 and 8703, report as “new” only those motor vehicles that have been produced or assembled but have not been sold to any person or entity other than a manufacturer, distributor or dealer. Report as “used” only those motor vehicles the equitable or legal title to which has been transferred via a first sale by a manufacturer, distributor or dealer to an ultimate purchaser.

Heading/ Subheading	Stat. Suf-fix	Article Description	Unit of Quantity	Rates of Duty 1 General	Rates of Duty 1 Special	Rates of Duty 2
8714 (con.)		Parts and accessories of vehicles of headings 8711 to 8713: (con.)				
		Other: (con.)				
8714.96		Pedals and crank-gear, and parts thereof:				
8714.96.10	00	Pedals and parts thereof	kg	8%[6/]	Free (A+, AU, BH, CL, CO, D, E, IL, JO, KR, MA, OM, P, PA, PE, S, SG) 4% (JP)	30%
8714.96.50	00	Cotterless-type crank sets and parts thereof	kg	Free[6/]		30%
8714.96.90	00	Other crank-gear and parts thereof	kg	10%[6/]	Free (A+, AU, BH, CL, CO, D, E, IL, JO, KR, MA, OM, P, PA, PE, S, SG) 5% (JP)	30%
8714.99		Other:				
8714.99.10	00	Click twist grips and click stick levers	kg	Free[5/]		30%
8714.99.50	00	Derailleurs and parts thereof	kg	Free[5/]		30%
8714.99.60	00	Trigger and twist grip controls for three speed hubs, and parts thereof; bicycle handlebar stems wholly of aluminum alloy (including their hardware of any material), valued over $2.15 each; and bicycle handlebar stem rotor assemblies	kg	Free[5/]		30%
8714.99.80	00	Other	kg	10%[5/]	Free (A+, AU, BH, CL, CO, D, E, IL, JO, KR, MA, OM, P, PA, PE, S, SG) 5% (JP)	30%[2/]
8715.00.00		Baby carriages (including strollers) and parts thereof		4.4%	Free (A, AU, BH, CL, CO, D, E, IL, JO, KR, MA, OM, P, PA, PE, S, SG)	45%
	20	Baby carriages (including strollers)	No.			
	40	Parts	kg			

Heading/ Subheading	Stat. Suf-fix	Article Description	Unit of Quantity	Rates of Duty 1 General	Rates of Duty 1 Special	Rates of Duty 2
8716		Trailers and semi-trailers; other vehicles, not mechanically propelled; and parts thereof:				
8716.10.00		Trailers and semi-trailers for housing or camping	.....	Free[6/]		45%
	30	Less than 10.6 m in length	No.			
	75	10.6 m or more in length	No.			
8716.20.00	00	Self-loading or self-unloading trailers and semi-trailers for agricultural purposes	No.	Free[6/]		45%
		Other trailers and semi-trailers for the transport of goods:				
8716.31.00	00	Tanker trailers and tanker semi-trailers	No.	Free[6/]		45%
8716.39.00		Other	.....	Free[6/]		45%
	10	Agricultural	No.			
	20	For use with the vehicles of heading 8709	No.			
		Other:				
	30	For use with the vehicles of heading 8703	No.			
		Other:				
	40	Van type	No.			
	50	Platform type	No.			
	90	Other	No.			
8716.40.00	00	Other trailers and semi-trailers[8/]	No.	Free[6/]		45%
8716.80		Other vehicles:				
8716.80.10	00	Farm wagons and carts	No.	Free[6/]		Free[2/]
8716.80.50		Other	.....	3.2%[6/]	Free (A*, AU, BH, CL, CO, D, E, IL, JO, KR, MA, OM, P, PA, PE, S, SG)	45%
	10	Industrial hand trucks	No.			
		Other:				
	20	Portable luggage carts	No.			
	90	Other	No.			

