

Your Ref: SMM 95D  
Our Ref : CI/TP20012392/D

10 November 2020

**Li Jiao Yue**  
21 Jalan Pari Dedap  
Singapore 488616

## **AUTOMOBILE INSPECTION REPORT OF MOTOR CAR SMM 95D**

1. I refer to your request on 27 October 2020 to conduct a physical inspection of a motor car bearing registration number SMM 95D (herein referred to as "**Motor Car**").
2. The purpose of this inspection was to primarily determine: -
  - a) whether the manual transmission assembly on the Motor Car was fitted in a secure manner that will not affect the structural integrity of the Motor Car; and
  - b) whether there was any operational issue(s) to the manual transmission system of the Motor Car.
3. Following the request, I had carried out a physical inspection of the Motor Car on 06 November 2020 at the premises of No. 48 Toh Guan Road East #02-136 Enterprise Hub, Singapore 608586. I also conducted a short test drive of the Motor Car during this inspection.
4. I now set out below my observations and comments with respect to this inspection and test drive.

### **Inspection of the Motor Car**

5. The following general information of the Motor Car was first recorded at the time of my inspection: -

Vehicle Registration No.	: SMM 95D
Make / Model	: Mitsubishi Lancer Evolution Wagon 5A/T
Chassis No	: CT9W0002759
Year of Registration	: 2006 (October)
Mileage	: 122,898km

6. The Motor Car was fitted with a 5-speed manual transmission assembly, consisting of 2 main housings. The input side of the transmission, which houses the main shaft and various gear sets is bolted to the crankshaft side of the engine block. The gear set in the input side of the transmission connects to the transfer case, which is the second of the 2 main housings. The transfer case is also the output side of the Motor Car's transmission. The left and right drive shafts were observed to be securely fitted from the transfer case to the front left wheel and front right wheel respectively. The transfer case also connects to the propeller shaft, which leads to the rear differential of the Motor Car. There was no crack and/or hole observed on both housings.
7. The transmission assembly of the Motor Car was supported by 2 brackets. One was at the front of the transmission while the other was at the rear of the transmission. Both brackets were found to be mounted onto the Motor Car's crossmember. Both brackets were also with rubber bushings, which absorbs any vibrations arising from the rotation of the transmission gears, minimising any stress to the bracket and correspondingly also minimise any stress to the crossmember that these brackets are mounted onto.
8. The transmission assembly was operated by a clutch pedal, for engaging and disengaging the transmission gears, and a manual gear shifter for manually selecting the transmission gear to be engaged. See photo 1 – 10 below taken during my inspection of the Motor Car.



**Photo 1** shows the Motor Car hoisted for checks on its undercarriage, in particular to its transmission assembly.



**Photo 2** shows a general view of the transmission assembly (red arrow) that was fitted on the Motor Car. This was the input side of the transmission, which houses the main shaft and various gear sets. It is bolted to the crankshaft side of the engine block. The input side of the transmission connects to the transfer case (yellow arrow), which is the output side of the Motor Car's transmission.

