

December 21, 2007

George Person  
Head-Recall Management Division  
US DOT-National Highway Traffic Safety Administration  
Office of Defects Investigation (NBS-215)  
400 - 7th Street SW  
Washington, DC 20590

08V-008  
(15 pages)

Re: Gillig Safety Recall - Graham White QBA15 Air Dryer

Dear Mr. Person:

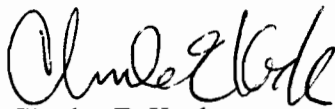
This letter is written to inform you of Gillig's intention to notify customers of a potential safety defect related to the installation a Graham White QBA15 air dryers in Gillig buses manufactured in 2006 and 2007. The recall effects 165 buses and 84 parts sold in the after-market.

Graham White discovered the defect which relates to the electronic control module of the air dryer.

Attached is Gillig's 573 Report. If you have any questions please give me a call at 510-264-5031 or e-mail [chuck.koske@gillig.com](mailto:chuck.koske@gillig.com)

Sincerely,

**GILLIG CORPORATION**



Charles E. Koske  
Senior Vice President Engineering

CEK/vo  
Attachment

cc:: Robert Birdwell  
Steven R. Enochian

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DEFECTS INVESTIGATION  
RECALL MGMT DIV.

Safety Defect and Noncompliance Report Guide for Vehicles  
**PART 573 Defect and Noncompliance Report**<sup>1</sup>

**On December 17, 2007 Gillig Corporation decided that a defect which relates to motor vehicle safety) exits in the motor vehicles listed below, and is furnishing notification to the National Highway Traffic Safety Administration in accordance with 49 CFR Part 573 Defect and Noncompliance Reports.**

**Date this report was prepared:** December 20, 2007

**Furnish the manufacturer's identification code for this recall (if applicable):** N/A

**1. Identify the full corporate name of the fabricating manufacturer of the vehicle being recalled. If the recalled vehicle is imported, provide the name and mailing address of the designated agent as prescribed by 49 U.S.C. §30164.**

Gillig Corporation Hayward, California

**Identify the corporate official, by name and title, whom the agency should contact with respect to this recall.**

Charles E. Koske Sr. Vice President

**Telephone Number:** 510-264-5031 **Fax No.:** 510-264-3897

**Name and Title of Person who prepared this report.**

Charles E. Koske

Sr. Vice President

Signed:



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<sup>1</sup> Each manufacturer must furnish a report, to the Associate Administrator for Safety Assurance, for each defect or noncompliance condition which relates to motor vehicle safety.

This guide was developed from 49 CFR Part 573, "Defect and Noncompliance Reports" and also outlines information currently requested. Any questions, please consult the complete Part 573 or contact Mr. Jon White at (202) 366-5227 or by FAX at (202) 366-7882.

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**I. Identify the Vehicle Models Involved in the Recall**

**2. Identify the Vehicles Involved in the Recall, for each make and model or applicable vehicle line (provide illustrations or photographs as necessary to describe the vehicle), provide:**

**Make(s):** Gillig Corp    **Model Years Involved:** 2006-2007    **Model(s):** Phantom and Low Floor

**Production Dates: Beginning:** 7/10/2006    **Ending:** 5/21/2007

**VIN Range: Beginning:**

**Vehicle Type:** Bus    **Bodystyle:** High floor & low floor bus

Additionally, Graham White air dryers were sold thru Gillig's aftermarket parts department.

**Descriptive information which characterizes/distinguishes the recalled vehicles from those model vehicles not included in the recall:**

Gillig Phantom and low floor bus models specified with the Graham White QBA15 air dryer equipped with the EC15 electronic control built between the dates provided by Graham White's 573 report.

