SPARTAN MOTORS USA, INC.
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SPARTANMOTORS.COM

January 15, 2018

National Highway Traffic Safety Administration
1200 New Jersey Avenue SE
Washington, DC 20590
Attn: Administrator

RE: 17V-815 Petition for Inconsequentiality

Dear Administrator:

Spartan Motors USA, Inc., (Spartan) for its Specialty Vehicle business unit, submits this Petition for Determination of Inconsequential Noncompliance ("Petition") pursuant to the National Traffic and Motor Vehicle Safety Act ("Safety Act"), 49 U.S.C. §30118(d) and 49 C.F.R. Part 556, for an exemption from the notice and remedy requirements of 49 U.S.C. §30118(c) and 49 CFR Part 577, on the grounds that the noncompliance to which this petition relates is inconsequential to motor vehicle safety. Under the Specialty Vehicle business unit, Spartan is a manufacturer of chassis that are to be completed as motor homes.

Introduction

On December 15, 2017, Spartan determined that non-compliance to FMVSS 121, Air Brake Systems. More specifically, Spartan determined that up to 100% of approximately 414 motor home chassis may not fully meet the requirements S5.1.2.1 of FMVSS 121, which requires the combined volume of all service reservoirs and supply reservoirs to be at least 12 times the combined volume of all service brake chambers.

On December 18, 2018, Spartan submitted notification regarding the non-compliance to the Recall Management Division of the National Highway Traffic Safety Administration as required by 49 C.F.R. Part 573, Defect and Noncompliance Responsibility and Reports. A copy of Spartan's Part 573 Noncompliance Report is attached. Between 8, 2016 and December 13, 2017, Spartan conducted calculations and reviewed actual brake chamber capacities of the affected chassis in an effort to determine, and confirm, the aforementioned non-compliance existed. Once the condition was confirmed, chassis were corrected by replacing a 500 cu. In. reservoir with one that has 1000 cu. In. capacity.

ES18-000304

Discussion

Under the Safety Act, each Federal motor vehicle safety standard promulgated by NHTSA must be "practicable, meet the need for motor vehicle safety, and be stated in objective terms." 49 U.S.C. §30111(a). The Safety Act defines "motor vehicle safety" as follows:

"Motor vehicle safety" means the performance of a motor vehicle or motor vehicle equipment in a way that protects the public against unreasonable risk of accidents occurring because of the design, construction or performance of a motor vehicle, and against unreasonable risk of death or injury in an accident, and includes nonoperational safety of a motor vehicle.

49 U.S.C. §30102(a)(8) (emphasis added).

The Safety Act exempts manufacturers from the Safety Act's notice and remedy requirements when the Secretary of Transportation determines that a defect or noncompliance is inconsequential as it relates to motor vehicle safety. See 49 U.S.C. §30118(d). Section 30118(d) demonstrates Congress's acknowledgement that there are cases where a manufacturer has failed to comply with a safety standard, yet the impact on motor vehicle safety is so slight that an exemption from the notice and remedy requirements of the Safety Act is justified. The Agency has stated that the relevant consideration in evaluating an inconsequentiality petition is "whether an occupant who is affected by the noncompliance is likely to be exposed to a significantly greater risk than an occupant in a compliant vehicle." 69 Fed. Reg. 19897, 1990 (April 14, 2004) (emphasis added). Guided by this principle, Spartan believes that an exemption is warranted in this case.

Section 5.1.2.1 of FMVSS 121, requires the combined volume of all service reservoirs and supply reservoirs to be at least 12 times the combined volume of all service brake chambers. The chassis affected by this condition are equipped with a T-24 brake chamber on the steer axle, T-30 brake chamber on the drive axle and T-16 brake chamber on the tag axle. In using the values in Table V of FMVSS 121, the cumulative air capacity of these brake chambers would be 404 cu. in. Multiplying by 12, the needed air reservoir capacity would be 4848 cu. in. To better illustrate the issue, refer to the table below.

Brake Chamber Size	FMVSS 121 Cu. In. (Table V)	Number of Chambers	Total Cu. In.
T-24	67	2	134
T-30	89	2	178
T-16	46	2	92

Total Chamber Cu. In.	404
Required Air Reservoir Capacity (using 12X multiplier) Cu. In.	4848
Spartan Actual Reservoir Capacity (Cu. In.)	4674
Additional Capacity Needed (Cu. In.)	174

Air Compressor Cut-In Pressure

In Section 5.1.1 of FMVSS 121, the vehicle is to be equipped with an air compressor of sufficient capacity to increase air pressure in the supply and service reservoirs form 85 psi to 100 psi when the engine is operating at the vehicle manufacturer's maximum recommend r.p.m. within a time, in seconds, determined by the quotient (Actual reservoir capacity x 25)/Required reservoir capacity). In using this equation, vehicles subject to the condition represented in the table, the air pressure would be required to go from 85 psi to 100 psi within 24 seconds. ((4674*25)/4848) Using the same equation and the required air reservoir capacity of 4848 cu. in., the air pressure would need to increase from 85 psi to 100 psi within 25 seconds. Vehicles subject to the condition that has resulted in the non-compliance to S5.1.2.1 could increase air pressure from 85 psi to 100 psi in less than 6 seconds, well within the requirement of 25 seconds. Further, vehicles subject to this condition have a cut in pressure set at, or greater than, the minimum requirement of 100 psi.