Heading/ Subheading	Stat. Suf-fix	Article Description	Unit of Quantity	Rates of Duty 1 General	Rates of Duty 1 Special	Rates of Duty 2
8716 (con.)		Trailers and semi-trailers; other vehicles, not mechanically propelled; and parts thereof: (con.)				
8716.90		Parts:				
8716.90.10		Parts of farm wagons and carts:	.....	Free[6/]		Free
	10	Road wheels	kg			
	20	Wheel and tire assemblies	kg			
	90	Other	kg			
8716.90.30	00	Castors, other than those of heading 8302	kg	5.7%[6/]	Free (A*, AU, BH, CL, CO, D, E, IL, JO, KR, MA, OM, P, PA, PE, S, SG)	45%
8716.90.50		Other	.....	3.1%[6/]	Free (A*, AU, BH, CL, CO, D, E, IL, JO, KR, MA, OM, P, PA, PE, S, SG)	45%
	10	Axles and parts thereof	kg			
		Wheels:				
	35	Steel wheels measuring 30 to 42 cm in diameter, whether or not assembled	kg			
		Other:				
		Wheels:				
		Having a diameter of at least 57 cm but not more than 63 cm:				
	46	Of aluminum	kg			
	47	Of steel	kg			
	48	Other wheels	kg			
		Wheels with tires:				
	56	Wheels with tires for off-the-highway use	kg			
	59	Wheels with other tires	kg			
	60	Other	kg			

1/ See 9903.88.01.
2/ See 9903.90.08.
3/ See 9903.88.02.
4/ See 9903.91.03.
5/ See 9903.88.15.
6/ See 9903.88.03.
7/ See 9903.88.03, U.S. note 16 to subchapter III, chapter 99 and U.S. note 19 to subchapter III, chapter 99.
8/ See 9903.88.69.

EXHIBIT I-13

List of Known Foreign Producers

Mexico

BRD Trailers, S.A. de C.V.
CAMINO REAL, ZONA INDUSTRIAL
43830 Zempoala, Hidalgo, Mexico
Telephone: (52) 771 211 2115

Bull Chassis
Parque Industrial Norte Bodegas 8 y. 9.
Carr. Mexico-Laredo, Moises Sanenz
66614 Apodaca, Nueva Loredo, Mexico

Carrocerias Gallegos S.A. de C.V.
Blvd. Ejercito Mexicano Km. 3.9,
Panfilo Natera, 35049 Gomez Palacio, Durango. Mexico
Telephone: (52) 871 723 0001

Commercializadora Nimmka, S.A. de C.V. (d/b/a Atro Remolques y Carroceria)
Lincoln No. 1002 - A Valle de Lincoln García,
NUEVO LEON 66026 Mexico
Telephone: (52) 81 1354 8000

Corpus Trailers
Veracruz Highway km 161
Cuapiaxtla, Tlaxcala Mexico 90560
Telephone: (52) 276 478 2545

DeLucio
Camino Real #12 Zempoala
Estado de Hidalgo, Mexico 43830
Telephone: (52) 771 211 2100

Fruehauf de Mexico, S.A. de C.V.
Av. Jose Lopez Portillo
#131 Col. La Magdalena Neighborhood,
Coacalco, Estadio de Mexico 55700
Telephone: (52) 55 5898 7800

GG Trailers, S.A. de C.V.
Reforma 301, Guadalupe Borja,
Frontera, Coahuila, México 25680
Telephone: (52) 866 197 1350

Hyundai de Mexico S.A. de C.V. (d/b/a Hyundai Translead)
La Encantada 7474 Parque Industrial, El Florido
Tijuana, Baja California, 22244 Mexico
Telephone: (1) 619-574-1500

Lodi Trailers
Federal Highway 45, Zacatecas-Fresnillo Km 6.7
La Pimienta Colony, Zacatecas, Zacatecas
Telephone: (52) 492 768 1912

Norstar Trailers Mexico S de R.L. de C.V. (d/b/a Iron Bull Trailers)
Carr. a Cuauhtémoc - Alvaro Obregón
Km. 10 No. 1015
Centro Cuauhtémoc, Chihuahua, Mexico 31607
Telephone: (52) 625 133-1330

Paisano Trailer
Carr. Libre Chihuahua a Namiquipa #85800
Namiquipa, Chih. C.P. 31978
Telephone: (52) 915 222 2054

Ventura Trailers
Juan Álvarez 457, Col. Ignacio Zaragoza,
Guadalupe, N.L. Mexico
Telephone: (52) 81 8088 5984

