LWK Auto Consultants Pte Ltd

Company Registration No. 199607198R

51 UBI AVE 1, #01-25 PAYA UBI INDUSTRIAL PARK, SINGAPORE 408933 TEL : (065) 62563561 FAX : (065) 67414108

Your Ref: 548834
Our Ref : CS/MSG18002911/Z

07th March 2018

M/s MSIG Insurance (Singapore) Pte. Ltd.
16 Raffles Quay #24-01
Hong Leong Building
Singapore 048581
(Motor Claims Department)

TECHNICAL FAULT ANALYSIS INVESTIGATION REPORT INVOLVING THE CEMENT MIXER TRUCK WC 8911E ON 04th FEBRUARY 2018

1. We refer to your letter dated 13th February 2018 and the instructions therein.

2. Our investigations, analysis, comments and opinions with respect to the cause of incident to the Cement Mixer Truck WC 8911E (herein referred to as "**Insured Vehicle**") are set out below.

Inspection of the Motor Vehicle

3. The Insured Vehicle was physically inspected on 28th February 2017 at an open carpark beside Alliance Concrete Marina Grove Plant. The Plant was located at Marina Grove, Singapore.

4. A static inspection was carried out to the Insured Vehicle where the following general information was recorded:-

Vehicle Registration No.	: WC 8911E
Make / Model	: ISUZU CYH52S
Chassis No	: JALCYH52SE7000205
Year of Registration	: 13th April 2015
Mileage (Digital Meter)	: NA (Engine unable to start)

5. The Insured Vehicle was noted to have sustained extensive damages that severely effected the left hand side & rear portion. The damages was observed to impact its parts which is located on the left side & rear portion of the Insured Vehicle such as fuel tank, left tyre top garnish cover, supporting brackets for holding the mixer drum on the left & rear side amongst others. See photos 1 – 14 below.

Photo 1 shows the meter on the front dashboard. Mileage (digital) was not recorded due to the Insured Vehicle's engine unable to be started.

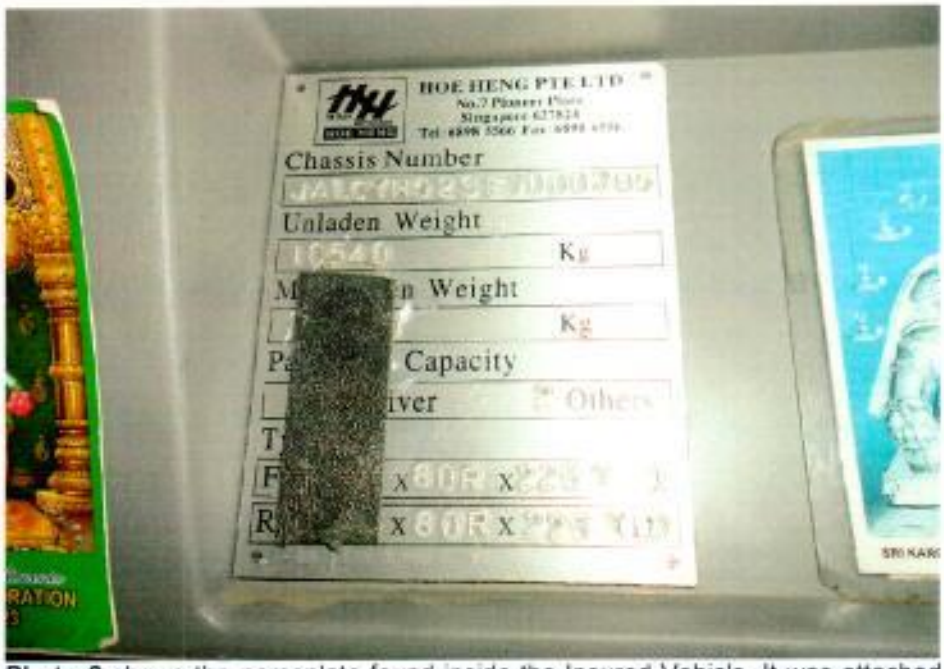

Photo 2 shows the nameplate found inside the Insured Vehicle. It was attached to the behind side of the interior cabin.

