1. GUIDELINES FOR CALCULATING GVWR

NHTSA vs. I.R.S Methods: Manufacturers need to be aware that the method of calculating GVWR for Federal Excise Tax Purposes, as specified by the I.R.S. and as discussed in Section C-1 of these *Guidelines*, may differ from the method the manufacturer may choose to use to set the actual GVWR of the trailer. While the method used by the I.R.S. may be acceptable in setting a trailer's GVWR, a manufacturer may desire to set the GVWR at some value which may be lower or be different from the values obtained using the I.R.S. method. This may result in values which may be different. The NHTSA calculation, as specified by 49 CFR 571.3, is intended to represent what the manufacturer believes the load-carrying capacity of its trailer normally is and is generally based on structural considerations. This could result in a more conservative number. Because the Federal Excise Tax does not apply to vehicles with a GVWR of under 26,000 pounds, the I.R.S. may not be willing to accept the manufacturer's more conservative number because it may, in the I.R.S.'s view, unfairly understate the GVWR of the trailer and be perceived as a method of avoiding excise tax obligations on that vehicle. To counter such a claim by the I.R.S., a manufacturer must have a rationale in determining GVWR rating on a trailer that follows established and sound engineering principles and maintain adequate records of the calculations that support that rationale.

Gross Vehicle Weight Rating (GVWR) is defined in 49 CFR 571.3 as to: "means the value specified by the manufacturer as the loaded weight of a single vehicle."

Gross Axle Weight Rating (GAWR) is defined in 49 CFR 571.3 as to: "means the value specified by the manufacturer as the load-carrying capacity of a single axle system as measured at the tire-ground interfaces."

The manufacturer is responsible for establishing the GVWR and GAWR of the trailers it manufactures (Reference 49 CFR 571.3). There is no specific or "standard" method specified by NHTSA or any other agency for establishing those values. It is up to the manufacturer to make that determination and set appropriate GVWR and GAWR ratings.

Many NATM members choose the simple method of setting their GVWR at the sum of the maximum tire/wheel/GAWR rating, while others choose to set the GVWR based on some increased percentage over the tire/wheel/axle rating. As an example, several manufacturers use 10 to 15% extra for bumper pull trailers and 20 to 25% extra for gooseneck trailers. Other manufacturers set the GVWR based on structural considerations or limitations, which may be based upon test data or calculations. The Truck Trailer Manufacturer Association (TTMA) in its Recommended Practice No. 39-92 provides a recommended method of determining GVWR which members may find useful:

TTMA RP No. 39-92 (Last revision April 1, 1998)

4.0 Rating:

4.1 Gross Axle Weight Rating is the rated load-carrying capacity of an individual axle and wheel assembly. (It represents the load that may be steadily sustained by the components in the system; i.e., tires, rims, hubs, bearing, axles, brakes, suspension, sub frame, etc. with the GAWR limited by the components with the lowest working rating. Consideration of environmental and operational factors may require the manufacturer to reduce the nominal ratings).

4.1.1 For tire load ratings, use those established by the Tire and Rim Association or those published by the respective tire manufacturers.

4.1.2 For rims and wheels, do not exceed the marked maximum load rating and corresponding tire inflation pressure. If this information is not so marked, consult the rim and wheel manufacturers.

4.1.3 The size designation of tires and rims do not necessarily represent those on the vehicle. In no case may the tires and rims on the vehicle result in a lower GAWR than shown on the trailer.

4.2 Gross Vehicle Weight Rating is the maximum combined weight of a trailer and its payload based on its structural capabilities.

4.2.2 The recommended method of determining GVWR for all types of trailers is the lower of:

GVWR < Tare Weight + Rated Payload

or

GVWR < GAWR(s) + Upper Coupler or Front Tow bar Coupler Vertical or Horizontal Load Rating (whichever is lower) where "<" means less than or equal to.

4.3 GAWR and GVWR each independently imposes its own restriction on trailer loading. Therefore, from a structural standpoint, the maximum permissible load is determined by either the GAWR of each axle or by the GVWR, whichever is the most restrictive.

While the method used to determine the GVWR for Federal Excise Tax (F.E.T.) purposes, as described in section C-1 of this publication, could be used to set GVWR, that method does not take into account any structural limitations that a manufacturer may have that would restrict the GVWR to a value lower than what the I.R.S. would use to calculate F.E.T. and may not be appropriate for all situations.