Thailand

Dee Siam Manufacturing Co. Ltd. (formerly CIMC Vehicle (Thailand) Co., Ltd.)
No. 7/258 Amata City Rayong Industrial Estate
Mapyangphon Subdistrict, Pluak Daeng District,
Rayong Province 21140 Thailand
Telephone: (+08) 6303-0526

Panus Assembly Co., Ltd.
27/1 Moo.3 Tambol. Kudnong Panusnikhom
Chonburi 20140 Thailand
Telephone: (+038) 462-100-2

Vietnam

ASEAN Mechanical Technology Corporation
6th Fl., 5 Dong Da, ward.2, Tan Binh Dist.,
Ho Chi Min City, Viet Nam
(+84) 88 606 1515

Kotinochi JSC
No. B5.24, Floor 5, Block B, Nhat Hoa Apartment Complex,
33 Nguyen Huu Tho Street
Tan Hung Ward, District 7
Ho Chi Min City, Viet Nam
Telephone: (+84) 702 839 704

Thaco Special Vehicles Manufacturing Co., Ltd.
THACO Chu Lai Industrial Park, Tam Hiep Commune
Nui Thanh District, Quang Nam Province
Vietnam
Telephone: (+84) 933 805 707

Tan Thanh Trading Mechanic Corporation
Quarter 4 Truong Son Street
Linh Trung Ward, Thu Duc District
Ho Chi Min City, Viet Nam
Telephone: (+84 28) 37 222 545

EXHIBIT I-14

Non-Subject Producers

Bogo Co. Ltd. (South Korea)
305, NakDongDaeRo-388, SaHa-Gu
(306, Rich-W B.D, DangRi-Dong)
Busan, Korea
Telephone: (+81) 51-294-7771

CIMC Vehicles (Group) Co, Ltd. (China)
2 Huaihe E. Road
Huangdao, Qingdao, Shandong, PRC 266500

Innovative Trailer Design Industries (Canada)
161 The West Mall Unit #2
Etobicoke, ON M9C 4V8, Canada
Telephone: (416) 620-7755

Jansteel Metal Industries (Israel)
22 Al-Opha Street, South A.T.
Ashkelon, Israel
Telephone: (+972) 8-678-1134

Max-Atlas Equipment Inc. (Canada)
371 Chemin du Grand Bernier N
Saint-Jean-sur-Richelieu, QC J3B 4S2, Canada
Telephone: (450) 346-8848

Raja Trailer & Equipment Sales Ltd. (Canada)
9108 River Road
Delta, B.C., V4G 1B5, Canada
Telephone: (604) 940-8383

Randon (Brazil)
Av. Abramo Randon
770 – Interlagos, Caxias do Sul – RS
Brazil 95055-010
(+54) 3239-2000

EXHIBIT I-15

ENTIRE EXHIBIT NOT CAPABLE OF PUBLIC SUMMARY

EXHIBIT I-16

ENTIRE EXHIBIT NOT CAPABLE OF PUBLIC SUMMARY

EXHIBIT I-17

CIMC Vehicles (Group) (1839 HK)

World's largest semi-trailer manufacturer

Summary: We initiate coverage on CIMC Vehicles with BUY rating and a TP of HK$6.9, based on 5x EV/EBITDA ratio. The current valuation of 3.5x 2019E EV/EBITDA should have reflected the low earnings growth expectation. With global presence and solid balance sheet after IPO, we see room for CIMC Vehicles to expand market share through capacity expansion and acquisitions.