Photo 3 shows the front view of the Insured Vehicle at the time of our inspection. The Insured Vehicle was noted to be in good condition on the front portion.

Photo 4 shows the front right view of the Insured Vehicle at the time of our inspection. The Insured Vehicle was noted to be in good condition on the front right portion.

Photo 5 shows the front left side of the Insured Vehicle at the time of our inspection. The Insured Vehicle was noted to have sustained extensive damages that severely effected on most parts of the left side of the Insured Vehicle.

Photo 6 shows the full general view on the left side of the Insured Vehicle at the time of our inspection. The Insured Vehicle was noted to have sustained extensive damages that severely effected on most parts of the left side of the Insured Vehicle.

Photo 7 shows the closer view of the Insured Vehicle at the time of our inspection. The damages on some parts such as fuel tank, top tyre cover garnish and supporting parts for holding the mixer drum.

Photo 8 shows the parts that were affected due to the accident's impact at time of our inspection.

Photo 9 shows the mixer motor gear that was affected due to the accident's impact at time of our inspection.

Photo 10 shows the rear parts that were affected due to the accident's impact at time of our inspection.

Photo 11 shows the rear view that was affected due to the accident's impact at time of our inspection.

Photo 12 shows the rear view of cement mixer drum that was dislodged from the holding bracket at time of our inspection.

Photo 13 shows the front view of cement mixer drum that was dislodged from the holding bracket at time of our inspection.

Photo 14 shows the internal view of cement mixer drum that was dislodged from the holding bracket at time of our inspection. Left over hardened cement were observed to be inside the drum.

Technical Investigation

Tyres and Wheel Rims

6. The condition of the Insured Vehicle's 12 tyres was observed to be in serviceable condition. We did not find any tear, cut or burst mark(s) on the outer and the inner sidewalls as well as across the tread of the 12 tyres. The 12 tyres were also observed to be sufficiently inflated for vehicular operation. The tyre brand, tyre size and remaining tread depth of the tyres were recorded as follows:-

7. The 12 tyres were observed to be wrapped around standard steel wheel rims that were found to be without any damage. See photo 15 – 22 below.

Photo 15 shows the condition of the front left tyre of the Insured Vehicle, which was observed to be in serviceable condition with remaining tread depth of approximately 5mm.

Photo 16 shows the condition of the left tyre (2nd Row) of the Insured Vehicle, which was observed to be in serviceable condition with remaining tread depth of approximately 8mm.

Photo 17 shows the condition of the left tyre (3rd Row) of the Insured Vehicle, which was observed to be in serviceable condition with remaining tread depth of approximately 2mm.

Photo 18 shows the condition of the rear left tyre of the Insured Vehicle, which was observed to be in serviceable condition with remaining tread depth of approximately 10mm.

Photo 19 shows the condition of the front right tyre of the Insured Vehicle, which was observed to be in serviceable condition with remaining tread depth of approximately 10mm.

Photo 20 shows the condition of the right tyre (2nd Row) of the Insured Vehicle, which was observed to be in serviceable condition with remaining tread depth of approximately 10mm.

Photo 21 shows the condition of the right tyre (3rd Row) of the Insured Vehicle, which was observed to be in serviceable condition with remaining tread depth of approximately 3mm.

Photo 22 shows the condition of the rear right tyre of the Insured Vehicle, which was observed to be in serviceable condition with remaining tread depth of approximately 2mm.

Engine Compartment & Operating Fluids

8. Upon examination of the engine compartment of the Insured Vehicle, we had observed all the parts and components inside the engine compartment to be intact and unaffected by the accident. The engine coolant, brake fluid and steering fluid were all found to be of sufficient level for operating purposes. Visually, there was also no contamination found to these fluids.

9. Further examination of the engine compartment revealed no sign(s) or indication(s) of fluid leakage and/or fluid stain within the engine compartment of the Insured Vehicle.