When deciding what method a manufacturer will use for determining the GVWR and GAWR ratings for its trailers, it should research all of the information it can find on the subject and have some rational basis for its decision. *Generally a manufacturer would set the GVWR based on the structural capacity of its trailers and not to avoid some other standard such as licensing, etc.* It is also useful to review the various legal interpretations from NHTSA's legal counsel to see if any of the interpretations may be applicable to your situation. Excerpts from some of those NHTSA interpretations as they relate to GAWR and GVWR are shown below. It is suggested that these be read in detail as they contain extremely valuable information which will assist you in gaining considerable insight into many considerations that could affect the way you operate and conduct your business.

2. Excerpts From Regulations and NHTSA Interpretations Pertaining to GAWR and GVWR

The following excerpts from NHTSA Chief Counsel's interpretation letters are provided for the reader's convenience only. NHTSA and NATM strongly advise that before deciding to rely on an excerpt, the reader review the entire letter from which the excerpt was taken.

Further, in attempting to use these interpretations to resolve a question, please be aware that they represent the views of the Chief Counsel based on the facts of individual cases. If you are aware of a previous interpretation that appears to address your question, please cite that interpretation and present your question to the Chief Counsel. Do not act on the assumption that the interpretation is necessarily applicable to your situation. There may be critical factual differences between your situation and those addressed in previous interpretations. Further, the agency's standard and regulations change from year to year, and past interpretations may no longer be applicable.

Interpretation letters are available from: NHTSA Technical Reference, Room 5108, 400 Seventh Street S.W., Washington, D.C. 20590. Phone number (202) 366-4941. Please be sure to reference 49 CFR part or NHTSA regulation being interpreted.

NHTSA's interpretation letters are available for viewing on the Internet at: *http://www.nhsta.dot.gov*. On the homepage, click on "Table of Contents," then on "Regulations and Standards" under "NHTSA's Interpretation Files Search." Letters may be searched by "key words" such as date, name of addressee, or subject matter.

Definitions: (49 CFR 571.3)

"Gross Axle Weight Rating (GAWR) means the value specified by the vehicle manufacturers as the load-carrying capacity of a single axle system, as measured at the tire-ground interfaces."

"Gross Vehicle Weight Rating (GVWR) means the value specified by the manufacturer as the loaded weight of a single vehicle."

"Semitrailer means a trailer, except a pole trailer, so constructed that a substantial part of its weight rests upon or is carried by another motor vehicle." *(Note: By definition nearly all trailers built by NATM members, bumper pull and gooseneck designs, will be considered to be a 'semitrailer' as a portion of the trailer weight is carried by the tow vehicle.)*

"Trailer means a motor vehicle with or without motive power, designed for carrying persons or property and for being drawn by another motor vehicle."

"Truck Tractor means a truck designed primarily for drawing other motor vehicles and not so constructed as to carry a load other than a part of the weight of the vehicle and the load so drawn." *(Note: Trucks, such as 'pickups', 'one ton dually' etc., even though they may be capable of transporting cargo other than just a trailer, are considered to be a truck tractor when towing a trailer where a portion of the trailer load is supported and transported by the truck.)*

GAWR Determination Includes Tires, Wheels, Brakes and Suspension

(Letter of May 6, 1974 to Heavy & Specialized Carriers Conference of the American Trucking Associations):

"The sum of the GAWR's must at least equal the specified GVWR to avoid overloading the axle systems, and the GAWR sum may, of course, exceed the GVWR. Typically the manufacturer balances the commercial advantage of specifying a higher GVWR against the expense of higher GAWR's".

"The GAWR is measured at the tire-ground interfaces which means that the tires, wheels, brakes and suspension components are included in the determination. Typically an axle assembly is rated by its manufacturer, who takes into account the braking ability of the axle to stop the load. Although this factor should always have been taken into consideration, the advent of FMVSS 121 may cause axle and brake manufacturers to reassess the values they have assigned to brake systems in the past."

"Vehicle Weight Rating, and (b) at its unloaded vehicle weight plus 500 pounds (including driver and instrumentation)."

Manufacturer Specifies GAWR and GVWR

(Letter of May 6, 1974 to Heavy & Specialized Carriers Conference of American Trucking Associations):

"….it is the manufacturer who specifies the values (GAWR and GVWR), and he is free to specify whatever values he himself decides are correct. Both NHTSA in its compliance tests, and the Bureau of Motor Carrier Safety on the road, will judge the vehicle on the basis of the values assigned. Therefore it is in the interest of the manufacturer to assign values which accurately reflect the load-bearing ability of the vehicle and its suspension."

(Letter of April 25, 1975 to Hendrickson Manufacturing Company):

"The Gross Axle Weight Rating (GAWR) and the Gross Vehicle Weight Rating (GVWR) are defined by the National Highway Traffic Safety Administration (NHTSA) as determinations made by the manufacturer. (49 CFR 571.3). As a general matter NHTSA finds that the manufacturer is most familiar with the complexities of this product and is most qualified to assign these values."