- **Company background.** CIMC Vehicles primarily engages in the manufacture and sale of semi-trailers and truck bodies for specialty vehicles in China, North America, Europe and other regions covering >40 other countries. The Company has been the world's largest semi-trailer manufacturer for the 5th consecutive year in terms of total sales volume since 2013. According to Frost & Sullivan, by sales volume of semi-trailers, CIMC Vehicles ranked first in the semi-trailer industry in China, with a market share of 15.7% in 2017. In North America, the Company ranked among the top five semi-trailer manufacturers in 2017. CIMC Vehicles has been listed on the HKEx since Jul 2019.
- **Global presence after series of acquisitions.** Since 2002, CIMC Vehicles has strategically expanded its geographic coverage in China, North America and Europe through series of acquisitions. These acquisitions have helped CIMC Vehicles strengthen its global presence as well as maintaining a multi-brand strategy.
- **Growth strategy.** CIMC Vehicles plans to expand and upgrade its manufacturing and assembly capabilities in the developed regions. In the US, the Company plans to increase production capability for refrigerated trailers and chassis trailers. In Europe, CIMC Vehicles plans to increase assembly capability for curtain-side trailers, swap bodies and refrigerated trailers. In China, following the upgrade of two new manufacturing plants, the Company plans to upgrade two other plants for chassis, flatbed trailers and tank trailers in order to achieve production automation. We forecast all these will help raise capacity by 10%/6%/9% in 2019E/20E/21E.
- **Earnings projection.** We forecast CIMC Vehicles to deliver earnings growth of 23%/8%/3% to RMB1,411mn/1,519mn/1,566mn in 2019E/20E/21E. In terms of core profit, we calculated that the Company's core earnings in 2018 to be RMB1.06bn after deducting the one-off and non-operational items. In 2019E/20E/21E, we estimate the core profit to be RMB1,265mn/ 1,369mn/1,416mn after excluding RMB150mn of estimated gains from the potential disposal of land. The core earnings growth in 2019E/20E/21E will be 19%/9%/3%, based on our estimates.
- **Major risk factors:** (1) Slowdown of economic growth; (2) trade disputes; (3) capacity ramp-up risk.

Earnings Table

(YE 31 Dec)	FY17A	FY18A	FY19E	FY20E	FY21E
Revenue (RMB mn)	19,367	24,168	25,577	27,283	27,891
YoY growth (%)	33.1	24.8	5.8	6.7	2.2
Net income (RMB mn)	964	1,143	1,411	1,519	1,566
EPS (RMB)	0.64	0.76	0.85	0.84	0.87
YoY growth (%)	32.1	18.5	12.1	-1.5	3.1
EV/EBITDA (x)	5.0	4.1	3.5	3.3	3.3
P/E (x)	6.5	5.5	5.1	5.2	5.0
P/B (x)	1.0	0.8	0.8	0.7	0.7
Yield (%)	17.8	4.6	5.9	5.8	6.0
ROE (%)	14.4	16.2	16.4	14.8	13.8
Net gearing (%)	Net cash	Net cash	Net cash	Net cash	Net cash

Source: Company data, CMBIS estimates

BUY (Initiation)

Target Price	**HK$6.90**
(Previous TP	-)
Current Price	**HK$4.87**
Up/Downside	**+42%**

China Capital Goods

Wayne Fung, CFA
(852) 3900 0826
waynefung@cmbi.com.hk

Stock Data

Mkt Cap (HK$ mn)	8,596
Avg 3 mths t/o (HK$ mn)	n/a
52w High/Low (HK$)	6.34/4.00
Total Issued Shares (mn)	1,805

Source: Bloomberg

Shareholding Structure

CIMC Group	52.64%
Ping An Group	22.94%
Others	24.43%

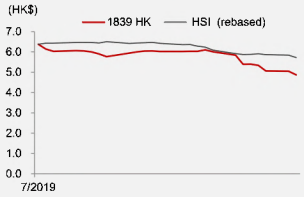
Source: HKEx

Share Performance

	Absolute	Relative
1-mth	-16.3%	-7.7%
3-mth	n/a	n/a
6-mth	n/a	n/a

Source: Bloomberg

12-mth Price Performance



Source: Bloomberg

Auditor: PricewaterhouseCoopers

Web-site: www.cimcvehiclesgroup.com

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Executive summary

CIMC Vehicles primarily engages in the manufacture and sale of (1) semi-trailers and (2) truck bodies for specialty vehicles. The Company sells an extensive range of semi-trailers and truck bodies in China, North America, Europe and other regions, covering over 40 other countries. CIMC Vehicles has been the world's largest semi-trailer manufacturer for the 5th consecutive year in terms of total sales volume since 2013. According to Frost & Sullivan, by sales volume of semi-trailers, CIMC Vehicles ranked first in the semi-trailer industry in China, with a market share of 15.7% in 2017. In North America, the Company ranked among the top five semi-trailer manufacturers in 2017.