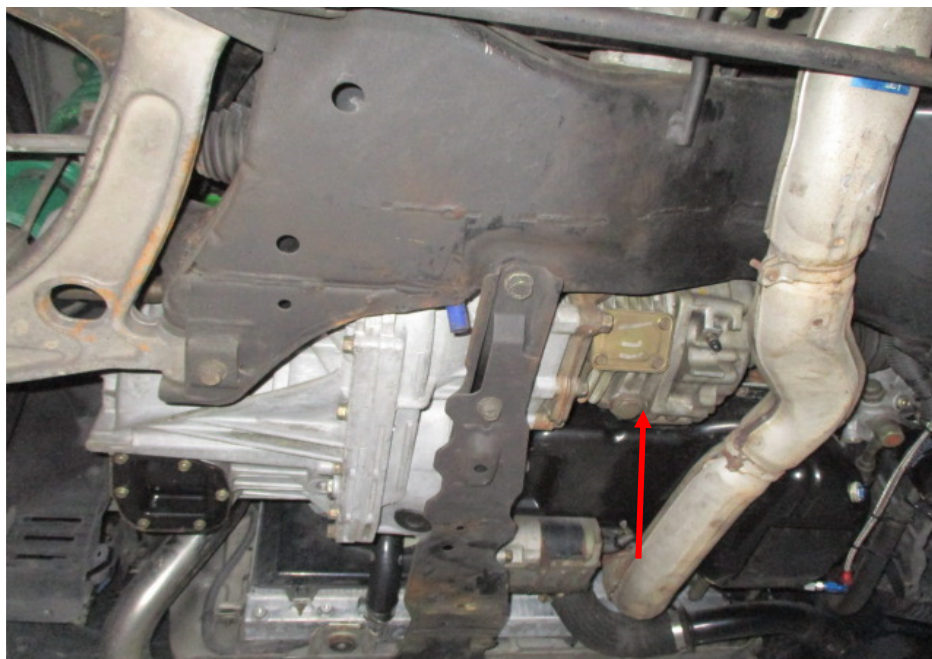


**Photo 3** shows another view of the transmission assembly that was fitted on the Motor Car. This was the input side of the transmission, which houses the main shaft and various gear sets. There was no crack and/or hole observed on the transmission housing.





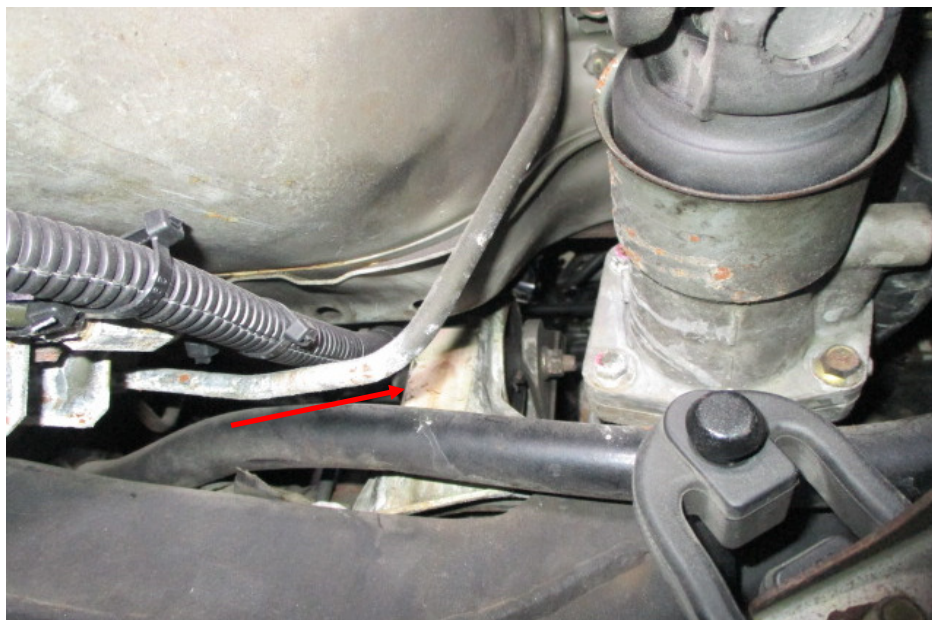
**Photo 4** shows the transfer case (red arrow) of the Motor Car. The transfer case is also the output side of the Motor Car's transmission. The gear set in the input side of the transmission (yellow arrow) connects to the transfer case, which is the second of the 2 main housings of the Motor Car's transmission assembly. Drive to the front wheels of the Motor Car is provided via drive shafts that are extended from this transfer case. The transfer case also connects to the propeller shaft, which leads to the rear differential of the Motor Car.



**Photo 5** shows another view of the transfer case (arrowed) that was fitted on the Motor Car. The transfer case is the output side of the transmission. There was no crack and/or hole observed on the housing of the transfer case.