10. Our subsequent checks on the underside of the Insured Vehicle reveals some fluid stain sighted around the transmission system. Further investigation found that the fluid stain was a pre-existed prior the accident & not a fresh fluid. This was due to some dirt observed associated with the fluid stain. Conclusively, it is not likely to be related to the accident. Visually, the various undercarriage components of the Insured Vehicle were observed to be intact and without any visible damage except for the damages caused by the accident. See photo 23 – 29 below.

Photo 23 shows a general view of the engine compartment area from the front bonnet of the Insured Vehicle.

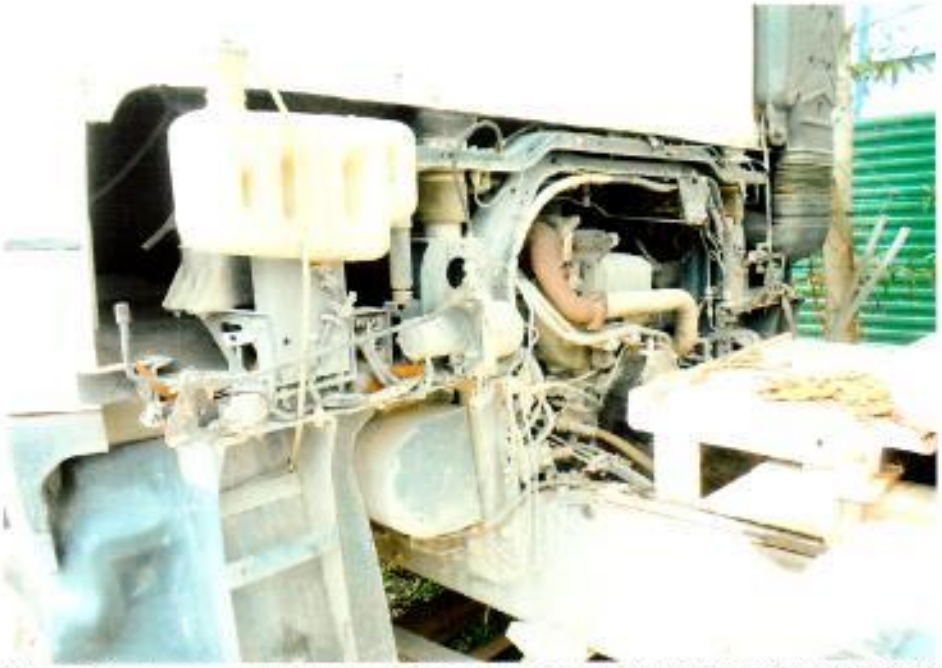

Photo 24 shows a general view of the engine compartment area from the back portion of the Insured Vehicle.

Photo 25 shows the engine coolant reservoir of the Insured Vehicle. It was found to be sufficient level without contamination.

Photo 26 shows the power steering fluid reservoir of the Insured Vehicle. It was found to be sufficient level without contamination for operational purposes.

Photo 27 shows the brake fluid reservoir of the Insured Vehicle. It was found to be sufficient level without contamination for operational purposes.

Photo 28 shows a general view on the undercarriage of the Insured Vehicle. It was observed to have fluid leakage at around the transmission area.

Photo 29 shows fluid leakage at around the transmission area. Further investigation found that the fluid stain was a pre-existed prior the accident & not a fresh fluid. This was due to some dirt observed associated with the fluid stain.

Steering System & Braking System

11. The mechanical components of the Insured Vehicle's steering system were all found to be visually intact and undamaged. The steering shaft and steering rack of the Insured Vehicle were observed to be intact and securely attached to the front left wheel and front right wheel. The steering ball joints were also observed to be in a serviceable condition.

12. Although the steering system could not be tested at the time of our inspection (engine unable to be started), it is likely that the steering system of the Insured Vehicle was in serviceable condition at the material time of accident since its mechanical components were all found to be generally intact and securely fitted. See photo 30 – 32 below.

Photo 30 shows the undercarriage components at the front right wheel of the Insured Vehicle. The various undercarriage components were all observed to be intact and without any visible damage. This had included the steering rack and steering linkages (arrowed) of the Insured Vehicle.

