

March 3, 2021

NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
1200 New Jersey Ave, SE
Washington, D.C. 20590

The attached additional information is in regard to our original NHTSA complaint # 11363318 filed in October 2020 which we have yet to see any feedback on from NHTSA other than the posting of it on NHTSA website.

Additional information has been gleaned from numerous hours of research and \$1000's of dollars spent including;
Cummins Insite diagnostics – on multiple units of Entegra, Tiffin and Thor Coach's
Visits to service facilities – Spartan
Calls to manufacturers - TIFFIN
Information from Managers of service facilities – Cummins Coach Care
Information from Component providers – Allison, Meritor Wabco

It all comes down to the fact that this complaint filed in regard to the FREEWHEELING and 12V electrical stray power is duplicated on all the above coach chassis. The view that that reflects due to the safety hazard it has hidden is not in the least encouraging to the Coach Owners, either current or prospective.

Numerous Cummins Insite Diagnostics runs have documented on multiple years coach RV chassis the compounding error codes of systems failing in the hundreds of counts. While there is an ongoing increasing number of systems involved in most all coach's the Cummins Insite runs points directly to the MULTIPLEXING wiring that all of these chassis have.

As spelled out in the Cummins OEM specifications which are copyrighted for systems contained thru the Electrical Control Module (ECM) provided with the diesel engines they are to be installed as designed. It has become readily apparent thru the Cummins Insite runs that the multiplexing wiring has been severely compromised as well therefore the ability for the ECM to function as designed and provided by Cummins on numerous components.

We have been informed that the Allison transmission does not have a retarder installed so it cannot be wired to meet the ECM requirements. This evidently more economical provision due to the lack of a retarder unit has led to the inability of having the LOWER DROOP which is one of the four components of the Cruise Control system.

The LOWER DROOP in this patented Cummins system is the phase that controls the fuel intake to the Cummins diesel when the coach is in a downgrade travel mode. In short the Lower droop wired thru the Allison transmission works to control the speed of the coach as it moves downgrades and thereby by reducing rpm's the fuel rail on the Cummins diesel limits the fuel input.

The significant effect of not having the LOWER DROOP allows the engine rpm's to increase even when there is an engine brake installed. Believing that the use of an engine brake is the resolution to eliminating the Lower Droop is a

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Kingsley, Michigan

complete fallacy. The engine brake has no method of reducing fuel input to the diesel engine but it does have the potential to *increase rpm's* substantially on a downgrade and in most every case of use it does just that.

Increasing rpm's to the Cummins diesel involves an ECM function that commits to the fuel rail the need for additional power and therefore allows the fuel rail to add more fuel to **INCREASE THE RPM'S which increases the speed of the vehicle in a downgrade travel mode.** This presents a MAJOR SAFETY HAZARD that the engine brake cannot safely always overcome as the operator of the unit has to mechanically make function all the time trying to keep their eyes on the road and traffic.

With the findings by Cummins Insite diagnostics, the actions by Spartan service facility, there is only one conclusion that can be perceived and that is the chassis was built in the most economical way thru deleting the OEM standard and not installing the retarder when adding an engine brake. There is also the direct implication that they also compromised the Multiplexing wiring that is allowing the 12V stray power in numerous varying components.

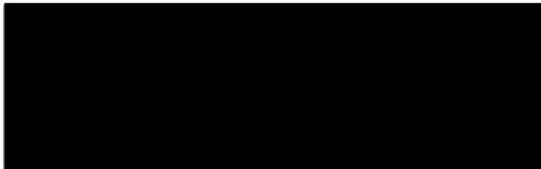
As you look at other ENTEGRA NHTSA complaints you will also see that the DEF unit has been an ongoing problem. Our unit also had to have its DEF unit replaced as it was not indicating correctly. Yet very possibly the result of the 12v stray electrical problem that we had not fully identified at the 2018 time frame of the DEF unit replacement.

In summation there is a very common problem in numerous RV chassis as documented by the Cummins Insite diagnostics, even when a manufacturer tries to cleanse your ECM and install a pop up blocker to block you from seeing the multiplexing error codes.

The not following OEM standards and somehow corrupting the multiplexing wiring, with manufacturer not allowing drawings or schematics on electrical wiring to service facilities has resulted in creating a SAFETY hazard for a major number of BIG RIG size RV's traveling all over the North American continents highways and roadways.

Multiple documents on multiple units have been preserved for basis of this complaint and are available.

Your review and immediate attention to this SAFETY problem is requested.



Attachment: Added Research and Findings 6 page DOC.

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1200 New Jersey Ave, SE Washington D.C. 20590

NHTSA Complaint #11363318 ADDED RESEARCH and FINDINGS SUBMITTAL

The following is a synopsis of findings related to the initial complaint filed in October 2020 in regard to our 2017 Entegra Cornerstone Coach having **stray 12V power** and its **Freewheeling** when moving down a grade.