GVWR May Be Rated at Less Than Full Loaded Weight to Provide a Safety Factor But Not to Avoid a Safety Standard

(Letter of July 17, 1974 to Distributors Association):

"A manufacturer is generally free to rate his vehicle at less than full loaded weight, and we would support such a policy where the purpose is to provide a reasonable safety margin. However, we would not consider as made in good faith a gross vehicle or axle weight rating that is so unrelated to vehicle capacity that it suggests a motive such as avoidance of an applicable standard. If it could be shown that this was the manufacturers intent, he could be subject of civil penalties and other sanctions provided in the National Traffic and Motor Vehicle Safety Act for the issuance of a false and misleading certification, and to the responsibilities incident to a finding of a safety-related defect."

Normally the GVWR of a Semi trailer Is Greater Than the Sum of Its GAWR's

(Letter of March 24, 1972 to Truck Equipment and Body Distributors Association):

"You also ask how manufacturers are to determine the GVWR for semitrailers, and whether such a figure can be based solely on the semi trailer's axles. The GVWR of a semitrailer should not be based on the vehicle's axles. The definition of GVWR calls for the weight of a fully loaded vehicle, and normally the capacity of a semi-trailer is greater than that of its rear axles."

Portion of Trailer GVWR May Be Supported By a Tractor

(Letter of May 27, 1975 to Johnson, Hogan & Ometer):

"The gross vehicle weight rating (GVWR) of a trailer consists of the weight of the empty trailer plus its rated cargo load. The weight of the tractor is not included. The tractor and the trailer are considered as two separate vehicles, each with its own individual GVWR."

"In the case of a semi-trailer, a significant portion of the loaded trailer's GVWR may be supported by the tractor's rear axle. Therefore, the trailer's GVWR may be significantly higher than its gross axle weight rating, which is the weight (of) an entire axle system, including tires, wheels, axle, and suspensions systems, is capable of supporting."

GAWR Less Than Actual Load When at GVWR IS Safety Defect

(Letter of January 1976 to Wenke, Burge, and Taylor):

"GVWR is defined as: the value specified by the manufacturer as the loaded weight of a single vehicle." (49 CFR 571.3).

"One constraint on this specification is found in the Certification regulation, which requires that the GVWR be not less than the sum of the unloaded vehicle weight, rated cargo load, and 150 pounds times the vehicle's designated seating capacity… (49 CFR 567.4(G)(3))"

"Rated cargo load" is not defined. If a manufacturer does not provide a cargo load rating to dealers or consumers, the NHTSA expects his determination of GVWR to reflect a good faith evaluation of the vehicle's load carrying capacity. In the case of a boat trailer, this evaluation should be made with the assumption that the trailer is attached to a towing vehicle and should include that portion of the trailer's load that is carried by the towing vehicle."

"GAWR, on the other hand, is defined as: the value specified by the vehicle manufacturer as the load carrying capacity of a single axle system, as measured at the tire-ground interfaces."

"The GAWR of a boat trailer's axle system could thus be less than the GVWR, because some of the trailer's load would be carried by the towing vehicle. However, the NHTSA would consider a boat trailer with a GAWR that is less than the actual load on its axle system, when loaded to its GVWR and attached to a towing vehicle, to contain a safety-related defect, which is subject to the notification and remedy requirements of the National Traffic and Motor Vehicle Safety Act of 1996."

GVWR of a Trailer May Be Greater Than the Sum of the GAWR's

(Letter of March 9, 1976 to Wenke, Burge & Taylor):

"This is in response to your February 10, 1976, letter concerning the determination of Gross Vehicle Weight Rating (GVWR) and Gross Axle Weight Rating (GAWR) for boat trailers."

"You have presented the following two examples:

GVWR – 3300; GAWR – 2970
and
GVWR – 3000; GAWR – 2700"

"Assuming that 10 percent of the trailer's loaded weight is carried by the towing vehicle, each example reflects a permissible relationship between the GVWR and the GAWR. Your letter indicates that your client presently provides a GVWR figure of 3000 pounds, based on the load carrying capacity determined when the trailer is not connected to a towing vehicle."

"If by this you mean that the boat trailer's axle system has a load carrying capacity of 3000 pounds, then the trailer would actually be entitled to a GAWR of 3000 pounds and a GVWR of 3333 pounds. Your client is free, of course, to establish more conservative load ratings. However, the GAWR should not be less than 9/10 of the accompanying GVWR."