Photo 31 shows the undercarriage components at the front left wheel of the Insured Vehicle. The various undercarriage components of the Insured Vehicle were all observed to be intact and without any visible damage. This had included the steering rack (arrowed) of the Insured Vehicle, which was observed to be securely attached to the front left wheel.

Photo 32 shows the steering wheel rod of the Insured Vehicle. It was observed to be intact and undamaged not affected by the accident's impact.

13. The braking system of the Insured Vehicle was noted to be of an air-assisted hydraulic braking system. Briefly, in this system, compressed air is used to force the hydraulic fluid to the brake wheel cylinders (for drum brakes) or to the brake callipers (for disc brakes). The pressurized hydraulic fluid then presses onto the brake shoes (for drum brakes) or onto the brake pads (for disc brakes), through the respective braking mechanism, thus slowing the rotation of the wheels.

14. Since the engine of the Insured Vehicle could not be started, we were therefore not able to carry out test(s) on whether there was any leakage of compressed air that could have affected the braking efficiency of the Insured Vehicle. However the air pipes, air tanks and connecting valves had all appear to be in good general condition and securely fitted upon our visual examination of these parts. See photo 33 & 34 below.

Photo 33 shows the air tanks, valves, pipes and hoses, which are some of the components for the air-assisted braking system of the Insured Vehicle. These components were mainly located around the right centre body of the Insured Vehicle, and were unaffected by the accident.

Photo 34 shows the rear undercarriage components of the Insured Vehicle. The brake cylinder & brake hoses of the Insured Vehicle were all observed to be intact and without any visible damage.

Investigation and Interview Session

15. From the Singapore Accident Statement which was made by Mr Sathaiah Karuppiah (herein referred to as **"Mr Satia"**), at about 12.30pm while he was still driving the vehicle to do delivery of cement to another construction Plant called 'Bedok Station', after turning right from central boulevard, he heard a loud sound came from the rear side of his Cement Truck. Upon looking back he realised that the cement mixer drum was already been dislodged from the Insured Vehicle. The road was clear at time of the incident. There was no other Motor Vehicle or individual that was involved in the incident. At the time of incident he was driving at a speed of 30km/h. Traffic Police arrived at the scene and advised Mr Satia to make a police report.

16. We did not managed to speak to Mr Satia as he was not in Singapore. However we were able to conduct an interview with Mr N. Stalin, who is the owner of JASS TRADE & SHIPPING PTE LTD, and the employer of Mr Satia. An interview session was set on 05th March 2018 in his office at Blk 25 Jalan Berseh #01-120 Singapore 200025 where we were able to gather further information regarding the incident and also information pertaining to the history of the Insured Vehicle.

17. The Insured Vehicle was purchased as a pre-owned from Alliance Concrete Singapore Pte Ltd (herein referred to as **"Alliance"**) & was registered on 13th April 2015 under Mr N. Stalin's transportation business company "JASS Trade & Shipping Pte Ltd" Co Registration No. 201324379G. Mr Stalin is the sole owner of the company. The company was setup on 2013 with an employee's strength of 7 operations staff. He also owns 7 other Motor Truck which makes the total counts of 8 vehicles including the Insured Vehicle under the cement transfer operations.

18. Operations for cement transfer normally starts from 0800hrs to 2000hrs on a daily basis. Cement Mixer Truck driver will transfer the product from point A to point B as instructed by Alliance's operation's team. An average trips of about 4 to 5 trips for each Cement Mixer Truck daily. A rare occasions that requires the driver to perform up to 7 trips a day. This is a 5 years contract that was offered to JASS Trade & Shipping Pte Ltd by Alliance Concrete Singapore Pte Ltd.

19. As for the interview session Mr Stalin informed that he has been the interpreter for Mr Satia for the past interviews perform by other parties. This is likely due to the incompetency of Mr Satia in communicating in English language. Information gathered to the best of Mr Stalin's recollection. Prior to the incident the driver Mr Satia was driving the Insured Vehicle performing his daily duty of transferring cement product from Alliance Concrete Marina Grove Plant to Bedok Station Plant. After completing loading about approximately 20 tons of cement into the cement mixer drum, he drove off to the said location. It was on Sunday 04th February 2018 at about 12.30pm. The road was clear when the incident happened.