Categorizing the basis for our complaint is as follows;

1. **MULTIPLEXING**
2. **STRAY 12V POWER**
3. **CRUISE CONTROL**
4. **FORWARD SENSING RADAR**
5. **LOWER DROOP**
6. **THROTTLE CONTROL**
7. **ABS BRAKING SYSTEM**
8. **ENGINE BRAKE**
9. **ALLISON TRANSMISSION**
10. **DEF SYSTEM**

1. MULTIPLEXING

In some way or manner, the OEM wiring or system has been compromised to the point that the CUMMINS OEM patented system has been altered thereby allowing stray 12V power to effect numerous operating systems even in their OFF position.

This multiplexing arrangement as found on our coach appears to be compromised by Spartan adding the Forward Sensing Radar as an option on the 2017 chassis. We have had numerous outages of this system over the 4 years of ownership, multiple complaints during the 2-year warranty period, and a shutdown again at the 720-mile distance within 1 month of having the system serviced at the Spartan Factory service shop in Charlotte, Michigan.

2. STRAY 12V POWER

Documentation via the Cummins Insite diagnostics indicates that there is standing 12v power on numerous areas including switches and components.

At the 3-year interval of ownership the 2 chassis batteries were found to be compromised with both cases deformed including the tops coming off. The previous 8 months while the coach was located on an RV site in Florida, to start coach we had to use the battery boost function which is what alerted Dave to check the batteries. Visual of the batteries in their bay did not reveal the compromised cases as most bulging was at the rear of the batteries. Connection of the battery cables to the battery terminals indicates

Replacement of the batteries was completed.

3. CRUISE CONTROL

Numerous codes via Insite diagnostics became apparent, 40, when the first diagnostics run was completed in Jan 2019. In all the factory service center visits at Entegra facility in Middlebury Indiana their review indicated, "Working as designed" or "No problem found" by the Spartan chassis techs.

However, whenever the Forward Sensing Radar quit, on numerous occasions driving down the highway, the Cruise also becomes inoperable until the Forward Sensing Radar is returned back to operational. This is somewhere in an average of every 365 miles traveled frequency.

The count of the cruise 1117 code was at 116 as of the Insite run in July 2020. A nearly 300% increase in 17 months.

On an Insite run completed on return from trip to residence from Spartan service appointment in late September 2020 the program indicated that there was *standing 12V power on all 4 switches of the Cruise Control.*

The cruise control was in the OFF position with coach parked in its storage bay.

4. FORWARD SENSING RADAR

The forward sensing radar has been an operational problem since purchasing the coach. At around 300 miles it began its routine shutting down. It also had numerous incidences of suddenly abruptly slowing the coach when there was nothing on the roadway, including oncoming traffic. It was so imminent that I had adapted to driving with my foot very near the accelerator pedal so I could engage the accelerator quickly and reduce the sudden deceleration that sent items flying and individual(s) riding from shouting **"WHAT ARE YOU DOING!"**

This relates to my indicating to Entegra and Spartan numerous times that **"THIS COACH HAS A MIND OF ITS OWN"**. Their answer was always, "Working as designed" or "No problem found".

However soon after leaving the Service facility going down the highway none of their statements applied.

5. LOWER DROOP

As the Cruise control is an OEM function and is provided by the Cummins patented OEM system with its diesel engine it is designed with 4 functions, one of them being the LOWER DROOP. The lower droop function provides the ability to reduce the fuel to the diesel engine when transcending a down grade. It works via the transmission to decrease the rpms as you descend the grade thereby having the fuel reduction to the engine and controlling the speed of the unit as it descends the downgrade with 3%+- tolerance.

The CUMMINS LOWER DROOP is not functioning on SPARTAN, TIFFIN, NEWMAR and FREIGHTLINER Chassis's.

6. THROTTLE CIRCUIT ELECTRICAL INTERFERENCE NHTSA Recall #16V827

This recall involved a supposedly non twist in a certain wiring loom that could cause an operational malfunction which as described by Mr. Wixson the Manager of the Spartan service facility would support my "Mind of its Own" statement as **he agreed the coach could speed up or abruptly slow down without driver input.**

From our findings this was a very light massaging of a very different wiring problem, MULTIPLEXING and the compromising of the OEM Cummins patented system.

As a result of stray 12V power thru the Cruise Control switches the Throttle air valve is now staying open in some degree and creating an unlevel situation in our coach when parked for over 24-48 hours. The Throttle is an air operated system therefore every couple of days we have to start the engine to replenish the air in the system to inflate air bags to level the coach that has depleted by leaking with the switch allowing the Throttle to stay cracked.