Load Rating and GVWR May Be Affected by Location of Sliding Undercarriage

(Telephone conversation of November 19, 1971 with TTMA as reported in DOT memorandum of November 22, 1971):

"Mr. Wilson asked how the GAWR and GVWR requirements of the new Certification regulations would apply to semitrailers with sliding rear axle bogies. He said that he saw a danger if the GVWR of a semitrailer were based on the load that could be carried with the rear axle in the

rearmost position (the maximum load condition if the rear axle is the limiting factor), there was a possibility that the user would overload the axle by loading to that capacity with the axle in a more forward position. Conversely, if the GVWR were stated at a lower figure based on the axle in the forwardmost position, the actual capacity of the trailer would be understated."

"I told Mr. Wilson that, with or without the new regulations, the situation obviously required the furnishing of specific instructions to the truck users, beyond any figures for GVWR and GAWR. The NHTSA, I said, did not restrict the furnishing of this information, either by label or in printed manual form, except that extraneous material should not be placed in the midst of the required information on the label. I also said that the GVWR could be lower than the sum of the axle ratings and the capacity at the kingpin."

Trailer Tongue Weight Should Be Related to the GAWR of the Towing Vehicle

(Letter of March 8, 1976 to Georgette A. Sears):

"There are no Federal Regulations concerning the connection of trailers to trucks or other vehicles. Nevertheless, from a safety standpoint it is important that you ascertain the hauling capacity of your truck-trailer system in order to avoid overloading that could be potential safety hazards. You should obtain information from the manufacturer concerning the 'tongue weight' of the trailer when fully loaded, and relate it to the gross axle weight ratings of your towing vehicle, found on its certification label on the door or door post. The trailer manufacturer may also have further recommendations as to the capacity of the vehicle needed to tow one of his trailers safely."

Manufacturer Must Minimize the Likelihood of His Trailer Being Pulled by a Vehicle of Insufficient Capacity

(Letter of April 2, 1976 to Hackney & Sons):

"If a trailer manufacturer knows that his product is likely to be towed by a vehicle of insufficient load-carrying capacity, the NHTSA expects him to take reasonable steps, short of refraining from production, to minimize the likelihood of such misuse. Otherwise, the trailer would be considered to contain a defect relating to motor vehicle safety."

"In the first hypothetical situation presented in your letter, there would be no violation of the Federal Motor Vehicle Safety Standards or Regulations. In Situation 2, we are not prepared to state categorically whether or not the trailer manufacturer could be obliged to assume defect responsibility. Such responsibility might be minimized assuming that the written warnings to which you refer clearly indicates (i) what load ratings are necessary as a minimum for the towing vehicle and (ii) that the trailer must not be towed by a vehicle without such load ratings. Nevertheless, the lines of responsibility between two such parties are not that clear-cut, especially where the trailer manufacturer knowingly delivers for introduction into interstate commerce a vehicle which immediately results in a serious overload situation."

"In Situation 2, the trailer would probably contain a safety-related defect, because its advertising would promote its misuse in a way that would create a safety hazard. In Situation 4, the trailer would probably also be considered to contain a safety-related defect, because the total payload capacity could be calculated, and the warnings to limit the actual load to the limits of the towing vehicle could not reasonably be expected to be observed."

Temporary Tires for Shipping Purposes Need Not Conform to GVWR & GAWR

(Letter of 3-14-72 to Nance, Caston, Hefner, and Green):

"You state that some of these trailers are shipped (to customers) equipped with used tires that are intended primarily to be used to ship the trailers to their destinations, and ask whether these tires should be taken into account in the values for GVWR and GAWR on the certification label."

"We do not consider that temporary tires attached to a vehicle for purposes of shipment should be reflected in the GVWR and GAWR on the certification label, if these tires are not intended to be part of the completed vehicle. Consequently, we would expect trailers shipped with such tires to be treated similarly for purposes of certification as vehicles for which no tires have been provided."

"In such a case, the completed vehicle manufacturer, as indicated in the preamble to the Certification regulations (April 14, 1971, 36 F.R. 2054) must still bear responsibility and certify the vehicle, even though he does not install the tires with which the vehicle will ultimately be equipped. We suggest that one manner in which this could be accomplished by the manufacturer is to list GAWR and GVWR for the optional tire sizes which he recommends in accordance with the amendment to the Certification regulations published December 10, 1971 (35 F.R. 23571). The manufacturer should make it clear to the purchaser of the vehicle that the temporary tires should be replaced when the vehicle is put into use."