**Identify the approximate percentage of the production of all the recalled models manufactured by your company between the inclusive dates of manufacture provided above, that the recalled model population represents. For example, if the recall involved Widgets equipped with certain items of equipment from January 1, 1996 through April 1, 1997, then what was the percentage of the recalled Widgets of all Widgets manufactured during that time period.**

100% of the identified population

**II. Identify the Recall Population**

**3. Furnish the total number of vehicles recalled potentially containing the defect or noncompliance.**

<b><u>Model</u></b>	<b><u>Year</u></b>	<b><u>Number of Vehicles Potentially Involved</u></b>
Phantom	2006-2007	3
Low Floor	2006-2007	162
Aftermarket Parts	2006-2007	84

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**Total Number Potentially Affected by the Recall:**

249

4. **Furnish the approximate percentage of the total number of vehicles estimated to actually contain the defect or noncompliance:**

100%

**Identify and describe how the recall population was determined--in particular how the recalled models were selected and the basis for the beginning and final dates of manufacture of the recalled vehicles:**

Per Graham White's form 573 report the air dryer suspect population was manufactured from July 11, 2006 until December 20, 2006. Gillig identified a population of all buses built from July 1, 2006 until we stopped installing the QBA15 in April 2007.

### **III. Describe the Defect or Noncompliance**

5. **Describe the defect or noncompliance. The description should address the nature and physical location of the defect or noncompliance. Illustrations should be provided as appropriate.**

See attached Graham White 573 Defect and Noncompliance report- issue centered on the electronic control module malfunctioning.

**Describe the cause(s) of the defect or noncompliance condition.**

The Graham White 573 report claims a change was made to the electronic control module circuit in July 2006 that introduced a defect to a switching transistor.

**Describe the consequence(s) of the defect or noncompliance condition.**

The Graham White 573 report states that if malfunction continues over time water can accumulate in the air system.

**Identify any warning which can (a) precede or (b) occur.**

Graham White's 573 report states that the air dryer audible expulsion of air and water would be absent and there would be water in air tanks.

**If the defect or noncompliance is in a component or assembly purchased from a supplier, identify the supplier by corporate name and address.**

Graham White Manufacturing Company  
1209 Colorado Street  
P.O. Box 1099  
Salem, Va 24153

**Identify the name and title of the chief executive officer or knowledgeable representative of the supplier:**

Leonard Wedge  
Manager of Engineering

### **IV. Provide the Chronology in Determining the Defect/Noncompliance**

*If the recall is for a defect, complete item 6, otherwise item 7.*

- 6. With respect to a defect, furnish a chronological summary (including dates) of all the principle events that were the basis for the determination of the defect. The summary should include, but not be limited to, the number of reports, accidents, injuries, fatalities, and warranty claims.**

See attached Graham White form 573 report. Gillig received the 573 report from Ric Willard at NHTSA on 12/14/2007. Graham White didn't send notification to Gillig manufacturing and did not send the 573 report. They sent a customer recall letter to Gillig's parts division.

- 7. With respect to a noncompliance, identify and provide the test results or other data (in chronological order and including dates) on which the noncompliance was determined.**

Graham White didn't report anything in this portion of their 573 report.

#### **V. Identify the Remedy**

- 8. Furnish a description of the manufacturer's remedy for the defect or noncompliance. Clearly describe the differences between the recall condition and the remedy.**

See Graham White supplied information on their 573 report—they are replacing the electronic control module timer with an improved design.

**Clearly describe the distinguishing characteristics of the remedy component/assembly versus the recalled component/assembly.**

Graham White's 573 report states all new timers are marked with a "C" or "G". They also stated future timers would be potted in a different but unspecified color.

**Identify and describe how and when the recall condition was corrected in production. If the production remedy was identical to the recall remedy in the field, so state. If the product was discontinued, so state.**

Graham White's 573 report states that all production timers shipped beginning on 12/23/2006 have the improved design.

#### **VI. Identify the Recall Schedule**

**Furnish a schedule or agenda (with specific dates) for notification to other manufacturers, dealers/retailers, and purchasers. Please, identify any foreseeable problems with implementing the recall.**

Gillig plans to begin customer notification within 5 days of receipt of a recall number and review of our draft customer recall letter.