There is also some sense that if when standing there is loss of air the throttle valve must also be losing air when traveling creating a continued operation of the compressor and potentially shortening its life cycle.

Again a compromised result of stray 12V power on the cruise switches which work in conjunction with the Throttle and ABS braking system.

7. ABS BRAKING SYSTEM

As discussed in several other components the ABS system is a critical part in keeping a 56,000 lb unit with a 20,000 lb towing capability under control and being able to safely travel, over level roadways and also the high mountainous grades such as in mountains with grades up to 12% that have to be descended.

The lack of the OEM Lower Droop takes this ABS system completely out of an automatic fluid type system and puts it into a mechanically operated system with numerous mechanical parts that have to function together flawlessly to allow a driver to be able to maintain control of a unit this size.

Several of these mechanical parts have to be personally and physically engaged by the driver to mesh this mechanical system together to function – all while driving down the roadway, looking down at numerous locations for mechanical activation, taking eyes off roadway that is normally very curvy, and with other traffic involved.

There is no consideration for SAFETY in this type mechanical system.

The Engine brake system has no method to reduce fuel to the diesel engine! At some point the 600 hp diesel overrides the ability of the engine brake and then the service brakes to control the coach on a downgrade as the speed increases. Overrevving can create a mechanical failure scenario for the diesel engine and in this situation the engine brake and then soon the service brakes become totally ineffective as there is no air to operate them with the compressor not functioning.

The Cummins OEM patented CRUISE system is the SAFE travel system for any driver.

For any manufacturer to compromise the CRUISE CONTROL system provided by Cummins that is the OEM of the 12V Electronic Control Module (ECM) supplied with the Diesel unit and compromises the Safety of an RV unit which has no training requirement in the US to be a driver of has to be viewed as fundamentally incompetent (for a polite word). The minute those chassis moved off the assembly line SAFETY on the roadways was left behind.

8. ENGINE BRAKE

The engine brake added to the coach is a mechanical function that uses backpressure thru the cylinders of the engine to reduce the speed of the coach. It has to be turned on in the position desired based on the amount of braking the driver thinks may be needed for their driving location or habit. High/low or High/medium/low based on engine size.

There is a major safety implication when a driver that has to have a license to drive an automobile type vehicle is allowed to get into a 26 to 40+ ton vehicle without any requirement for training or license. Some have never even heard the term "Engine Brake" much less know how it has to be used or when or why.

As noted in the ABS system you have to be first knowledgeable that you the driver has to understand there are numerous functions that you have to operate to keep your unit going down the road in a safe manner, for your safety and for all others on the road around you. The average automobile driver has no knowledge whatsoever what those mechanical functions are or what they prevent. Due to the elimination of the LOWER DROOP there is no automatic function that allows the Allison transmission in conjunction with the Cummins ECM to restrict fuel to the diesel engine that is going downgrade. With elimination of the LOWER DROOP as the coach gains momentum downgrade the diesel feeds more fuel thru the fuel rail due to the RPM's increasing – which is a normal process in climbing a grade so the engine can increase speed- it has to have more fuel to increase speed and pull the load. ***Without the LOWER DROOP the engine is receiving additional fuel and PUSHING THE COACH DOWN THE GRADE!***

FREEWHEELING DOWN A GRADE OR AROUND A CURVE is the last thing any driver wants to encounter and the removal of the LOWER DROOP has created this.

The engine brake is totally relying on driver implementation and mechanical parts to not only function together but to work properly, at every instance encountered. Any RV owner will tell you that the sum of mechanical parts on an RV is an ongoing issue and is seldom achieved. In this case it involves SAFETY along every roadway traveled. *But it has been removed.*

Even with a 2017 unit we never received any training on how to use the engine brake. There was no manual provided by Entegra in regard to the engine brake. *Every other switch in the driver's compartment has been addressed in the manuals provided by the coach manufacturer with exception of the Engine Brake.* The most we were told was that it had 3 positions when we complained of its abruptness.

We are not alone as with all the diagnostics completed with Insite and conversations with other coach Owners they do not or have not been schooled on how and when to use the Engine Brake. ***Spartans Big Mike in his training sessions on the chassis tells you to leave the engine brake alone and turned off and use your service brakes "You will never wear them out".***

9. ALLISON TRANSMISSION

In conversation with an Allison Certified Technician and Shop Manager in regard to the Allison transmission we have been advised that the transmission installed in our coach does not contain a retarder. That explains why the LOWER DROOP is no longer able to be utilized as without the retarder it cannot function.

It now becomes very obvious why Mr. Wixson from Spartan in August 2020 told Dave he did not know what he was talking about as they discussed the pin numbers on the ECM where the wiring for the Lower Droop should be. ***"SONNY, we changed the wiring over 10 years ago so you do not know what you are talking about".***

It is also very interesting that Cummins in their patented cruise control thru the ECM provided by Cummins with the notation that the OEM standards are to be followed, have not been followed and therefore are corrupting the ECM and allowing stray 12V voltage on other areas.