CIMC Vehicles has a proven track record of acquisitions across the globe. Since 2002, CIMC Vehicles has strategically expanded product portfolio and established geographic coverage in China, North America and Europe through series of acquisitions. These acquisitions have successfully helped CIMC Vehicles strengthen its global presence as well as maintaining a multi-brand strategy supported by a comprehensive portfolio of semi-trailer and truck body products. CIMC Vehicles has established itself as a leading global semi-trailer manufacturer with well-recognized brands in the principal markets.

CIMC Vehicles adopts a strategy of "global operation, local knowledge". This enables the Company to expand its business in global markets and to create synergies among subsidiaries in different countries. In terms of global operation, the success is attributable to its strong capabilities in terms of cross-over design, inter-continental production and global supply chain. In terms of local knowledge, CIMC Vehicles leverages the knowledge and experience of localized management teams to better understand local customer preferences and regulatory requirements.

CIMC Vehicles plans to expand and upgrade its manufacturing and assembly capabilities, in particular in the developed regions. In the US, the Company plans to increase production capability for refrigerated trailers and chassis trailers. In Europe, CIMC Vehicles plans to increase assembly capability for curtain-side trailers, swap bodies and refrigerated trailers. Last but not the least, in China, following the upgrades of two new manufacturing plants in order to achieve production automation, the Company plans to upgrade two other plants for chassis, flatbed trailers and tank trailers for higher production precision and efficiency. We believe all these will help CIMC Vehicles enhance its production cost advantage and achieve market share gain.

We forecast CIMC Vehicles to deliver earnings growth of 23%/8%/3% to RMB1,411mn/1,519mn/1,566mn in 2019E/20E/21E. In terms of core profit, we calculated that the Company's core earnings in 2018 to be RMB1.06bn after deducting the one-off and non-operational items. In 2019E/20E/21E, we estimate the core profit to be RMB1,265mn/1,369mn/1,416mn after excluding RMB150mn of estimated gains from the potential disposal of land. The core earnings growth in 2019E/20E/21E will be 19%/9%/3%, based on our estimates.

We initiate coverage on CIMC Vehicles with BUY rating and a TP of HK$6.9, based on 5x EV/EBITDA ratio, representing a 10% discount to our target valuation (5.5x) for **Weichai (2338 HK, BUY, TP: HK$16.2)** and **Sinotruk (3808 HK, BUY, TP: HK$21.5)**. We benchmark the Company to the manufacturers of commercial vehicles and component. We apply a valuation discount due to the lower entry barrier and margin of trailer compared with that of the engine manufacturers.

Company background

The Company was first established as a Sino-foreign joint venture with limited liability in Shenzhen, China under the name of Shenzhen Tianda Heavy Industries Ltd. (深圳天达重型机械有限公司) and since then, **CIMC Group (2039 HK, 000039 CH, NR)** has been the controlling shareholder. In Oct, 2018, the Company was converted into a joint stock company with limited liability and was renamed as CIMC Vehicles (Group) Co., Ltd. (中集车辆(集团)股份有限公司). Immediately after that, the Company had a registered capital of RMB1.5bn, consisting of 1.5bn shares and CIMC owned ~63.33% of the shares.

Figure 1: CIMC Vehicles key business development milestones

Year	Event
1996	- Established under the name of Shenzhen Tianda with CIMC as the controlling shareholder
2002	- Began to develop the business of manufacture and sale of semi-trailers and truck bodies for specialty vehicles
2003	- Exported chassis trailers into the North American market and launched the global business operations
2004	- Acquired CIMC Tonghua and Huajun Vehicle and further expanded the business in China market
2014	- Launched the "Light Tower" plants and adopted automated manufacturing facilities
2015	- Shanghai Taifu, Nanshan Dacheng and Sumitomo Corporation became shareholders - Acquired a number of overseas companies, including US-based Vanguard National Trailer and Belgium-based LAG Trailers - Established a number of subsidiaries across the world, including South Africa, Vietnam and Malaysia
2016	- Further strengthened the presence in the Europe through the acquisition of Retlan Manufacturing Ltd., a company incorporated under the laws of the UK and the then holding company of SDC Trailers

Source: Company data, CMBIS

Business overview

CIMC Vehicles primarily engages in the manufacture and sale of (1) semi-trailers and (2) truck bodies for specialty vehicles. The Company has been the world's largest semi-trailer manufacturer for the 5th consecutive year in terms of total sales volume since 2013. There are mainly five product lines with regard to semi-trailers, including chassis and flatbed trailers, fence trailers, tank trailers, refrigerated trailers and van trailers. Truck body products include dump beds for dump tricks, mixers for mixer trucks and other truck bodies for specialty vehicles