#### **VII. Furnish Recall Communications**

**9. Furnish a final copy of all notices, bulletins, and other communications that relate directly to the defect or noncompliance and which are sent to more than one manufacturer, distributor, or purchaser. This includes all communications (including both original and follow-up) concerning this recall from the time your company determines the defect or noncompliance condition on, not just the initial notification. *A DRAFT copy of the notification documents should be submitted to this office by Fax (202-366-7882) for review prior to mailing.***

**Note that these documents are to be submitted separately from those provided in accordance with Part 573.8 requirements.**

*The Privacy Act of 1974 - Public Law 93-579, As Amended: This information is requested pursuant to the authority vested in the National Highway Traffic Safety Act and subsequent amendments. You are under no obligation to respond to this questionnaire. Your response maybe used to assist the NHTSA in determining whether a manufacturer should take appropriate action to correct a safety defect. If the NHTSA proceeds with administration enforcement or litigation against a manufacturer, your response, or statistical summary thereof, may be used in support of the agency's action*

Safety Defect and Noncompliance Report Guide for Equipment  
PART 573 Defect and Noncompliance Report<sup>(1)</sup>

On February 8, 2007 Graham White Manufacturing decided that a defect which relates to motor vehicle safety exists in items of motor vehicle equipment listed below, and is furnishing notification to the National Highway Traffic Safety Administration in accordance with 49 CFR Part 573 Defect and Noncompliance Reports.

Date this report was prepared: 02/12/07

Furnish the manufacturer's identification code for this recall (if applicable):

1. Identify the full corporate name of the fabricating manufacturer/brand name/trademark owner of the recalled item of equipment. If the recalled item of equipment is imported, provide the name and mailing address of the designated agent as prescribed by 49 U.S.C. §30164.

Graham White Manufacturing Company  
1209 Colorado Street  
P.O. Box 1099  
Salem, VA 24153

Identify the corporate official, by name and title, whom the agency should contact with respect to this recall. Leonard Wedge

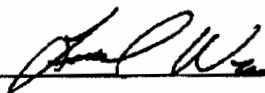
Telephone Number: 540-387-5600 Fax No.: 540-387-5697

Name and Title of Person who prepared this report.

Leonard Wedge

Manager of Engineering

Signed: \_\_\_\_\_



OPERATIONAL TESTS

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## **I. Recalled Items of Equipment**

**2. Identify the Items of Equipment Involved in this Recall, for each make and model or applicable item of equipment product line (provide illustrations or photographs as necessary to describe the item of equipment), provide:**

**Generic name of the item:** Air Dryer and Air Dryer replacement Electronic Control Module

**Make:** Graham White                      **Model:** QBA15

**Part Number:** QBA15                      **Size:** 17.00 X 12.5 X 8.75

**Function:** To remove the liquid oil and water and reduce the relative humidity of the air in the compressed air system.

**Model Years Involved:** Manufactured between 07/11/06 and 12/20/06

**Other information which characterizes/distinguishes the items of equipment to be recalled:** None

**Make:** Graham White                      **Model:** Electronic control module kit

**Part Number:** EC15                      **Size:** 4.5 x 2.25 x 2.5

**Function:** A kit to replace existing electronic control module on the QBA15 series air dryers. Kit includes module and o-rings.

**Model Years Involved:** Manufactured between 07/11/06 and 12/20/06

**Other information which characterizes/distinguishes the items of equipment to be recalled:** None

**Identify the approximate percentage of the production of all the recalled models manufactured by your company between the inclusive dates of manufacture provided above, that the recalled model population represents. For example, if the recall involved Widgets equipped with certain items of equipment from January 1, 1996, through April 1, 1997,**

**then what was the percentage of the recalled Widgets of all Widgets manufactured during that time period.**

The recall population includes 100% of QBA15 series air dryers and EC15 electronic control module replacement kits shipped between 07/11/06 and 12/20/06.