GAWR Based on Tires Should Not Be Arbitrary to Avoid a Safety Hazard

(Letter of December 1, 1976 to Truck Body and Equipment Association):

"Section S5.1.2 of Standard No. 120 specifies that the GAWR be not more than the sum of the maximum load ratings of the tires fitted to the axle in question. While the agency interprets Standard No. 120 to permit the assignment of a GAWR on the basis of tires listed on the certification plate for that GAWR, the assignment of an arbitrarily high (or low) GAWR for purposes such as avoiding Federal Motor Vehicle Safety Standards (such as Standard No. 121, Air Brake Systems), would constitute a violation of §108(a)(1)(d) of the National Traffic and Motor Vehicle Safety Act…"

A Vehicle Whose Apparent Load Capacity Exceeds the GVWR Would Have a Safety Defect

(Letter of October 26, 1971 to Rex Chainbelt, Inc.):

"…(T)he GVWR must not be less than a figure that reflects the full 'rated cargo load' of the completed vehicle. Obversely, if you supply a rated cargo load, the weight of the vehicle when carrying that load must not exceed the GVWR. If you supply no rated cargo load, but only the volumetric capacity, the capacity would not on its face lead to a violation of the certification regulations, since as you note the specific weight of the material carried varies considerably."

"You should be aware, however, that completing the vehicle so that its apparent carrying capacity exceeds the stated weight ratings may create some risks of liability beyond the certification regulations themselves. If, for example, the vehicle suffers a hazardous malfunction in use that can be traced to overloading of its axle system, its manufacturer may be liable both under the defect provisions of the National Traffic and Motor Vehicle Safety Act and under common-law product liability doctrines. In such a case, the manufacturer of the incomplete vehicle might

avoid liability, leaving it all on the final-stage manufacturer, by pointing out that the design of the vehicle as completed led the user to exceed the GVWR and GAWR furnished with the incomplete vehicle."

Rated Cargo Load Is Not Required, But if Provided, Must Be Consistent With GVWR

(Letter of January 3, 1972 to Distributors Association):

"You asked for a definition of 'rated cargo load' as used in the Part 567 requirement that GVWR 'shall not be less than the sum of unloaded vehicle weight, rated cargo load, and 150 pounds times the vehicle's designated seating capacity.' We have not provided a definition for this term in the regulations. By it is meant simply any figure provided to the vehicle user as to the cargo-carrying capacity, by weight, of the vehicle. There is no requirement that such a figure be provided; but if it is, it must be consistent with the gross vehicle weight rating."

Manufacturer or Alterer Should Rate Vehicle for a Reasonable Full Load; A Warning Not to Exceed Weight Ratings May Not Limit Responsibility

(Letter of May 9, 1974 to Henke Manufacturing Corporation):

"As a vehicle alterer, you are required to recertify the vehicle, and modify its weight ratings if necessary, following the alterations you perform. The gross vehicle weight rating you establish must be based on the vehicle's rated cargo load. Normally, manufacturers are not required to determine what specific loads a vehicle they certify may carry, and are certainly not responsible for overloading by users. However, where the manufacturer (or alterer as the case may be) actually knows that a vehicle to be certified is being purchased to carry primarily a particular commodity, the rated cargo load on which he bases his ratings should not be less than what he can reasonably expect the user to consider a 'full load' of that commodity. If he knows that a normal full load of sand, for example, to be carried in that truck will weigh 5 tons, we would consider it false and misleading to rate the cargo load at 4 tons to avoid having to use heavier-duty running gear."

"In the example you describe, the answer would depend on what you (the manufacturer) know, or can reasonably be expected to know, about how the plow trucks are likely to be loaded. A warning to the buyer not to exceed the rated cargo load or the weight ratings, in that case, would not be sufficient if it were reasonable to expect that the vehicles would, in practice, exceed these ratings at normal full load despite the warning."

Providing the Capability of Overloading Would Constitute a Safety Defect

(Letter of August 25, 1975 to Peerless Division of Royal Industries):

"If a final-stage manufacturer specifies a rated cargo load for the completed vehicle, the weight of the vehicle when carrying that load must not exceed the GVWR. If you supply no rated cargo load, but only the volumetric capacity, the capacity would not on its face lead to a violation of the certification regulations, since the weight of specific commodities can vary considerably."

"You should be aware, however, that completing the vehicle so that its apparent carrying capacity exceeds the stated weight ratings may create some risks of liability beyond certification regulations themselves. If, for example, the vehicle suffers a hazardous malfunction in use that can be traced to overloading, its manufacturer may be liable both under the defect provisions of

the National Traffic Safety and Motor Vehicle Safety Act and under common-law product liability doctrines. As you suggest, the final-stage manufacturer who completes a vehicle for a specific commodity is clearly on notice that providing 'over-load capacity' could constitute a safety-related defect if that vehicle is involved in an accident due to overloading."

