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OFFICE OF
DEFECTS INVESTIGATION

May 27, 2005

Mr. George Person
Chief, Recall Management Division
National Highway Traffic Safety Administration (NHTSA)
400 7th St. SW
Washington, DC
20590

Subject: NHTSA Recall 04V-042 – Resolution Progress Report

Dear Mr. Person,

At the request of your Senior Investigator, Sonny Murianka, I was asked to provide you with a progress report on the resolution for the Center Axle Lock-up issue, which we are experiencing in New York City. Just to recap on the issue at hand, the New York D60HF model buses have been experienced an intermittent issue with getting the center axle brakes to release after the buses have been parked for several hours. This defect potentially effects similar bus models in Minneapolis MN, Des Moines OH and Seattle WA, and all customers (with the exception of Seattle) have reported instances of center axle lock-up at morning pull-out.

Be assured that the issue is still a high priority here and is the subject of a weekly teleconference between Meritor Engineering, NYCTA Technical Services and New Flyer Engineering & Customer Service to discuss progress of testing, and suggested changes to the projects currently on the table. Initially Haldex had been involved in the problem solving process, but we have since determined that the release issue was not related to slack adjuster modification, nor would the incorporation of a different or modified adjuster have an effect.

The most recent conference call discussed two possible options. Meritor believes they are getting close to a solution with the prevention of soap, dirt and moisture intrusion, but all implementations have to be approved by New Flyer engineering to ensure that we are still in compliance with FMVSS 121, as well as be tested by the Tech Services Department of NYCTA before New York approval will be granted. The following is a breakdown of what has occurred to date.

Spring and summer of 2003 – isolated incidents of center axle lock-up are brought to New Flyers attention. Incidents were sporadic in nature and difficult to recreate or capture in a failed condition.

Oct 28, 2003 – Test Report was issued by New Flyer Engineering indicated that lock-up could not be made to occur with the bus in service. Lock-up identified as only occurring on the center axle

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after vehicle is parked for several hours and brake linings are allowed to cool to ambient temperatures. Most likely cause was thought to be corrosion and inadequate lubrication, or, contamination of the brake linings with either soap, dirt, moisture or a combination of all three.

Corrosion and inadequate lubrication of the mechanical components (rollers, anchor pins, etc.) was ruled out shortly after this report.

Jan 6, 2004 – Lock-up occurs on unit 5662 at 126th St. Depot

Jan 8, 2004 – PE 04-003 opened by NHTSA (closed on Apr 30 due to issue of recall notice).

Jan 26, 2004 – New Flyer Issues 573 Report to NHTSA, Safety Recall 04V-042 is opened.

Since the issuing of the 573 Report, many different tests, inspections and trials have occurred, here are some of the highlights:

Arvin Meritor:

- Inspect for condition of brake system components (damage, corrosion, etc.) on buses exhibiting failure;
- Test and monitor lining “stiction” with regards to time to release, temperatures, torque input, dry vs. wet, and application pressures;
- Comparison testing and competitive analysis of MAN LF axle;
- Conduct 121 Dyno testing and field trials of Brake-Pro linings;
- Conduct 121 Dyno testing and field trials of ABEX 1182-95 linings;
- Conduct 121 compliance testing with prototype ABEX MA614 Linings;
- Conduct field trials of non-vented brake drums with New Flyer designed backing plates; and
- Develop and test stronger return springs.

New Flyer:

- Modify and test electrical programming to warn until 85 psi is available to release park brake (flashing amber indicator) and to ensure 105 psi is available in the wet air system tank prior to allowing gear selection and pullout;
- Install and field-test modified Haldex slack adjusters and brake chambers;
- Develop and test wheel lock indicator (ABS equipped buses only) utilizing the exiting components and systems on the bus;
- Improve and field-test brake release timings by incorporating Bendix R-14 or Wabco IR-2 relay valves;
- Improve and field-test lining to drum clearance by converting Haldex slack adjuster from #2 to #4 notch; and
- Design and field-test backing plates to reduce moisture and dirt intrusion between lining and brake.

New York: (as interim solution operators are required to back bus in reverse slightly just prior to parking and applying Park Brake, this is moderately effective.)

- Arrange for buses to be used for testing purposes;
- Review DoT pre-trip inspection;
- Eliminate over adjustment of slack adjusters;
- Ensure rollers and anchor pins are being lubricated during inspections;
- Ensure buses are not equipped with non-OEM aftermarket parts; and
- Train drivers “new interim brake release procedure” due to reprogramming utilizing a flashing amber indicator to show when a minimum 85 psi is being delivered from the treadle.

As of 26 May 2005 we are exploring two possible options to solve the center axle lock-up issue.

The first involves a rework of the center axle involving the installation of a dust shield (which was developed over a full year of prototype testing and modification), the installation of a narrower brake shoes (8" vs. 10") and linings to allow room for the new dust shield, and the installation of a reworked non-vented brake drum for the narrower brake shoes. Drum and shoe components are presently being manufactured for testing on a dynamometer in mid June, with field trials to be carried out in early July 2005.

Components must allow the bus to continue to meet FMVSS 121 and NY DoT specifications (New Flyer requirement) initial calculations support the theory that the system will be compliant.

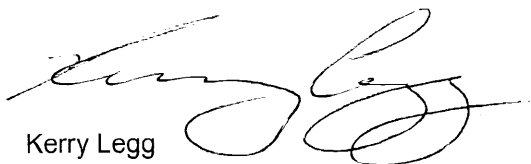
Also the service interval (reline) of the bus brakes must not be reduced (New York requirement) although it is estimated that the reline interval may be reduced by as much as 20% (from 60,000 miles to approx. 48,000 miles). Arvin Meritor will do some in-field examination of shoes ready for reline in New York to determine if the center axle shoes already have a lower overall wear than do the shoes on the rear axle. Meritor does not want the center axle brakes to be the determining factor when it comes to conducting a brake reline.

The second project involves the utilization of the Anti-lock Brake (ABS) system signals, to indicate when a center axle wheel lock-up has occurred during morning pullout. If detected the Programmable Logic Control (PLC) system would then engage the interlocks to stop the bus and prevent the operator from driving through brake application. This would only work for buses that currently have ABS systems installed; those without ABS would require additional components to be added to get a similar result.

Although this project would prevent the operation of a bus with a lock-up, it does not prevent the lock-up from occurring, and indication can only be achieved above the 5 mph threshold of the ABS system. This project is presently being reviewed by New Flyer Engineering, to determine if it is worthwhile to continue pursuing this course.

I admit that the resolution for this issue has taken longer than expected, understand that it is somewhat daunting to have so many different organizations involved, even so, I was quite surprised by the amount of cooperation which is occurring between the different engineering groups. We hope to have a working solution to this issue short order so that the fleet retrofit(s) can be organized.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kerry Legg', with a stylized, flowing script.

Kerry Legg
Safety & Compliance Manager
New Flyer Industries Limited

cc: Hans Peper, Cliff Murray, Don Bean, Scott Halbesma, Alan Farrant, Derek Ohta