## **II. The Recall Population**

**3. Furnish the total number of items of equipment recalled potentially containing the defect or noncompliance.**

**Number of Items**

**Model Year Potentially Involved:**

All dryers and electronic control modules shipped between July 11, 2006 and December 20, 2006

**Total Number Potentially Affected by the Recall:**

QBA15 Series Air Dryers (new and reconditioned): 1,749

EC15 Electronic Control Module Kits: 820

**4. Furnish the approximate percentage of the total number of items of equipment estimated to actually contain the defect or noncompliance:**

100% of QBA15 Series Air Dryers and EC15 Electronic Control Modules shipped between 7/11/06 and 12/20/06 contain the defect.

**Identify and describe how the recall population was determined--in particular how the recalled models were selected and the basis for the beginning and final dates of manufacture of the recalled items of equipment:**

Defect is related to design change in timer circuit that was implemented in July of 2006 and discontinued in December of 2006.

### **III. The Defect or Noncompliance**

**5. Describe the defect or noncompliance. The description should address the nature and physical location of the defect or noncompliance. Illustrations should be provided as appropriate.**

The defect is in the electronic controls module that controls the switching of the air dryer from drying to regeneration. The air dryer is located in the compressed air system that supplies air to the air brake system. The air dryer is mounted on the frame of the bus. The electronic control module is mounted on the rear of the air dryer.

**Describe the cause(s) of the defect or noncompliance condition.**

A change was made to the electronic control module circuit in July 2006 to improve the resistance to water ingress. At the same time the circuit was changed to improve low voltage pickup of the solenoid valves. The circuit contains a transorb for clamping transient voltage spikes. The circuit change left a switching transistor susceptible to transient voltages outside the range of the transorb.

**Describe the consequence(s) of the defect or noncompliance condition.**

Failure of the electronic controls module circuit will cause the air dryer to stop functioning leading to passing of wet air into the air receiver tank downstream of the air dryer. Proper operation of the QBA series twin tower air dryer results in dry receiver tanks. Successful operation of the QBA15 air dryer has led many operating authorities to abandon the operating practice of checking the air tanks for water on a daily basis. If the dryer continues to malfunction over an extended period of time excessive amounts of water can accumulate in the air system.

**Identify any warning which can (a) precede or (b) occur.**

If the air dryer is not working the audible expulsion of air and water from the air dryer every one (1) minute will be absent. A further warning is the presence of water in the downstream receiver tanks.

**If the defect or noncompliance is in a component or assembly purchased from a supplier, identify the supplier by corporate name and address.**

The timer modules are supplied by:

Cannfield Industries, Inc.  
8510 Foxwood Court  
Youngstown, OH 44514

**Identify the name and title of the chief executive officer or knowledgeable representative of the supplier:**

John Rasmussen  
CEO

330-758-8299

#### **IV. The Chronology in Determining the Defect/Noncompliance**

*If the recall is for a defect, complete item 6, otherwise item 7.*

**6. With respect to a defect, furnish a chronological summary (including dates) of all the principle events that were the basis for the determination of the defect. The summary should include, but not be limited to, the number of reports, accidents, injuries, fatalities, and warranty claims.**

In September and October of 2006 there were reports of electronic control module failures. These reports were sporadic and we had difficulty getting modules back for evaluation. In late November there was a rash of module failures reported from several customer locations. At this time we were able to

get failed modules in for evaluation. On 11/30/06 and 12/05/06 the electronic control module supplier visited customer sites and instrumented buses to look for transient voltages that could have led to the failures observed. The buses at both locations were operated through as many scenarios as possible. In neither case were they able to detect any transient voltages. Further lab testing revealed the failures were reproduced with transient voltages in the 48-53 VDC range. A re-design of the circuit was implemented at that time. A full complement of lab testing was successfully completed and on 12/06/06 three (3) prototype timers were installed on buses in revenue service for field evaluation.

