



Handwritten: 12/19/07

November 30, 2007

Mr. Richard Boyd
Office of Defects Investigation
National Highway Traffic Safety Administration
1200 New Jersey Ave
Washington DC 20590

PE07-050
NVS-214sjm

Dear Mr. Boyd,

You will find below Blue Bird's response to NHTSA's Preliminary Evaluation (PE07-050) regarding broken air line fittings at the dashboard on 2006-2007 model year Blue Bird All American RE style buses. As required, Blue Bird has provided numbered responses repeating NHTSA's request verbatim before the response.

1. Provide a table listing by model year, model, build date and manufacturing location, the total number of subject vehicles that Blue Bird has manufactured for sale or lease in the United States. Provide the table in Excel, or a compatible format, entitled, "Response to No. 1, POPULATION." **Also provide the same information on any other models the same air line configuration.**

Blue Bird's Response to No. 1.

See attached Excel file titled "Response to No. 1".

2. Identify all vehicles to which Blue Bird has performed any field repairs/retrofit procedure by repair date, model year, make, model, date of sale, owner/fleet name, address, telephone phone number, contact representative, and reason for offering the retrofit. Provide a table in Excel, or a compatible format, entitled, Response No. 2, "Fleet Retrofit."

Blue Bird Response to No. 2:

Blue Bird has not conducted any field repairs/retrofits.

3. State the total number of each, by calendar year and month and **provide a separate copy** of the following, received by Blue Bird, or of which Blue Bird is otherwise aware, separated by fleets/owner, which relate to, or may relate to, the alleged defect in the subject vehicles:
- consumer complaints, including those from fleet operators;
 - field reports, including dealer field reports;
 - property damage claims;
 - third-party arbitration proceedings where Blue Bird is or was a party to the arbitration; and,
 - lawsuits, both pending and closed, in which Blue Bird /purchaser is or was a defendant or codefendant.

Multiple incidents involving the same vehicle are to be counted separately. Multiple reports of the same incident are also to be counted separately (i.e., a consumer complaint and a field report involving the same incident in which a crash occurred are to be counted as a crash report, a field report and a consumer complaint).

In addition, for item "c" provide a summary description of the alleged problem and causal and contributing factors and Blue Bird's assessment of the problem, with a summary of the significant underlying facts and evidence. Also for items "d and "e, identify the parties to the action, as well as the caption, court, docket number, and date on which the complaint or other document initiating the action was filed.

Provide the table in Excel, or a compatible format, entitled, "Response No. 3 COMPLAINT DATA."

Blue Bird Response to No. 3:

- None.
 - None
 - None
 - None
 - None
4. Separately, for each item (complaint, report, claim, notice, or matter) within the scope of your response to Request No. 3, provide the following information:
- Blue Bird's file number or other identifier used;
 - the category of the item, as identified in Request No.3 (i.e., consumer complaint, field report, etc.);
 - vehicle owner or fleet name (and fleet contact person), address, and telephone number;
 - vehicle's VIN and body or serial number;
 - vehicle's make, model and model year;

- f. vehicle's mileage at time of incident;
- g. incident date;
- h. report or claim date;
- i. vehicle Build date
- j. whether property damage is alleged;
- k. number of alleged injuries, if any;
- l. number of alleged fatalities, if any.
- m. concern stated by customer, did the buzzer and lamp activate;
- n. comment and final resolution (identify by part number what component was replaced, if any), by dealer/technician relating to claim and/or repair; and
- o. Blue Bird's assessment of the claim.

Provide this information in Excel, or a compatible format, entitled "Response to No. 4 CLAIM DATA."

Blue Bird Response to No. 4 a. through o:

None

5. State, by make, model and model year, a total count for all of the following categories of claims, collectively, that have been paid by Blue Bird to date that relate to, or may relate to, the alleged defect in the subject vehicles: **warranty claims; extended warranty claims;** claims for good will services that were provided; field, zone, or similar adjustments and reimbursements; and warranty claims or repairs made in accordance with a procedure specified in a technical service bulletin or customer satisfaction campaign. Separately, provide a copy of each claim.

