



KARCO Engineering, LLC.
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**KARCO Response to
SPECIAL ORDER
INCLUDING THE REQUEST FOR THE PRODUCTION OF DOCUMENTS**

In re:

MY 2008 ZAP Xebra
NHTSA Recall
Nos. 09V-177/12V-230 and 09V-385

Interrogatories:

1. *Describe in detail all testing performed by KARCO on a ZAP Xebra, including but not limited to the date the vehicle(s) was tested, the tests performed, the results of the testing, and whether (and, if so, how) the vehicle was modified and/or adjusted in any way during the course of the testing.*

KARCO performed both visual and performance testing on the Zap Xebra relating to FMVSS 122 on two separate vehicles. The vehicle was initially received for testing in January of 2012. At that time a visual inspection of all brake system components, including warning lights, reservoir caps, brake pads and brake rotors was completed. Once the inspection was complete the vehicle moved on the instrumentation check portion of the testing with no issues occurring. After the instrumentation checks were complete the testing moved on to the First Effectiveness testing, which the vehicle failed repeatedly. After the First Effectiveness failure the vehicle was picked up by Zap personnel and taken away from our property.

A different Zap Xebra was received for testing in May of 2012. As far as we know the changes to the vehicle included the addition of a vacuum brake booster and a different type of brake pad on all wheels. At this time the vehicle was again inspected and the instrumentation checks performed. Once the instrumentation checks were performed the testing moved on to First Effectiveness. Initially the vehicle did not meet the First Effectiveness criteria. Zap requested that KARCO make modifications to the vehicle proportioning valve and pedal adjustment to make the vehicle pass. Through trial and error modifications were made to both adjustments and the vehicle passed First Effectiveness. After the First Effectiveness test the vehicle was put through the burnish process, which included 200 miles of driving with stops every mile. At the completion of the burnish the testing proceeded to the Second Effectiveness. The vehicle could not meet the requirements of the Second Effectiveness test and all subsequent testing was halted.

2. *Has KARCO's testing of the ZAP Xebra concluded? If so, when?*

Testing on the Zap Xebra was halted when the vehicle could not meet the minimum requirements of the Second Effectiveness test. Testing was halted on 6/25/12.

MW



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3. *If KARCO's testing of the ZAP Xebra has not concluded, describe in detail the additional testing KARCO will perform on the vehicle, and the anticipated schedule for such testing. When do you expect it to conclude?*

KARCO's testing of the Zap Xebra concluded on 6/25/12.

4. *Has KARCO performed or is KARCO performing any work for ZAP related to the ZAP Xebra other than testing it to the FMVSS No. 122 braking distance requirements? If yes, describe in detail that work, including whether it has concluded or is ongoing and the date when it concluded or is expected to conclude.*

KARCO is not performing any other work for Zap related to the Zap Xebra other than FMVSS 122 testing of the brake system.

Request for the Production of Documents:

1. *Provide a copy of all documents (including all reports, data, and emails) relating to any testing or other work performed by KARCO related to the ZAP Xebra.*

All documents, including a test report, raw data, and emails, relating to the testing of the ZAP Xebra is included on the accompanying CD (2012-2438). The data was compiled and processed by Matthew Hubbard and Kelsey Chiu. Final compilation was completed on 7/30/12.

2. *Provide a copy of all documents (including emails) reflecting or relating to any communications between ZAP and KARCO (including any officers and/or employees of either company) regarding the ZAP Xebra.*

All available emails relating to the ZAP Xebra between KARCO and ZAP have been included on the accompanying CD (2012-2438). The emails were compiled by Kelsey Chiu. Final compilation was completed on 7/30/12.

A handwritten signature in black ink, appearing to be "MM".



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KARCO Affidavit

I, Michael Dunlap, have undertaken and directed an inquiry reasonably calculated to assure that the answers and production of documents are complete and correct. I have caused the documents of KARCO to be searched diligently for information and documents responsive to this Special Order, and have produced them to NHTSA. The answers to the inquiries provided to NHTSA respond completely and correctly to this Special Order.

A handwritten signature in black ink, appearing to read "MD", written over a horizontal line.

Michael L. Dunlap
Director of Operations, KARCO Engineering, LLC.

7-30-12

Date

A small, handwritten mark or signature in the bottom right corner of the page.