20. Mr Satia claims that he was driving at about 30km/h along Central Boulevard towards Shears Avenue. After turning right about 2 lampposts away, he heard a loud sound coming from the rear portion of the Insured Vehicle. Upon looking behind he noticed that the cement mixer drum had already been dislodged from the Truck left hand side and landed on the road. Part of the cement was observed to be spilled out from the cement mixer drum onto the road. Soon after a mobile Traffic Police arrived at scene & took control of the situation. He advised Mr. Satia to make a report to the insurance with regards to the incident since nobody was injured in the incident.

21. Mr Satia also informed Mr Stalin that he had not experienced any other mechanical problems with the Insured Vehicle till the day of the incident. He also mentioned that there were neither warning lights displayed nor was there an abnormal sound throughout the period he was driving the Insured Vehicle.

22. Mr Leong from 'Leong Workshop' was engaged by Mr Stalin to assists to tow away the Insured Vehicle to other location in order to avoid congestion to other road users. Subsequently the Insured Vehicle & the dislodged cement mixer drum were towed to an open carpark beside Alliance Concrete Marina Grove Plant.

23. Mr Satia together with Mr Stalin went to make a Singapore Accident Statement report at 'VIACOM ASSESSMENT CENTRE' Sin Ming the next day on 05th February 2018 as advised. See photo 35 to 38 below.

Photo 35 shows the open carpark beside Alliance Concrete Marina Grove Plant where the Insured Vehicle was towed.

Photo 36 shows the Alliance Concrete Marina Grove Plant where the Insured Vehicle was towed.

Photo 37 shows Blk 25 Jalan Berseh where JASS Trade & Shipping Pte Ltd located.

Photo 38 shows the office located at Blk 25 #01-120, Jalan Berseh where JASS Trade & Shipping Pte Ltd.

24. In our investigation findings, we found that the Insured Vehicle was being regularly serviced by 'Leong Workshop'. Hence we make an arrangement to conduct an interview with the workshop's owner. An interview session was setup on 06th March 2018 at 6 Defu Lane 12.

25. Mr Leong agreed to the fact that JASS Trade & Shipping was one of his customers that services their vehicles in his workshop. The Insured Vehicle was identified as (936) in their record.

26. With regards to the history and maintenance records of the Insured Vehicle, Mr Leong had mentioned that the last periodical servicing maintenance was sent to his workshop on 09th Aug 2017. He was able to provide us with a document relating to this servicing. Mr Leong showed us a hand written servicing record & also a printed copy. The servicing records does not indicate the details but was informed verbally by Mr Leong that it includes changing of engine oil, oil filter, and operating fluids. Some other ware & tear parts were also replaced in the servicing visit. Refer to invoice 1 below.

Leong Workshop

No.6 Defu Lane 12, Singapore 539615. Tel: 6281 8518 Fax: 6281 8864 Email: jennyskk@hotmail.com
Mr. Leong H/P: 9179 5889 Company Registration No. : 533 800828K

General Repair & Servicing of Cement Mixer & Truck
修理洋灰搅拌车，等等

M/s JASS Trade & Shipping Pte Ltd
86 668 Chander Road, #01-14 Singapore 210668.

Invoice No. : 20916

Date : 09 Aug 2017

Truck No. : WCB911E (936 Alliance)

Attn: Mr. N. Stalin

Item	Description	Qty	Unit Price	Amount (S$)
1.	Servicing (Euro 5)	1 no.	340.00	340.00
2.	Tear & Wear Neck Rubber	1 no.	50.00	50.00
3.	Tear & Wear Bumper Rubber	2 pcs	30.00	60.00
4.	Tear & Wear Signal Light (Rear, Left)	1 no.	25.00	25.00
5.	Greasing	1 no.	25.00	25.00
6.	40km Label	2 pcs	4.00	8.00
	(Singapore Dollars: five Hundred & Eight only.)			
	E & O.E.		**Total:**	**508.00**

Cheques are to be crossed and made payable to **Leong Workshop**

DBS Current Account No. : 023-905361-0

Invoice 1

Photo 39 shows a hand written servicing record for WC8911E (936) on 09th August 2017.

