

Allison Transmission Information 1

On a recent trip I decided to run a few tests on the Allison 3000 Transmission in my 2007 Phaeton, which was built on the Freightliner XC chassis.

I monitor various engine and chassis sensors, using the Silverleaf Electronics VMSPC hardware and software on a laptop computer. One of the gauges I have selected is a scan gauge which allows me to display the MAX of several gauges over about a twenty minute period. I monitor the MAX engine RPM's, MAX engine coolant temperature, MAX engine oil temperature and a couple of other MAX engine parameters.

One question which has been asked multiple times on different forums is, "What is the Red Line on my engine or transmission". In an attempt to answer that question, after multiple full throttle operations by MANUALLY selecting second gear, I have been able to run the Mercedes-Benz 926 engine in my coach up to 2,754 RPM's. At that point, fuel delivery was limited to prevent any further increase in RPM's.

On the flip side of the full throttle operation is the retarder operation by either the engine or exhaust braking operation. During the engine/exhaust braking operation the Allison transmission will pre-select 2nd gear and begin to downshift as the engine and transmission programming will allow. Again using multiple operations I have found the Allison 3000 transmission on my chassis will up-shift when the engine exceeds 3,000 RPM's.

I began a downhill by MANUALLY selecting second gear. When the engine RPM's exceeded 3,000 the transmission up-shifted to third gear, **speed 40 MPH**. As the coach continued to pick up speed and the engine RPM's again exceeded 3,000 the transmission up-shifted to fourth gear, **speed 53 MPH**. At that point I terminated the test and depressed the "D" button. Had I continued the test the transmission would have shifted into fifth gear at **75 MPH**, I was content with the test without pushing the engine or transmission any further. Depressing the "D" button on the keypad automatically selects the highest gear which is sixth gear on this transmission.

During the test, the transmission gear was MANUALLY selected. However, when the programmed upper limit of the selected gear was exceeded the transmission up-shifted to protect itself and the engine. The gear selected display was showing second gear while the gear attained was showing third until the transmission up-shifted and then fourth gear was displayed until I depressed the "D" button to terminate the test.

I hope this information is of some value to other owners, as it is to me.