GVWR May Be Based on the Expected Loading

(Letter of December 3, 1976 to NAFDEM):

"(You)….ask whether the final-stage manufacturer of a tank truck may assume what commodity will constitute the cargo (e.g., bulk milk) as the basis for assigning the vehicle's gross vehicle weight rating (GVWR). Section 567.4(g)(3) specifies that the GVWR determination be based on the 'rated cargo load' which is determined by the final-stage manufacturer. It would appear reasonable for the final-stage manufacturer to use the weight of bulk milk as the basis for its calculation of rated cargo load, particularly where the tank was used for milk previously, and when the vehicle is completed by a member of a trade association specializing in food and dairy equipment manufacture."

A Written Warning Against Overloading Is Not Sufficient

(Letter of November 10, 1976):

"A vehicle whose axle weight ratings are likely to be exceeded under the manufacturer's intended or reasonably foreseeable conditions of usage would probably be considered to contain a safety-related defect. Such a vehicle would be subject to the notification and remedy provisions of the National Traffic and Motor Vehicle Safety Act of 1966, as amended (15 U.S.C. 1392 et seq.)"

"We cannot prescribe specific steps that a vehicle manufacturer must take to ensure that a GAWR would not be found so low that it would be a safety-related defect. For example, if a warning in the owner's manual against loading in a certain manner is likely to be ignored, then such a warning would not, by itself, be sufficient. The NHTSA expects the vehicle manufacturer to take reasonable steps, short of refraining from production, to minimize the likelihood of vehicle misuse through overloading."

GVWR and GAWR Should Be Reasonable for the Expected Loads

(Letter of July 1, 1977 and letter of August 18, 1977):

"It is the cargo load rating that is most relevant to the problem of overloading. The rated cargo load should represent the manufacturer's assessment of the vehicle's cargo-carrying capacity and the maximum load at which the vehicle may be safely operated. A manufacturer must consider the maximum load capacity of the vehicle when it designs its cargo-carrying portion. If this is not done, the rated cargo load, and thus the GVWR, may be meaningless since the vehicle may have a cargo-carrying chamber which, if filled, would cause the vehicle to exceed its stated weight ratings. An illustration of such a situation would be a tanker truck, which exceeds its GVWR when the tank is filled with a type of material appropriate for carrying in that cargo area. If the manufacturer could reasonably have anticipated that such cargo would be carried in the tanker, yet rated the vehicle with a GVWR which was less than the vehicle's weight when fully loaded with that cargo, a safety-related defect for which the manufacturer is responsible may be considered to exist."

"The NHTSA does not expect manufacturers to be omniscient when it comes to the use of the vehicles they produce. It does, however, expect the stated weight ratings to reflect the design of the vehicles and the uses to which they can reasonably be anticipated to be put. Where the manufacturer has a reason to know the specific commodity intended to be carried in its vehicles and those vehicles have a totally enclosed cargo area, as with a tanker, the rated cargo load is relatively easy to determine."

"In your particular case, your responsibility for any subsequent overloading of the vehicles you manufacture would be determined by the reasonableness of your GVWR's ad GAWR's, given the size and configuration of your vehicles and the types of loads which they could reasonably be expected to carry. In the case of flat beds (no enclosed cargo area) a manufacturer would obviously not be able to provide weight ratings sufficiently high to prevent over-loading in all instances. The design of flat beds necessarily permits overloading since the cargo area is unrestricted. Thus if the weight ratings specified appear to have been arrived at by a good faith determination based upon the types and loads the manufacturer anticipates will be carried, its responsibility with regard to weight rating specifications will have been satisfied and no safety-related defect will be attributed to it."

A Vehicle Exceeding Its GVWR When Loaded With Its Intended Cargo Would Constitute a Safety Defect

(Letter of July 11, 1978 to North Central Tank Repair):

"This responds to your letter asking whether you are permitted to mount temporarily a body on a vehicle when you know that the body is of a greater load carrying capacity than is appropriate for the vehicle's gross vehicle weight rating (GVWR)."

"You indicate that some other manufacturer would finish the mounting process and certify the vehicle for compliance with the Federal Motor Vehicle Safety Standards."

"(T)he agency has started its determination to hold manufacturers responsible for vehicles that they manufacture which will exceed their GVWR's when fully loaded with their intended cargo. The NHTSA considers such overloading to constitute a safety-related defect."

"The NHTSA would consider you to be partially responsible for the construction of a vehicle that when loaded with its intended cargo will exceed its GVWR. Possible agency action might include a mandatory recall and remedy and civil penalties of up to $1,000 per vehicle."

Unloaded Vehicle Weight Includes Accessories Not Ordinarily Removed

(Letter of June 15, 1977 to Hendrickson Mfg. Co.):

"….the 'weight of the vehicle' includes the weight of those accessories that are installed on a vehicle before delivery and are not ordinarily removed."