Also, separately, for each such claim, state the following information:

- a. Blue Bird's claim number;
- b. vehicle owner or fleet name (and fleet contact person) and telephone number;
- c. VIN;
- d. repair date;
- e. vehicle mileage at time of repair;
- f. repairing dealers or facility's name, telephone number, city and state or ZIP code;
- g. labor operation number;
- h. problem code;
- i. replacement part number(s) and description(s);
- j. concern stated by customer, did the buzzer and warning lamp activate;
- k. comment and resolution (identify what component was replace including part number), if any, by dealer/technician relating to claim and/or repair; and
- l. Blue Bird's assessment of the claim, including reason for granting claim.
- m. category, goodwill, warranty, etc.

Also, provide this information in Excel, or a compatible format, entitled "Response to No.5 CLAIM PAID DATA."

Produce copies of all documents related to each item within the scope of Request No.5. Organize the documents separately by category (i.e., consumer complaints, field reports, etc.) and describe the method Blue Bird used for organizing the documents. *Any duplicate failure should be counted separately.*

Blue Bird Response to No 5:

None

6. For each claim denied in question number 3 and 5, provide the following information:
- Blue Bird 's claim number and reason for the claim being denied;
 - vehicle owner or fleet name (and fleet contact person) and telephone number;
 - VIN, body or serial number;
 - concern stated by customer, did the buzzer and warning lamp activate;
 - how was the bus repaired and date of repair;
 - vehicle mileage at time of repair;
 - repairing dealer's or facility's name, telephone number, city and state or ZIP code;
 - labor operation number;
 - problem code;
 - replacement part number(s) and description(s); and
 - comment, if any, by dealer/technician relating to claim and/or repair.

Provide this information in Excel, or a compatible format, entitled "Response to No.6 CLAIM DENIED DATA."

Blue Bird Response to No 6:

No claims have been denied.

7. Describe in detail the search criteria used by Blue Bird to identify the claims identified in response to Request No.3 and 5, including the labor operations, problem codes, part numbers and any other pertinent parameters used. Provide a list of all labor operations, labor operation descriptions, problem codes, and problem code descriptions applicable to the alleged defect in the subject vehicles.

Blue Bird Response to No. 7:

The following criteria was used to identify claims related to the alleged defect on the subject buses.

Model years: 2006 and 2007

Model: All American RE

Part number: 0108128 Fitting, Tubing, 1/4in

8. Provide a detailed drawing depicting the brake hoses routing from the compressor to the back of the dash on the subject buses. Identify the size and dimension of the subject hoses, fitting and all necessary hardware.

Blue Bird Response to No. 8:

See attached drawing number D0117711.

9. Starting from the first claim, or the time Blue Birds first became aware of this issue to present, provide a detailed chronology of all events regarding the subject defect. Include all information including knowledge of the first failure/claim, internal meetings, meetings with the fitting manufacturer, other manufacturers, and fleet owners. Describe how Blue Bird first became aware of the alleged defect and state the date on which Blue Bird first became aware of the possibility of the alleged defect.

Blue Bird Response to No 9:

In late 2006 calendar year , several dealers contacted Blue Bird's Customer Service to request the part number for the quick disconnect air line fitting on the back of the dash. The part number had been set up on June 21, 2006, but some of our dealers were not aware of the number.

10. State the new warranty coverage offered by Blue Bird regarding the subject hose/fitting on the subject buses. Describe any extended warranty coverage option(s) related to the alleged defect that Blue Bird offered for the subject vehicles related to the alleged defect. Also, provide an exemplar of the fitting and a section of the air brake hoses.

Blue Bird Response to No 10:

Blue Bird has not offered any new or extended warranty coverage for replacement dash air fittings. A sample of the air fittings and air tubing are enclosed in a separate package.

11. Produce copies of all service bulletins, warranty, and other documents that relate to, or may relate to, the alleged defect in the subject buses, that Blue Bird has issued to any manufacturer, dealers, regional or zone offices, field offices, fleet purchasers, or other entities. This includes, but is not limited to, bulletins, advisories, informational documents, training documents, or other documents or communications, with the exception of standard shop manuals. Also, state the date in which these documents were issued, to whom, and the date they were submitted to NHTSA in accordance with applicable regulations, such as CFR. 579.5. Also, include the latest draft copy of any communication that Blue Bird is planning to issue. Separately, identify and describe what precipitated each document.