Site Incident Photograph

27. We were able to gather some photographs downloaded from The Straits Times & Channel News Asia online portal at the incident scene before the Insured Vehicle was towed away. We note that the location of the incident was located along Shears Avenue at time of the incident.

28. In general, the information that could be gathered from these photographs had corresponded to the events that were related to us by Mr Stalin. Our close examination of these photographs also showed no other vehicle/individual involved, no unusual foreign material(s) and/or object(s) found on the ground in the immediate area that might contribute to the incident where the Insured Vehicle was positioned. See photos 40 & 41 below.

Cement mixer drum falls off truck in accident at Sheares Avenue

Some of the cement mixture had spilled onto the road, and three out of four lanes on Sheares Avenue had to be closed in the afternoon on Feb 4, 2018. PHOTO: TELEGRAM/SG NO1 ALL IN 1 SHARING / UPDATES

Photo 40 shows the Insured Vehicle with the dislodged of the cement mixer drum along Shears Avenue at time of the incident.

Singapore

Concrete mixer drum falls off in accident at Sheares Avenue

A concrete mixer was involved in an accident along Sheares Avenue on Sunday (Feb 4). (Photo: Facebook / Gary Wu)

04 Feb 2018 06:33PM
(Updated: 04 Feb 2018 07:03PM)

Photo 41 shows the Insured Vehicle with the dislodged of the cement mixer drum along Shears Avenue at time of the incident.

Failure Analysis

29. For this case, the evidence and information gathered such as vehicle service invoice appears to suggest that the incident to the Insured Vehicle does not occurred due to lack of maintenance service/poor maintenance. In this aspect, a few possible causes of failure could have existed. These include mechanical failure in nature of the malfunctioning on the steering system/ weaken suspension, engineering design failure, human error (driver's mistake) and material failure that causes weaken supports on the structure amongst others.

30. With reference to our technical investigation above, we had covered on all technical aspect which includes steering system, braking system, tyres condition & transmission system. It was all observed to be intact, undamaged and unaffected by the accident's impact. Therefore, mechanical failure in nature of the malfunctioning on the steering system/ weaken suspension and all other technical aspect was not likely to be the cause of the incident.

31. As for engineering design failure which was included in our failure analysis elimination process, we had contacted the cement mixer drum manufacturer GETHI Engineering Sdn Bhd which is located in Malaysia, a detailed discussion was arranged over telephone conversation with Mr Pang who are the design engineer for the cement mixer drum. According to Mr Pang, GETHI engineering had produced hundreds of similar drums for the past years. So far, no such incident had ever happened before. However, the results of our discussion were narrowed down focusing on the 02 rear rollers spacing that holds the drum position.

32. It was believe that if the spacing of the 02 rollers were far apart, it would create a better holding position on the truck's structure which can avoid a 'slip off' out of the roller's holding position. If the spacing of the 02 rollers were built closer, it will not able to hold the drum firmly & might cause a 'slip off' out from the roller's track. This urged us to do an investigation on some other manufacturer's roller spacing distance for comparison.

33. We've managed to find other manufacturer's drum rollers for measurement comparison. The measurement was taken from centre to centre of the 02 rollers.
    - Zicom (Japan) – 36 inches
    - Cesco (Australia) – 29 inches
    - Gethi (Malaysia) – 32 inches

34. With these findings, we are of the opinion that the roller spacing does not contributes to the incident. The measurement spacing of the rollers from the Insured Vehicle was found to be in a range of slight difference with other drum roller manufacturer.

Photo 19 shows a measurement on the roller spacing for ZICOM manufacturer. It was measured as 36 inches from centre to centre of the 02 rollers.

Photo 19 shows a measurement on the roller spacing for CESCO manufacturer. It was measured as 29 inches from centre to centre of the 02 rollers.

Photo 19 shows a measurement on the roller spacing for GETHI manufacturer. It was measured as 32 inches from centre to centre of the 02 rollers.