The impact of having 3.5% less air reservoir capacity than required, the difference in the cut in pressure requirement of only 1 second would appear to have an adverse consequence of a slight increase in air compressor cycling. However, this would be dependent on application of the service brakes.

Motor Home Duty Cycle

Motor homes have a similar duty cycle to that of a tractor trailer where they are driven at highway speeds with infrequent brake applications during such drives. Motor homes also are largely driven from owner residences to campground locations throughout the traveling season.

Given these brake applications would appear to be less frequent than those in stop and go applications. The lower than required capacity, with the one second difference time to increase air pressure, may not be noticeable by the driver and would not impact braking performance of the vehicle.

Air System Warning

The completed motor homes subject to this condition are equipped with two air gauges that monitor the air system pressure in both System 1 and System 2. In addition to the air gauges, there are both a warning light and audible alarm to alert the driver of a low air condition.

Conclusion

The actual air reservoir capacity in the affected motor home chassis may be 3.5% less (174 cu. in.) than the calculated required amount as indicated in the table above. However, due to the duty cycle of a motor home and the air compressor cycling that is well within the required time using the equation from FMVSS 121, Spartan believes the non-compliance is inconsequential to motor vehicle safety. The less than required capacity does not appear to impact vehicle braking performance. (e.g. stopping distance, brake application and release timing) The completed vehicles are equipped with dual air gauges, a visual and audible warning system to alert the driver to a loss of air in the air brake system. Given the aforementioned, Spartan requests that it be exempt from the notice and remedy provisions of the Safety Act.

Please contact me directly with any questions or would like additional information.

Best Regards,

Wesley D. Chestnut
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Spartan Motors USA

Vehicle Report

NHTSA ID: 17V815 Transaction ID: 17-001731-20020-10 (Original Report)

Required fields indicated with *

Manufacturer: Spartan Motors USA

1541 Reynolds Road
Charlotte MI 48813

Wesley Chestnut
517-543-6400,

This is a Safety Defect Report. Filing a petition pursuant to 49 CFR 556

Vehicle Information

Spartan Specialty Vehicle MM and K2 2015 - 2019

* **Model Yr. Start:** 2015
* **Model Yr. End:** 2019
* **Make:** Spartan Specialty Vehicle
* **Model:** MM and K2

Production Dates Begin: 02/12/2014
End: 12/11/2017

VIN Range(s): Begin: End:

Type: BUSES, MEDIUM & HEAVY VEHICLES
Body Style:
Powertrain:
Descriptive Information:
Motor home chassis affected by this recall are equipped with T24 brake chambers on the steer axle, T30 brake chambers on the drive axle, T16 brake chambers on the steer axle and a 500 cubic inch reservoir (Wet Tank)

Number potentially involved: 414 **Estimated percentage of involved with defect:** 100%

Defect / Noncompliance Description

For this Defect/Noncompliance:

* **Describe the defect or noncompliance:**
The combined volume of air in all service and supply reservoirs does not meet the 12X combined volume for all service brake chambers as defined in S5.1.2.1 of FMVSS 121 - Air Brake Systems

If a noncompliance, provide the applicable FMVSS:
121 - Air brake systems

If applicable, provide any further FMVSS affected:

Describe the cause:
Pending further review

* **Describe the safety risk:**
Spartan is petitioning NHTSA for a determination that this matter is inconsequential to motor vehicle safety.

Identify any warning which can precede or occur:
Spartan is petitioning NHTSA for a determination that this matter is inconsequential to motor vehicle safety.

This Recall affects all vehicles.

If applicable, identify the manufacturer of the defective or noncompliant component. If the manufacturer of the component is unknown, provide the information for the company that supplied the subject component.

Component manufacturer

Company Information

Company Name:
Country:
Address 1:
Address 2:
City:
State:
Zip/Postal Code:

Company Contact Information

First Name:
Last Name:
Position:
Email:
Phone:

Chronology of Defect / Noncompliance Determination

Provide the chronology of events leading up to the defect decision or test data for the noncompliance decision.:
On, or near, December 8, 2017, Engineering reviewed certain configurations of axles with certain brake chambers and performs capacity calculations on those axles. Engineering consults with Compliance on the preliminary findings. December 12, 2017, Compliance completes review of the requirements in FMVSS 121 for air reservoir capacity and performs calculation to confirm Engineering's findings. A VIN list identifying motor home chassis that could be affected by this condition and a stop ship was placed on further shipments until the condition was remedied. Information regarding the actual capacity of the

brake chambers was sought. On 12/13/17, the actual capacity of the service brake chambers was reviewed and it was determined the calculated amount of capacity was lower than the actual. On December 15, 2017, Spartan determined a non-compliance to exist in the affected units.