Normally Removed Accessories Are Not Included in the Unloaded Vehicle Weight Determination

(Letter of February 1, 1979 to Truck Equipment & Body Distributor Association):

"The National Highway Traffic Safety Administration has defined 'unloaded vehicle weight' in a manner that does not include the weight of accessories that are normally removed when they are

not in use. This is the test that manufacturers should use when determining whether the weight of any piece of equipment or accessory is to be included within the unloaded vehicle weight determination."

"In your letter you indicate that the stake sides for flat bed bodies are readily removable. Readily removable is not the correct test to apply to these devices in determining whether their weight must be included within the vehicle's unloaded vehicle weight. A manufacturer must determine whether the stakes are likely to be removed when not in use. If the answer to this question is yes, then the weight of stake sides would not be included in the unloaded vehicle weight. Otherwise, the weight of those accessories must be included."

Final Stage Manufacturer May Change Weight Ratings

(Letter of January 3, 1972 to Distributors Association):

"The information supplied to the final-stage manufacturer by the incomplete vehicle manufacturer under Part 568 is to assist the final-stage manufacturer in completing the vehicle in conformity with the standards and certifying in conformity with Part 567. There are no requirements, however, as to how the final-stage manufacturer uses this information. If he wishes to take it on himself to change the ratings in either direction, or to disregard the conformity information, that is his right."

Incomplete Vehicle Manufacturer Furnishes the GVWR and GAWR

(Letter of August 18, 1977):

"When a vehicle is manufactured in two or more stages 49 CFR 568.4 requires the incomplete manufacturer to furnish with the incomplete vehicle a document containing the GVWR and GAWR for the completed vehicle for which the incomplete vehicle is intended. These ratings are generally used by the final-stage manufacturer in certifying the vehicle. If he chooses to exceed the stated GVWR and GAWR ratings he must also certify that the vehicle continue to meet all applicable motor vehicle safety standards."

NHTSA's Regulation Only Address New Vehicles

(Letter of June 30, 1994 to Mersco Medical):

"…The term GVWR is defined in 49 CFR Part 571.3 as 'the value specified by the manufacturer as the loaded weight of a single vehicle.' the GVWR informs vehicle owners how heavily the vehicle may safely be loaded. It also affects the vehicle's loading and other tests conditions for the performance tests to ascertain whether the vehicle complies with applicable safety standards. NHTSA expects the GVWR to reflect a manufacturer's good-faith evaluation of the vehicle's size, weight, load carrying capacity, and intended use."

"NHTSA's regulations on GVWR only addresses the GVWR of new vehicles. This is because the agency's safety standards apply only to new motor vehicles and new motor vehicle equipment. There is a provision, §108(a)(2)(A), in the Vehicle Safety Act that prohibits manufacturers, distributors, dealers and motor vehicle repair businesses from knowingly rendering inoperative in whole or in part any device or element of design installed in accordance with a Federal Motor Vehicle Safety Standard. These parties would be subject to this provision if they were to modify your vehicle's suspension. However, the provision does not apply to individual owners modifying their own vehicles."

"Because we do not regulate how individuals modify their own vehicles (and thus do not prohibit you from modifying your vehicle's suspension), we are unable to advise you about the specific modifications that must be made to a vehicle for it to safely carry an additional 1,000 pounds. Among other things, however, you should carefully evaluate whether the vehicle's axles, brakes, tires, and frame can adequately handle the additional load. We suggest you consult with the original vehicle manufacturer about this question. You may also wish to consult a local attorney concerning possible liability in the event your vehicle is involved in an accident."

"Also, the individual states have the authority to regulate used vehicles, and changes in the GVWR of used vehicles may be addressed by state law. State law may also address the operation of a vehicle loaded above GVWR."

Load Rating of Tires Must be at Least Equal to the Weight Ratings of the Axles, but an Axle may be Assigned a GAWR Based on the Vehicle

(Letter of April 10, 1995 to National Institute of Emergency Vehicle Safety)

"Your first question referred to a situation in which the GVWR exceeded the tire load ratings. Specifically, you alluded to the case of a fire truck with four rear-mounted tires, each rated at 7,000 pounds (lb), that were installed on a 31,000 lb. axle. You stated that the final stage manufacturer received a letter from the tire manufacturer raising the tire inflation pressures from 100 to 110 or 115 pounds per square inch and limiting the driving to not more than 7 miles at a speed not to exceed 55 miles per hour. You asked whether such practices violated the FMVSSs."