Blue Bird Response to No. 11:

Blue Bird has not issued any service bulletins, warranty or other responsive documents related to the alleged defect.

12. Describe all assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries and/or evaluations (collectively, "actions") that relate to, or may relate to, the alleged defect in the subject buses that have been conducted, are being conducted, are planned, or are being planned by, or for, and including any actions conducted by Blue Bird. For each such action, provide the following information:

- a. action title or identifier;
- b. the actual or planned start date;
- c. the actual or expected end date;
- d. brief summary of the subject and objective of the action;
- e. engineering group(s)/supplier(s) responsible for designing and for conducting the action; and,
- f. a brief summary of the findings and/or conclusions resulting from the action.

Blue Bird Response to No 12:

As a result of telephone conversations with the Agency, Blue Bird engineering initiated a review of the air flow rates at the quick disconnect fitting versus the air flow rate of the air compressor supplying air to the brake system. Attached are emails from Blue Bird engineering describing the findings.

13. For each action identified, provide copies of all documents related to the action, regardless of whether the documents are in interim, draft, or final form. Organize the documents chronologically by action date.

Blue Bird Response to No. 13:

See attached emails from Blue Bird engineering regarding air line flow rates.

14. Describe all modifications or changes made by Blue Bird, or on behalf of Blue Bird in the design, material composition, manufacture, quality control, supply, or installation of the subject air brake hose/fitting installed in the subject buses, from the start of the model year of the subject vehicles to present date, which relate to, or may relate to, the alleged defect in the subject buses. For each such modification or change, provide the following information:

- a. the date or approximate date on which the modification or change was incorporated into the buses;
- b. a detailed description of the modification or change;
- c. the reason(s) for the modification or change;
- d. the part numbers (service and engineering) of the original component;
- e. the part number (service and engineering) of the modified component;
- f. whether the original unmodified component was withdrawn from production and/or sale, and if so, when;
- g. when the modified component was made available as a service component; and,

- h. whether the modified component can be interchanged with earlier production components.

Also, provide the above information for any modification or change that Blue Bird is aware of which may be incorporated into vehicle production within the next 120 days.

Blue Bird Response to No. 14:

Blue Bird has not made any design changes to the affected components. A review of the installation on the production line found the airlines were installed properly.

15. Furnish Blue Bird's assessment of the alleged defect in the subject vehicle including:

- a. the causal or contributory factor(s);
- b. the failure mechanism(s);
- c. the failure mode(s);
- d. the risk to motor vehicle safety that it poses; and
- e. what warnings, if any, the operator and the other persons both inside and outside the vehicle would have that the alleged defect was occurring or subject component was malfunctioning.

Blue Bird Response to No. 15:

- a. The air line may have been installed at an angle instead of being perpendicular to the air fitting.
- b. Side to side pressure of the air line against the fitting.
- c. The plastics portion of the air line fitting breaks.
- d. Based on the results of the calculations provided in "Response to No. 12", failure of the 1/4' dash air line does not pose an unreasonable risk to motor vehicle safety.
- e. At the time of separation, the sound of escaping air is heard. In addition, when the air pressure is interrupted at the dash gauge sensor, the warning alarm and light are immediately activated to alert the driver. However, air pressure in the spring brake system remains at a level that the service brakes will continue to operate normally.

Note: Failures occurred outside Blue Bird's warranty. A search of warranty claims on the subject vehicles for the subject component (part number 0108128) found no claims in our warranty system.

16. Furnish a copy of all documents not specifically requested herein, which Blue Bird believes are relevant to, or which were used in formulating its assessment of, the alleged defect. Identify what action Blue Bird intends to take on this issue.

Blue Bird Response to No. 16:

No other documents were identified.