CIMC Vehicles sells an extensive range of semi-trailers and truck bodies in China, North America, Europe and other regions, covering over 40 other countries. According to Frost & Sullivan, by sales volume of semi-trailers, CIMC Vehicles ranked first in the semi-trailer industry in China, with a market share of 15.7% in 2017. In North America, the Company ranked among the top five semi-trailer manufacturers in 2017.

The Company markets the products in China under the "CIMC (中集)", "CIMC Tonghua (中集通华)", "CIMC Huajun (中集华骏)", "Ruijiang Vehicles (瑞江汽车)", "Dongyue Vehicles (东岳汽车)" and "Lingyu Vehicles (凌宇汽车)" brands. Outside China, the Company sells the products under "CIMC", "Vanguard", "SDC" and "LAG" brands, which are among the well-recognized names in the global semi-trailer industry.

Figure 2: Major brands of CIMC Vehicles

Brand	Geographic Focus	Products	Brand Positioning
CIMC (中集)	China, North America, Europe, Australia, Malaysia, South Africa, Saudi Arabia and Thailand	Chassis and flatbed trailers, fence trailers, tank trailers, refrigerated trailers, van trailers, center-axle car carriers & mixers for mixer trucks	Mid-level to high-end market
CIMC Huajun (中集华骏)	China	Chassis and flatbed trailers, fence trailers, center-axle car	Mid-level to high-end market
CIMC Tonghua (中集通华)	China	Chassis and flatbed trailers, fence trailers, tank trailers,	Mid-level to high-end market
Ruijiang Vehicles (瑞江汽车)	China	Tank trailers	Mid-level market
Lingyu Vehicles (凌宇汽车)	China	Center-axle car carriers, mixers for mixer trucks	Mid-level market
Dongyue Vehicles (东岳车辆)	China	Chassis and flatbed trailers, fence trailers	Affordable market
Vanguard	North America	Dry van trailers & refrigerated trailer markets	Mid-level to high-end market
SDC	Europe	Curtain-side trailers and chassis & flatbed trailers	Mid-level to high-end market
LAG	Europe	Tank trailers	Mid-level to high-end market

Source: Company data, CMBIS

Key products of CIMC Vehicles

Semi-trailers

A typical semi-trailer CIMC Vehicles produces is mainly used to transport goods and materials, which is an unpowered trailer without a front axle and towed by a powered vehicle, known as a tractor unit. CIMC Vehicles does not manufacture tractor unit. A tractor unit is usually installed with a "fifth-wheel coupling" used to couple with a semi-trailer. CIMC Vehicles' semi-trailer products include:

- **Chassis and flatbed trailers**: (i) chassis trailers, (ii) flatbed trailers and (iii) terminal trailers;
- **Fence trailers**: (i) side-wall trailers and (ii) stake trailers;
- **Tank trailers**: (i) liquid tank trailers and (ii) dry bulk tank trailers;
- **Refrigerated trailers**;
- **Van trailers**: (i) dry van trailers and (ii) curtain-side trailers.

Centre-axle carriers

CIMC Vehicles began to manufacture and sell center-axle car carriers in 2017. A center-axle car carrier typically consists of two parts: (i) a front truck, which is configured with a truck body, equipped with a head rack over the driving compartment and installed on a truck chassis, and (ii) a center-axle trailer attached to the front truck.

Truck bodies for specialty vehicles

CIMC Vehicles produces and sells truck bodies for specialty vehicles in China. The major truck body products are dump beds for dump trucks and mixers for mixer trucks. CIMC Vehicles does not manufacture truck chassis, which provide motive power for a specialty vehicle and can be driven as a standalone vehicle. However, in line with the industry practice in China, the Company typically sells its dump beds and a small proportion of the mixers as a standalone product, and installs them onto the truck chassis provided by the customers, who are mostly truck manufactures or their dealers, at CIMC Vehicles' manufacturing plants. For a large proportion of the mixers, CIMC Vehicles purchases the truck chassis requested by the customer and installs the mixer it manufactures onto such truck chassis to form a completed mixer truck, which is sold in a completed set to the customers.