35. As for the human error's aspect, we are looking at any evidence that could lead us to any infringement in the traffic law such as speeding amongst others. Speeding might contributes to the incident where we take vigorous movement might cause 'slip off' to the drum from the holding rollers.

36. We had gathered some information on this aspect via retrieving data from Alliance Concrete GPS department. We set an appointment with Ms Eileen (Admin Manager) & Mr Teh Boon Lai (Logistic Executive) from Alliance Concrete Singapore Pte Ltd. After a short interview with Mr Teh & Ms Eileen on the GPS operations, we are able to track down the speed of the Insured Vehicle at time of the incident. The GPS system was able to record a speed of 47km/h on the Insured Vehicle at time of the incident. The full GPS data recorded it was on the 04th February 2018, time: 12:36:57, Vehicle: MG936, location: Marina Garden Drive: Speed 47km/h. See photo 42 & 43 below.

04-Feb-2018 10:36:58	MG936	Marina Grove Plant (MG), Marina Coastal Expressway	6
04-Feb-2018 10:53:58	MG936	Marina Grove Plant (MG), 15 Marina Grove	2
04-Feb-2018 12:18:57	MG936	Marina Grove Plant (MG), 15 Marina Grove	1
04-Feb-2018 12:20:57	MG936	Marina Grove Plant (MG), 15 Marina Grove	13
04-Feb-2018 12:24:57	MG936	Marina Grove Plant (MG), Marina Coastal Expressway	1
04-Feb-2018 12:26:57	MG936	Marina Grove Plant (MG), Marina Coastal Expressway	3
04-Feb-2018 12:32:57	MG936	Marina Grove Plant (MG), 15 Marina Grove	5
04-Feb-2018 12:33:57	MG936	20 Marina Mail	32
04-Feb-2018 12:35:57	MG936	30 Marina Coastal Drive	40
04-Feb-2018 12:36:57	MG936	Marina Gardens Drive	47
04-Feb-2018 12:53:57	MG936	Downtown Core	2
04-Feb-2018 13:03:57	MG936	Downtown Core	1
04-Feb-2018 13:13:57	MG936	Downtown Core	1
04-Feb-2018 13:23:57	MG936	Downtown Core	1
04-Feb-2018 13:43:57	MG936	Downtown Core	1
04-Feb-2018 13:53:57	MG936	Downtown Core	2
04-Feb-2018 14:03:57	MG936	Downtown Core	1
04-Feb-2018 14:12:50	MG936	Downtown Core	1
04-Feb-2018 14:22:57	MG936	Downtown Core	1
04-Feb-2018 14:32:57	MG936	Downtown Core	3
04-Feb-2018 14:42:57	MG936	Downtown Core	1
04-Feb-2018 15:04:22	MG936	Marina Grove Plant (MG), Downtown Core	1
04-Feb-2018 15:04:57	MG936	Marina Grove Plant (MG), Downtown Core	1
04-Feb-2018 15:14:57	MG936	Marina Grove Plant (MG), Downtown Core	1
04-Feb-2018 15:34:57	MG936	Marina Grove Plant (MG), Downtown Core	1
04-Feb-2018 16:44:57	MG936	Marina Grove Plant (MG), Downtown Core	1

GPS data sheet for Insured Vehicle WC8911E (936)

Photo 42 shows the GPS department at Alliance Concrete where we retrieved speed data of the Insured Vehicle.

Photo 43 shows the GPS department at Alliance Concrete where we retrieved speed data of the Insured Vehicle. The monitor shows the details of the Insured Vehicle.

37. Given the circumstances of incident as reported, the other possibilities of the cause of dislodged cement mixer drum from the Insured Vehicle being due to the material failure that causes weaken supports on the structure would seem likely given that on further investigation to the damaged structure, we found that the bent on the frame structure was in a corroded condition. The corrosion was however covered with thick layers of paint.

38. It was believed that the possibility of the dislodged cement mixer drum was from a material failure which was from a corroded support frame for the purpose of supporting the cement mixer drum. The corrosion (rust) had weaken the material/tensile strength of the support frame over a period of time, ultimately causing the support to give way. See photo 44 & 45 below.