**Note: This can easily be misinterpreted if read out of context, i.e., the tires must be equal to the GAWR not "the weight rating of the axles".*

"…the load ratings of the tires on motor vehicles other than passenger cars must be at least equal to the weight ratings of the axles on which the tires are installed. The standard makes no provision for changing the tire inflation pressures or driving at restricted speeds or limiting the distances the vehicle may travel to compensate for discrepancies in the load and weight ratings."

"Your second question referred to vehicles in which axles had been derated. You cited a situation in which a manufacturer increased the GAWR of fire trucks because fire trucks do not cycle as much as tractor trailer trucks. Thus, the manufacturer increased the GAWR of fire trucks from 22,000 to 24,000 lbs. A manufacturer's assigning different GAWRs to axles on different vehicles is not prohibited by our FMVSSs. In fact, manufacturers routinely assign different GAWRs and GVWRs to different vehicles based on the various equipment options and add-ons, particularly with respect to emergency vehicles. In any case, NHTSA expects that the GAWR(s) stated on the vehicle's certification label correctly reflects the manufacturer's certification that the vehicle complies with all FMVSSs applicable to that vehicle."

GVWR Should Not be Modified for Reasons Related to the GVWR Threshold of the Commercial Driver's License Program

(Letter of February 14, 1995 to California Trucking Association):

"…a vehicle's GVWR is assigned by its manufacturer as part of the certification process. To avoid statutory violations, the manufacturer must complete the certification process before the vehicle is first sold to a consumer. The GVWR is therefore fixed prior to this first sale. The only exception to this is if the manufacturer seeks to correct an error (such as an error in calculation or a typographical error) in the originally assigned GVWR."

Labels for GVWR and GAWR for Suitable Tire-Rim Choice Must Be In Metric and English Units (49 CFR 120)

Federal Motor Vehicle Safety Standard No. 120, Tire selection and rims for motor vehicles other than passenger cars. Section 5.3 is reproduced as follows:

S5.3 Label Information. Each vehicle shall show the information specified in S5.3.1 and S5.3.2 and, in the case of vehicle equipped with a non-pneumatic spare tire, the information specified in S5.3.3, in the English language, lettered in block capitals and numerals not less than 2.4 millimeters high and in the format set forth following this section. This information shall appear either—

(a) After each GAWR listed on the certification label required by §567.4 or §567.5 of this chapter; or, at the option of the manufacturer,

(b) On the tire information label affixed to the vehicle in the manner, location and form described in §567.4 (b) through (f) of this chapter, as appropriate for each GVWR-GAWR combination listed on the certification label.

S5.3.1 Tires. The size designation (not necessarily for the tires on the vehicle) and the recommended cold inflation pressure for those tires such that the sum of the load ratings of the tires on each axle (when the tires' load carrying capacity at the specified pressure is reduced by dividing by 1.10, in the case of a tire subject to FMVSS No. 109) is appropriate for the GAWR as calculated in accordance with S5.1.2.

S5.3.2. Rims. The size designation and, if applicable, the type designation of Rims (not necessarily those on the vehicle) appropriate for those tires.

TRUCK EXAMPLE – SUITABLE TIRE-RIM CHOICE

GVWR: 7,840 kilograms (17,280 pounds)

GAWR: Front – 2,850 kilograms (6,280 pounds) with 7.50-20 (D) tires,
20 x 6.00 rims at 520 kPa (75 psi) cold single

GAWR: Rear – 4,990 kilograms (11,000 pounds) with 7.50-20 (D) tires,
20 x 6.00 rims, at 450 kPa (65 psi) cold dual

GAWR: 13,280 kilograms (29,279 pounds)

GAWR: Front – 4,826 kilograms (10,640 pounds) with 10.00-20 (F) tires,
20 x 7.50 rims, at 620 kPa (90 psi) cold single

GAWR: Rear – 8,454 kilograms (18,639 pounds) with 10.00-20 (F) tires,
20 x 7.50 rims, at 550 kPa (80 psi) cold dual.

Sum of Tire Load Ratings Shall Not Be Less Than the GAWR (49 CFR 120)

Federal Motor Vehicle Safety Standard No. 120, Tire selection and rims for motor vehicles other than passenger cars, Section 5.1.2 is reproduced in part as follows:

S5.1.2. …the sum of the maximum load ratings of the tires fitted to an axle shall be not less than the gross axle weight rating (GAWR) of the axle system as specified on the vehicle's certification label required by 49 CFR part 567. If the certification label shows more than one GAWR for the axle system, the sum shall not be less than the GAWR corresponding to the size designation of the tires fitted to the axle. If the size designation of the tires fitted to the axle does not appear on the certificated label, the sum shall be not less than the lowest GAWR appearing on the label.