Identify the Remedy

Describe the defect/noncompliance remedy program, including the manufacturer's plan for reimbursement.
Spartan may not conduct an owner notification and remedy campaign until NHTSA has resolved its petition.

Describe what distinguishes the remedy component from the recalled component.
Vehicles affected by this condition would be equipped with a 500 cubic inch capacity air reservoir for the wet tank. A wet tank with 1000 cubic inches of air capacity would be installed in its place.

Identify and describe how and when the recall condition was corrected in production.
The recall condition will be corrected in production on, or after, 12/12/17 by using an air tank reservoir with a capacity of 1000 cubic inches for the wet tank.

Identify the Recall Schedule

Describe the recall schedule for notifications.:
Spartan may not conduct an owner notification and remedy campaign until NHTSA has resolved its petition. In this case, Spartan does not have dealers thus a dealer notification will not be issued.

Planned Dealer Notification Begin Date:

Planned Dealer Notification End Date:

Planned Owner Notification Begin Date:

Planned Owner Notification End Date:

Manufacturer's identification code for this recall (if applicable): 17031

Please be reminded that owner notification letters must be mailed no more than 60 days from submission of this report.

Manufacturer Comments to NHTSA Staff

Document Upload

There are 1 documents associated with this report.

Part 573 Safety Recall Report 17V-815

Manufacturer Name : Spartan Motors USA
Submission Date : DEC 18, 2017
NHTSA Recall No. : 17V-815
Manufacturer Recall No. : 17031

Manufacturer Information :

Manufacturer Name : Spartan Motors USA
Address : 1541 Reynolds Road
Charlotte MI 48813
Company phone : 517-543-6400

Population :

Number of potentially involved : 414
Estimated percentage with defect : 100 %

Vehicle Information :

Vehicle 1 : 2015-2019 Spartan Specialty Vehicle MM and K2
Vehicle Type : BUSES, MEDIUM & HEAVY VEHICLES
Body Style :
Power Train : NR
Descriptive Information : Motor home chassis affected by this recall are equipped with T24 brake chambers on the steer axle, T30 brake chambers on the drive axle, T16 brake chambers on the steer axle and a 500 cubic inch reservoir (Wet Tank)
Production Dates : FEB 12, 2014 - DEC 11, 2017
VIN Range 1 : Begin : NR End : NR ☐ Not sequential

Description of Defect :

Description of the Defect : The combined volume of air in all service and supply reservoirs does not meet the 12X combined volume for all service brake chambers as defined in S5.1.2.1 of FMVSS 121 - Air Brake Systems
FMVSS 1 : 121 - Air brake systems
FMVSS 2 : NR
Description of the Safety Risk : Spartan is petitioning NHTSA for a determination that this matter is inconsequential to motor vehicle safety.
Description of the Cause : Pending further review
Identification of Any Warning that can Occur : Spartan is petitioning NHTSA for a determination that this matter is inconsequential to motor vehicle safety.

Supplier Identification :

Component Manufacturer

Name :	NR
Address :	NR
	NR
Country :	NR

Chronology :

On, or near, December 8, 2017, Engineering reviewed certain configurations of axles with certain brake chambers and performs capacity calculations on those axles. Engineering consults with Compliance on the preliminary findings. December 12, 2017, Compliance completes review of the requirements in FMVSS 121 for air reservoir capacity and performs calculation to confirm Engineering's findings. A VIN list identifying motor home chassis that could be affected by this condition and a stop ship was placed on further shipments until the condition was remedied. Information regarding the actual capacity of the brake chambers was sought. On 12/13/17, the actual capacity of the service brake chambers was reviewed and it was determined the calculated amount of capacity was lower than the actual. On December 15, 2017, Spartan determined a non-compliance to exist in the affected units.

Description of Remedy :

Description of Remedy Program :	Spartan may not conduct an owner notification and remedy campaign until NHTSA has resolved its petition.
How Remedy Component Differs from Recalled Component :	Vehicles affected by this condition would be equipped with a 500 cubic inch capacity air reservoir for the wet tank. A wet tank with 1000 cubic inches of air capacity would be installed in its place.
Identify How/When Recall Condition was Corrected in Production :	The recall condition will be corrected in production on, or after, 12/12/17 by using an air tank reservoir with a capacity of 1000 cubic inches for the wet tank.

Recall Schedule :

Description of Recall Schedule :	Spartan may not conduct an owner notification and remedy campaign until NHTSA has resolved its petition. In this case, Spartan does not have dealers thus a dealer notification will not be issued.
Planned Dealer Notification Date :	NR - NR
Planned Owner Notification Date :	NR - NR

* NR - Not Reported