17. Identify what action Blue Bird intends to take in this matter.

Blue Bird Response to No. 17:

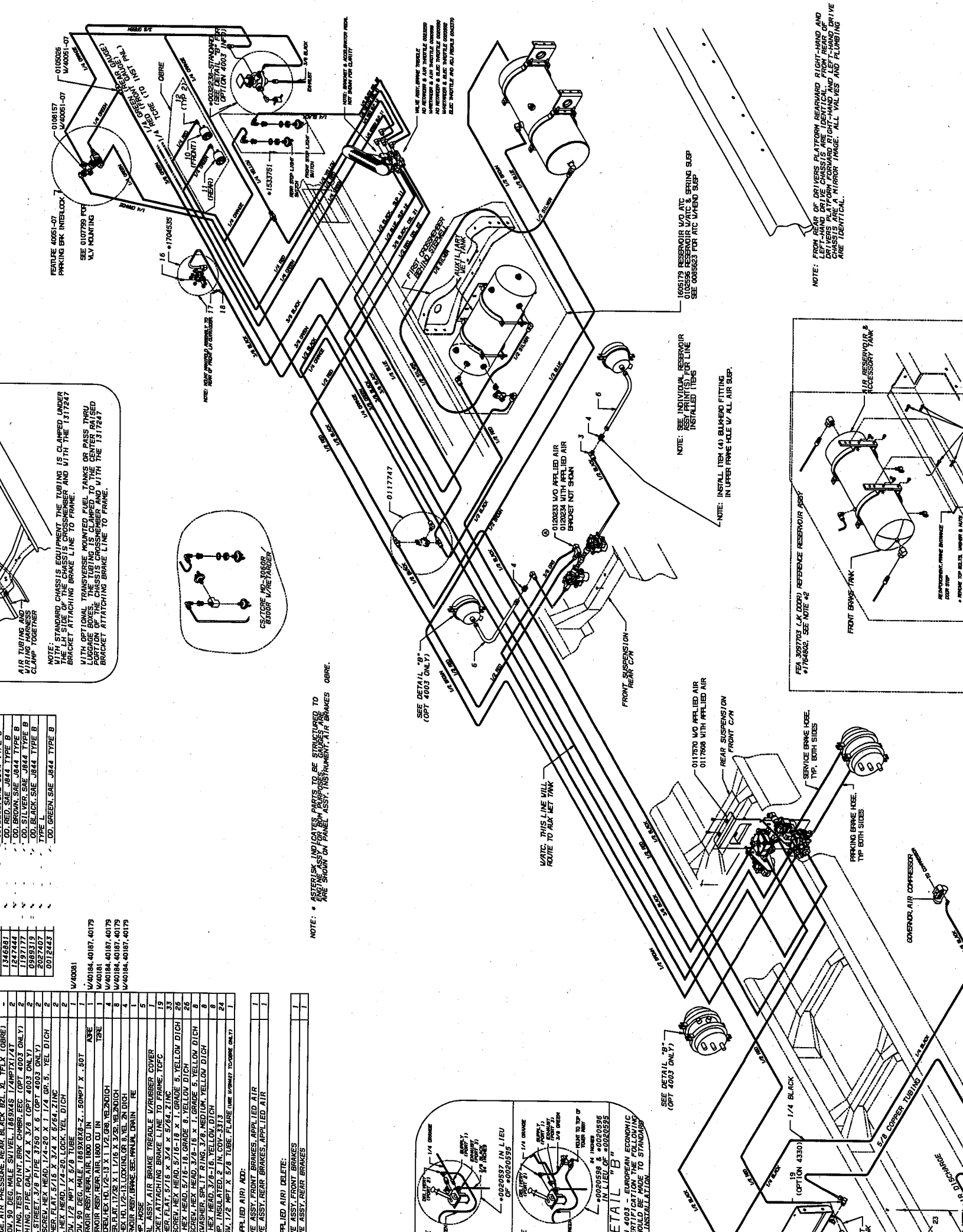
Blue Bird does not plan to take any further action at this time.

Should you have any questions regarding our responses to this inquiry you may contact me at 478-822-2242.

Sincerely,

A handwritten signature in black ink, appearing to read "Bill Coleman". The signature is written in a cursive, flowing style.