Makes the visit that was absolutely demanded by Entegra to take our coach to Spartan service in Charlotte, Michigan when we continued to complain about all the above items in July, Aug and Sept of 2020, much more meaning full on their intent.

That visit to Spartan Service, managed by Mr. Wixson, resulted in our ECM being completely wiped clean, AND A POP UP BLOCKER INSTALLED WHERE THE INTENTION WAS TO DISSALLOW US TO GET ANY MORE CODES IN REGARD TO THE MULTIPLEXING FAILURES.

Obviously, they did not understand that even though Joyce Skinner, Director Customer Experience, Entegra, demanded that we allow the people, Entegra and Spartan, be allowed to service our coach as they know it better than our Mechanic. An email to me from Joyce on September 2, 2020 contains all that profound direction.

As documented by Cummins Insite, in Spartans service facility parking lot, prior to entering their service bay, and after leaving their service bay in same parking lot Cummins Insite runs were completed by Dave Atherton. Time Stamped diagnostic runs have documented all the above including another code at 34 miles from service facility and 2 more for a total of three on the 194-mile trip back to our residence.

*It also makes very clear the discussions with Cummins Coach Care managers, that are Certified Spartan Chassis facilities in regard to their being able to work on anything, **EXCEPT the wiring.** SPARTAN WILL NOT GIVE THEM ANY WIRING INFORMATION OR DIAGRAMS.*

10. DEF SYSTEM

In early 2nd year of having our coach the DEF system electrical system started to not indicate properly the amount of fluid contained in the reservoir. On service visit it was determined that the electrical input had failed and therefore the unit needed to be replaced which was completed after 4 week delay to get unit.

From differing NHTSA complaints, conversations with coach owners and articles read there definitely appears that this failure of the 12v electrical component on the DEF system is also a problem related to the OEM standard not being followed. Our failure and replacement were in early stage of us identifying the OEM standard not being followed so we have no information other than indication it was an electrical component failure as told by service facility?

In the past two weeks a coach that was involved in an accident with other vehicles it was following has recently acquired Dave Atherton's services. In that review Dave has thru his Cummins Insite diagnostics determined that the statement from the driver that "I could not get the coach to stop", was definitely correct as the rpm's of the coach were in 2600-3100 rpm range. The normal operating rpms are not to be above 1700 as per Cummins Diesel specifications. This definitely points to the above related findings of our documentations in our complaint when OEM standards are not followed.

There has been an independent insurance adjuster sent by Hartford Insurance to review this claim. Dave has any and all other particulars regarding the Insite runs, Hartford communication, Adjuster visit and Owners in regard to this case.

In call to Dave from Adjuster on March 3, 2021 regarding this unit involved in the accident they have discovered that the steering column was changed and rearranged. Part numbers for all parts on the new steering column have been ground off. Owner relates that the steering column was not involved in accident and shop involved in doing coach repairs says they do not know anything about the changed steering column being worked on even though they had custody of the coach for 8 months.

This appears to be another inside happening where the work order and the invoice show only \$2900.00 for labor and \$29,000.00 for total invoice but do not list any work in regard other than to replace the damaged cap on the exterior front of the coach. Very similar to the work order we received from Spartan when our coach was in their shop in September 2020. Grinding off part numbers by a certified licensed dealer is very abnormal for a polite word.

Multiple coach's on **Spartan, Tiffin, Newmar and Freightliner chassis's** have been tested in recent months using the Cummins Insite Diagnostics program including the newest version PRO. All of those coach's tested have documents preserved by engine serial number, are date and time stamped, making them certifiable admissible documents. The number of documents is as of this date in double digits and continually increasing with individual unit testing ongoing.

They ALL show the same active codes as our coach shows.

These Cummins Insite diagnostics were conducted by Dave Atherton whom is a certified Cummins Insite Technician & Master Mechanic for Cummins and Caterpillar systems for over 5 decades. Dave may be contacted for additional input at 605-699-0720 cell and text. Dave Atherton is also the only individual to have competed any diagnostics on our unit other than Entegra or Spartan Service Facilities.

What becomes very clear from the rhetoric from Entegra and Spartan and then Spartans actions to delete and try to eliminate the ability to continue to get codes on the multiplexing system with now three other manufacturer's chassis indicating the same active codes is that there is an industry wide attempt to keep this behind closed doors. There are now more individuals joining the belief that this may be a systemic cover up and are using a totally different term as to what it may legally be seen as.

Your investigation into this is critical to the safety of not only thousands of Coach Owners but numerous thousands of motorists that are traveling the same roadways as these units. Any data we have will be forwarded as requested.