**7. With respect to a noncompliance, identify and provide the test results or other data (in chronological order and including dates) on which the noncompliance was determined.**

#### **V. The Remedy**

**8. Furnish a description of the manufacturer's remedy for the defect or noncompliance. Clearly describe the differences between the recall condition and the remedy.**

The supplier's solution for the defect is to change the value of the transorb in the circuit to maintain the current to a value within the operating capabilities of the switching transistor. The value of a resistor in the pulse width modulating circuit will also be changed to allow the coils to run cooler to also allow them to last longer. Existing electronic control modules that are still working can be protected from future failure of the switching transistor by the addition of a custom designed adapter circuit. The adapter circuit contains the transorb for clamping at lower voltage as well as a dropping resistor to allow the coils to run cooler. The circuit board in the adapter is fully potted in epoxy for protection from the elements and is installed in the power line connected to the existing electronic control module on the air dryer.

**Clearly describe the distinguishing characteristics of the remedy component/assembly versus the recalled component/assembly.**

All new design timers have a "G" and a "C" stamped on the manifold for identification. New timers can also be identified by the date code on the part

number label installed on the timer at time of manufacture. Future timers will be potted in a different color case for easier identification when material is available. Air dryer serial numbers and electronic control module date codes affected will be identified for affected components.

The equipment is still under warranty and as such replacement electronic control modules and adapters will be supplied to the customers free of charge along with instructions on installation. Graham White will assist in installation of the remedy whenever and wherever possible.

**Identify and describe how and when the recall condition was corrected in production. If the production remedy was identical to the recall remedy in the field, so state. If the product was discontinued, so state.**

The new designed electronic control module was implemented on all production timers shipped from the supplier beginning on 12/23/06.

## **VI. The Recall Schedule**

**Furnish a schedule or agenda (with specific dates) for notification to other manufacturers, dealers/retailers, and purchasers. Please, identify any foreseeable problems with implementing the recall.**

All customers receiving QBA15 Series Air Dryers and EC15 electronic control modules that were produced between 07/11/06 and 12/20/06 have been identified and are shown on the attached list. All of these customers will be notified by letter after approval of the letter by the Office of Defects Investigation. This letter will be submitted to ODI no later than 02/14/07.

Parts are available for immediate shipment to customers at a rate of approximately 75 per day once the campaign has begun. All customers will be

notified at the same time and shipments will be coordinated with the various customers to match as close as possible their schedule for installation.

## **VII. Furnish Recall Communications**

**9. Furnish a final copy of all notices, bulletins, and other communications that relate directly to the defect or noncompliance and which are sent to more than one manufacturer, distributor, or purchaser. This includes all communications (including both original and follow-up) concerning this recall from the time your company determines the defect or noncompliance condition on, not just the initial notification. A *DRAFT copy of the notification documents should be submitted to this office by Fax (202-366-7882) for review prior to mailing.***

**Note: These documents are to be submitted separately from those provided in accordance with Part 573.8 requirements.**

1. <sup>1</sup>Each manufacturer must furnish a report, to the Associate Administrator for Safety Assurance, for each defect or noncompliance condition which relates to motor vehicle safety.

This guide was developed from 49 CFR Part 573, "Defect and Noncompliance Reports" and also outlines information currently requested. Any questions, please consult the

complete Part 573 or contact Mr. Jon White at (202) 366-5226 or by FAX at (202) 366-7882.

**The Privacy Act of 1974 - Public Law 93-579, As Amended:** *This information is requested pursuant to the authority vested in the National Highway Traffic Safety Act and subsequent amendments. You are under no obligation to respond to this questionnaire. Your response maybe used to assist the NHTSA in determining whether a manufacturer should take appropriate action to correct a safety defect. If the NHTSA proceeds with administration enforcement or litigation against a manufacturer, your response, or statistical summary thereof, may be used in support of the agency's action.*