Bill Coleman
Corporate Recall Administrator
Blue Bird Corporation

[illegible]

NOTE: FROM REAR OF DRIVERS PLATFORM REARWARD RIGHT-HAND AND LEFT-HAND DRIVE CHASSIS ARE IDENTICAL. FROM REAR OF DRIVERS PLATFORM FORWARD RIGHT-HAND AND LEFT-HAND DRIVE CHASSIS ARE A MIRROR IMAGE. ALL VALVES AND PLUMBING ARE IDENTICAL.

1605179 RESERVOIR W/O ATC
0102596 RESERVOIR W/ATC & SPRING SUSP
SEE 0085623 FOR ATC V/HEND SUSP

NOTE: SEE INDIVIDUAL RESERVOIR ASST PRINT(S) FOR LINE INSTALLED ITEMS

NOTE: INSTALL ITEM (4) BULKHEAD FITTING IN UPPER FRAME HOLE W/ ALL AIR SUP.

FEA 3097703 (JK DOOR) REFERENCE RESERVOIR ASBY

AIR RESERVOIR & ACCUMULATOR TANK

FRONT BRAKE TANK

GOVERNOR, AIR COMPRESSOR

CHARGE

NHTSA PE 07-050

Response to No.1 "Population"-Subject Buses

Model	Model Year		
All American RE	2006	2007	Total
	325	915	1,240

Response to No 1 "Population"-Other Models

[illegible]

Coleman, Bill

From: Stevens, Ivan
Sent: Tuesday, November 13, 2007 2:47 PM
To: Coleman, Bill
Subject: RE: Air line Flow Rates

Wabco 318 Dis-Charge fitting Orifice: 0.685"

Cummins Fitting Area: $A_{sqft} = (3.1416 * ((0.685/2)*(0.685/2)))/144$
 $= 0.00256$

1/4" Eclipse Air line Area: $A_{sqft} = (3.1416 * ((0.170/2)*(0.170/2)))/144$
 $= 0.000158$

1/2" Eclipse Air line Area: $A_{sqft} = (3.1416 * ((0.376/2)*(0.376/2)))/144$
 $= 0.000771$

FPM (Cummins Wabco 318 compressor): $FPM = 17cfm/0.00256sqft$
 $= 6640$

1/4" Air line CFM: $0.000158 * 6640 = 1.0466cfm$

1/2" Air line CFM: $0.000771 * 6640 = 5.1194cfm$

Formulas cited from: <http://www.scientifix.net/air-flow-conversions.html>

Wabco compressor specs: From Blue Bird data pages

Eclipse Air line specs: [http://hydraulics.eaton.com/synflex/media/SHS014\(EclipseAirBrakeTubing\).pdf](http://hydraulics.eaton.com/synflex/media/SHS014(EclipseAirBrakeTubing).pdf)

IVAN B. STEVENS
Prj. Eng.
Blue Bird Body. Co.

From: Coleman, Bill
Sent: Tuesday, November 13, 2007 2:05 PM
To: Stevens, Ivan
Subject: RE: Air line Flow Rates

Ivan,

Thanks, this is a big help. I would like to see the actual data.

Bill

From: Stevens, Ivan
Sent: Tuesday, November 13, 2007 1:47 PM
To: Coleman, Bill
Subject: Air line Flow Rates

Bill

11/30/2007

Per our conversation I have calculated the potential flow rates of the 1/2" supply line vs 1/4" air line which is used on the primary & secondary air gauges to show that a 1/4" line cannot deplete the air system to cause either an unsafe operating condition thus implying that a vehicle that the vehicle's air loss would activate the spring brakes. My findings found that the CFM's for the 1/4" line where 1.0466 vs 5.1194 CFM's for the 1/2" line to create a 5 to 1 ratio in favor of the 1/2" line. This calculation was based on: **Cummins ISB07 (w/ option CP-9573) WABCO 318 17cfm @ 2400 rpm**. If you would like a copy of the actual data please let me know.

Caculation:

Area (Orifice of Compressor Discharge fitting): **Area sqft (A)=(Pi x R²)/144 (Pi=3.1416)**
CFM (Air flow potential of given air line): **Cubic Feet Per Minute (CFM)= A x FPM**

Ivan B. Stevens
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