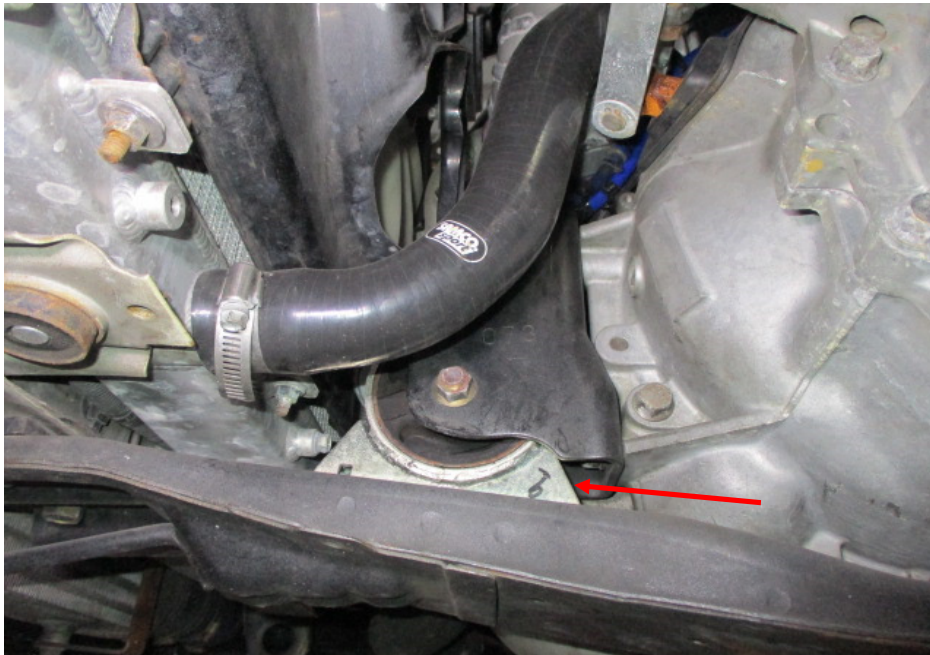


**Photo 6** shows the propeller shaft (yellow arrow), which is connected to the transfer case of the Motor Car. This propeller shaft connects to the rear differential of the Motor Car, providing the drive to its rear wheels. The transmission assembly of the Motor Car is supported by 2 brackets. One at the front and one at the rear (red arrow) of the transmission assembly.



**Photo 7** shows one of the 2 brackets that supports the transmission assembly of the Motor Car. This was the bracket at the rear of the transmission assembly, which was observed to be mounted onto the Motor Car's crossmember. The bracket (arrowed) was with rubber bushings, which absorbs any vibrations arising from the rotation of the transmission gears, minimising any stress to the bracket and correspondingly also minimise any stress to the crossmember that this bracket is mounted onto.





**Photo 8** shows the other bracket that supports the transmission assembly of the Motor Car. This was the bracket at the front of the transmission assembly, which was also observed to be mounted onto the Motor Car's crossmember. Similar to the bracket at the rear, this bracket (arrowed) was also with rubber bushings, which absorbs any vibrations arising from the rotation of the transmission gears, minimising any stress to the bracket and correspondingly also minimise any stress to the crossmember that this bracket is mounted onto.



**Photo 9** shows the manual gear shifter (arrowed) that was fitted on the Motor Car, for manually selecting the transmission gear to be engaged.



**Photo 10** shows the clutch pedal (arrowed) of the Motor Car, for engaging and disengaging the transmission gears.

9. I subsequently test drove the Motor Car to primarily determine whether there was any operational issue(s) to its manual transmission system. The Motor Car was driven along the arterial roads in the vicinity of No. 48 Toh Guan Road East, Enterprise Hub.
10. The general performance of the transmission system of the Motor Car was satisfactory throughout the Motor Car's short test drive. Operationally, I did not find any abnormal behaviour of the transmission system. I was able to engage the different transmission gears without any significant difficulty. Selecting the required transmission gear by manually upshifting and downshifting of the gear shifter was relatively smooth. The Motor Car was also able to reverse when the gear was manually shifted to reverse. The mileage of the Motor Car at the end of the test drive was 122,900km.

11. In general, the transmission assembly of the Motor Car was found to be secured properly. It was not mounted onto the chassis body or any integral body part of the Motor Car. The structural integrity of the Motor Car is not compromised by the fitment of this particular transmission assembly. Overall, the operating condition of the Motor Car's transmission system was satisfactory throughout the Motor Car's test drive.



**Ang Bryan Tani**

*AMSOE, AMIRTE, AFF SAE, M.MATAI, AFF.Inst.AEA*

*Senior Technical Investigator*

*Technical Investigation & Accident Reconstructionist (SAE-A)*

**DISCLAIMER OF LIABILITY TO THIRD PARTIES:-** This Report is made solely for the use and benefit of the Client named on the front page of this Report. No liability or responsibility whatsoever, in contract or tort, is accepted to any third party who may rely on the Report wholly or in part. Any third party acting or relying on this Report, in whole or in part, does so at his or her own risk.