Photo 44 shows the material failure that was believed to cause the drum to give way. It was observed to be in a corroded condition.

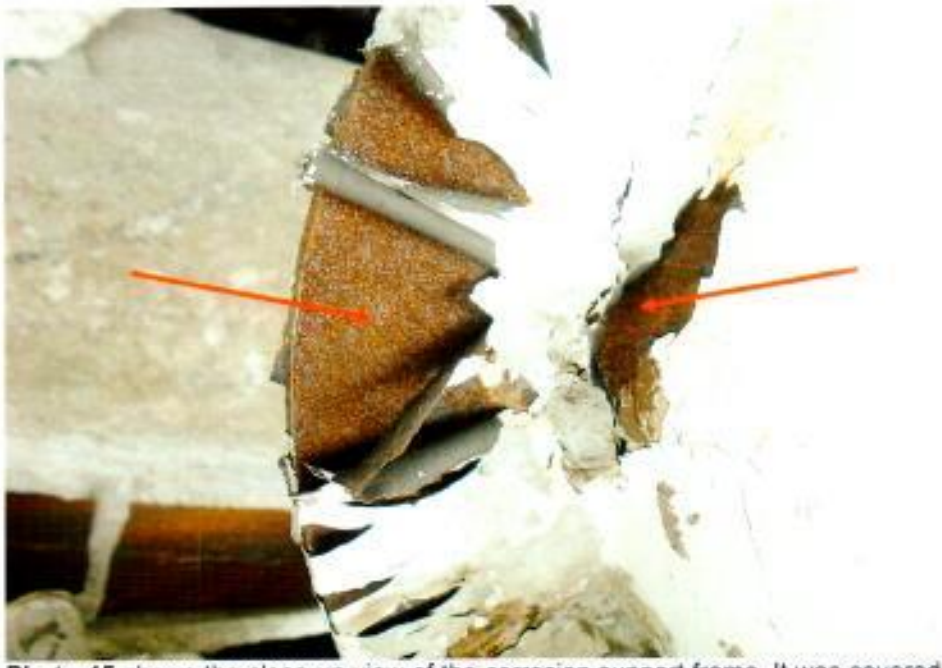

Photo 45 shows the close-up view of the corrosion support frame. It was covered with a thick paint therefore visually we can't see the corroded parts.

39. Our checks with both local and international bodies and associations had revealed that at the time of writing this report, there is no manufacturer recall of mechanical nature to similar make and model vehicle as the Insured Vehicle that may possibly be related to this incident. See search result from LTA below.

Enquiry on Vehicle Recall - Vehicle Specific

* ONLY INFORMATION ON VEHICLE RECALLS SUBMITTED FROM 9 APRIL 2007 IS AVAILABLE

Vehicle Owner Particulars

Owner ID Type:	Company
Owner ID:	4379G

Vehicle Details

Vehicle Registration number:	WC8911E
Make:	ISUZU
Vehicle Model:	CYH52S
Engine No.:	6WG1422730
Chassis No.:	JALCYH52SE7000205

Recall Details

No Recall Detail records

OK

Conclusion

40. We did not find any evidence which had suggested that the cause of the incident to the Insured Vehicle was due to mechanical failure in nature of the malfunctioning on the steering system/ weaken suspension or engineering design failure as discussed in paragraph 29 above.

41. However, having investigated and technically analysed the damages of the incident to the Insured Vehicle, we are of the view that the incident had originated from material failure on the support structure. The cause of the dislodged cement mixer drum from the Insured Vehicle was likely due to a corroded support frame that can't be seen due to a thick paint covering the parts.

42. Our investigations had also revealed that at the time of writing this report, there is no manufacturer recall of mechanical nature to similar make and model vehicle as the Insured Vehicle that may possibly be related to this incident.

Rohaizal A. Rahim
Technical Investigator

Ang Bryan Tani
AMSOE, AMIRTE, AFF SAE, M.MATAI, AFF.Inst.AEA
Senior Technical Investigator
Technical Investigation & Reconstructionist (SAE-A)