Components and parts

CIMC Vehicles also sells (1) certain parts and components purchased from third-party manufacturers, such as axles, tires, lights and braking systems, as well as (2) some parts and components manufactured in house, mainly shafts.

Figure 3: Major semi-trailer products (China)

Type	Picture	Product Description	Function
Chassis and Flatbed Trailers			
Chassis Trailer		A typical chassis trailer consists of two major parts, a skeleton frame with twist locking device to secure the containers, and a running gear system. The running gear system typically consists of three axles and a mechanical suspension system. The Company's chassis trailers are made of high-tensile steel for lightweight purpose without compromising on performance or durability.	Carry and transport containers with cargo
Flatbed Trailer		A typical flatbed trailer consists of a load floor and a bulkhead in the front to protect the tractor unit in the event of a load shift. The Company's flatbed trailers are made of high-tensile steel for lightweight purposes without compromising on performance or durability. The modularized design of the flatbed trailer shares a structural frame with the fence trailers, which adds extra flexibility and economic efficiency to the company's production.	Haul bulk cargo, large-sized structures or irregular shaped cargo
Terminal Trailer		The Company's terminal trailers have a similar structure with the chassis trailers without the twist locking device and are designed to enhance the efficiency of container placement.	Move containers within container terminals (not for operation on public roads)
Fence Trailers			
Side-wall Trailer		The Company's fence trailers, including side-wall trailers and stake trailers, are made of high-tensile steel for lightweight purpose without compromising on performance or durability. A stake trailer, with higher side guards, is a variant of the side-wall trailer.	Transport bulk cargo, steel, timber, coal and construction materials
Stake Trailer			
Tank Trailers			
Liquid Tank Trailer		The Company's tank trailers mainly consist of a tank body and a running gear system. The Company uses high-tensile metals to build the barrels of the tank body and uses specialized jigs and machines for welding the barrels and fitting the valves for high precision, durability and safety. The running gear system of the tank trailers normally incorporates three high-performance axles and an air suspension system.	Transport liquids, such as fuel, milk, chemicals and asphalt
Dry Bulk Tank Trailer			Transport powder materials, such as cement and grains

Source: Company data, CMBIS

Figure 4: Major semi-trailer products (China)

Type	Picture	Product Description	Function
Van Trailers			
Dry Van Trailer		A van trailer normally has two major parts: a van body and a running gearing system. A dry van trailer consists of metal posts, as well as panels riveted to the posts to enclose the loading space. The Company's van trailers are made of high-tensile metals for lightweight purpose without compromising on performance or durability.	Transport e-commerce parcels and bulk cargos
Curtain-side Trailer		A curtain-side trailer consists of a frame body with movable side curtains for greater loading and unloading efficiency. The side curtains are made of high-strength tarpaulin with a waterproof coating. The Company leveraged the design expertise of SDC Trailers in producing curtainside trailers in China.	Transport bulk cargos and pallets
Center-axle Car Carriers			
Center-axle car carrier		A center-axle car carrier of the Company consists of two parts, 1) a front truck, configured with a truck body, equipped with a head rack over the driving compartment and installed on a truck chassis and 2) a center-axle trailer attached to the front truck. The company's center-axle carriers are typically configured with a double-decker design. They are made of high-tensile steel for lightweight without compromising the performance or durability. KTL and powder coating are utilized for high anti-corrosion performance to prevent the contamination of the passenger cars carried.	Transport passenger cars
Truck bodies			
Dump Bed	 *Note: the company does not manufacture the truck chassis in the picture above*	A typical dump bed is an open-box bed, which can be hinged at the rear and equipped with hydraulic cylinder to lift the front to unload the materials in the bed. The Company's dump bed is made of high-tensile steel and is usually equipped with a video monitoring system to monitor the unloading process.	Transport construction materials and wastes
Mixer	 *Note: the company does not manufacture the truck chassis in the picture above*	A typical mixer is a revolving drum with blades installed inside. The body and the blades of the mixers are made of high-tensile and wear-resistant steel. The mixers have a high discharge rate, reduced weight and an extended service period.	Mix concrete cement for construction

Source: Company data, CMBIS