



GILLIG CORPORATION

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March 12, 2002

RECEIVED

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OFFICE OF  
DEFECTS INVESTIGATION

Mr. Jonathan White, Chief  
National Highway Traffic Safety Administration  
Office of Defects Investigation  
400 - 7th Street SW NSA-11  
Washington, DC 20590

02V-059.004 ① of ⑨

Subject: Defect Information Report  
Vapor Door Panel Recall

Dear Mr. White:

The following report is required by 49CFR573.

### Defect Report

On October 2, 2001, Gillig was informed by Vapor Incorporated of a safety related defect on bonded door panels manufactured between September 1, 1997 and February 1, 2000.

This report was prepared on March 7, 2002.

The recall is being conducted by Vapor with Gillig's cooperation.

Charles Koske, Senior Vice President Engineering should be contacted by the agency with respect to Gillig's role in this recall. Telephone number (510) 264-5031, fax number (510) 785-6819.

Charles Koske prepared this report.

### Vehicle Models Involved in the Recall

The following Gillig vehicles have been identified for the Vapor recall:

**Make:** Gillig      **Model Years Involved:** 1997 - 2000      **Model:** Phantom  
**Production Dates:** Beginning September 1, 1997 ending March 31, 2000      **Vin Range:** N/A

**Make:** Gillig      **Model Years Involved:** 1997 - 2000      **Model:** Low Floor  
**Production Dates:** Beginning September 1, 1997 ending March 31, 2000      **Vin Range:** N/A

Note: Vin and serial numbers are selected at time of fleet order processing. Production date is the significant element rather than the VIN number sequence.

**Vehicle Type: Bus**

Vehicles to be recalled are Gillig buses equipped with Vapor door panels.

**Recall Population**

Number of vehicles potentially involved:

<b>1997 Phantoms</b>	<b>0</b>
<b>1998 Phantoms</b>	<b>46</b>
<b>1999 Phantoms</b>	<b>5</b>
<b>2000 Phantoms</b>	<b>10</b>
<b>1997 Low Floors</b>	<b>4</b>
<b>1998 Low Floors</b>	<b>267</b>
<b>1999 Low Floors</b>	<b>475</b>
<b>2000 Low Floors</b>	<b><u>90</u></b>

Total number of potentially effected buses 897

The suspect population was determined by estimating effective dates at Gillig based on manufactured dates at Vapor and adding cushion at each end to be sure all are captured. (list attached)

**Defect Description**

The Vapor door panel has a potential product defect resulting in separation of the door panel skin from the panel frame through failure of the adhesive bond.

Vapor reports the cause of the defect is areas of imperfect bonding of the adhesive layer to the aluminum skin and frame. This is caused by incomplete joint preparation, inadequate cleaning, residual water, and other surface imperfections.

The consequence of this defect is if a significantly large percentage of the frame - to skin bond area fails the panel skin and glazing may separate from the door panel.

A degree of warning exists in that separation of panel skins from the frame over large areas is visible prior to the development of a hazardous condition. Vapor is developing a protocol for identifying the existence and severity of the delamination.

The potentially defective door panels were supplied by Vapor Corporation in Nilos, Illinois. James R. Pearson, Manager, Marketing and Business Development is the supplier representative.

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### **Chronology of Defect**

The incident that lead to Vapor's recall did not occur on a Gillig bus. The following is from Vapor's 573 report.

**September 5, 2001** Skin partially separated from frame of exit door panel on New Flyer bus owned and operated by Metro Transit, Minneapolis, Minnesota. A passenger fell from the moving vehicle onto the roadway.

**September 7, 2001** New Flyer advises Vapor of Metro Transit incident. Vapor representative visits Metro Transit, examines door panel, and obtains information concerning the incident from Metro Transit officials. Metro Transit advises that exit door panels on 9 sister buses of the one involved in incident show signs of delamination.

New Flyer personnel begin examining buses at other transit agencies for signs of delamination.

**September 10, 2001** Vapor reviews information from New Flyer and Metro Transit visit and begins to develop and test a remedy.

**September 10 - 14, 2001** Vapor personnel begin examining buses in various parts of the U.S. for signs of door delamination. Reports received of delamination on Vapor door panels on buses made by New Flyer and other builders in different parts of the U.S. and Canada.

**September 13 - 14, 2001** Vapor personnel travel to Minneapolis and apply remedy to the 10 New Flyer Low Floor articulated buses in the Metro Transit fleet.

**September 18, 2001** Vapor personnel meet with New Flyer personnel in Winnipeg, Manitoba to examine the door panel involved in the September 5th incident.

**September 19, 2001** Vapor engineering and management personnel meet, review information gathered as of that date, and conclude that a defect is potentially present in adhesively bonded door panels manufactured from September 1, 1997 through February 1, 2000. Decision made to report to NHTSA and Transport Canada.

**September 20 - 25, 2001** Further refinement and testing of remedy. Preparation for issuing reports to NHTSA and Transport Canada.

### **Remedy**

Vapor is installing mechanical fasteners to secure the door panel skin to the frame.

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The remedied door assembly will have specific mechanical fasteners installed in a visible pattern on the exterior of the door panel.

Vapor reports the condition was corrected in production by changes in the bonding process that were implemented in late 1999 and early 2000.

**Recall Schedule**

Gillig provided Vapor with an initial listing of VIN numbers in November, 2001. Vapor is conducting the recall and has not disclosed a schedule.

**Recall Communications**

Gillig has not been provided a copy of customer communication by Vapor. Attached is a copy of the preliminary repair procedure.

Sincerely,

**GILLIG CORPORATION**



Charles E. Koske  
Senior Vice President Engineering

CEK/vo  
attachment

cc: R. Birdwell

**Vapor Door Recall**

**Phantom:**

<b>Orlando Airport</b>	<b>87452-87459</b>
<b>LAX</b>	<b>88392-88397 &amp; 89056-89065 &amp; 89145-89150</b>
<b>Pocatello</b>	<b>88752-88754</b>
<b>Alamo/Orlando</b>	<b>89021-89024</b>
<b>Avis/LAX</b>	<b>89103-89114</b>
<b>Avis/Chicago</b>	<b>89246-89258 &amp; 89677-89681 &amp; 110321-110322</b>
<b>Avis/Detroit</b>	<b>110316-110320</b>
<b>Dulles Airport</b>	<b>110231-110233</b>

**Low Floor:**

<b>Ames, IA</b>	<b>70335-70338</b>
<b>Ann Arbor</b>	<b>70689-70699</b>
<b>Austin, TX</b>	<b>70873-70902</b>
<b>Avis/La Guardia</b>	<b>90268-90279</b>
<b>Avis/LAX</b>	<b>71202-71206</b>
<b>Ben Franklin, WA</b>	<b>70365-70367</b>
<b>CCCTA</b>	<b>70325-70334</b>
<b>Clearwater, FL</b>	<b>70844-70848 &amp; 70373-70374 &amp; 70767</b>
<b>DFW</b>	<b>70991-71030</b>
<b>Des Moines</b>	<b>70360-70363</b>
<b>Duluth, MN</b>	<b>70439 &amp; 70400-70410 &amp; 70460-70462</b>
<b>ECCTA</b>	<b>90291 &amp; 90250</b>
<b>Fresno, CA</b>	<b>70583-70591 &amp; 70602</b>
<b>Broward County</b>	<b>70635-70669</b>
<b>TANK</b>	<b>71064-71066</b>
<b>Gillig Demo</b>	<b>70364</b>
<b>Hampton Roads, VA</b>	<b>70607-70630 &amp; 70990</b>
<b>Hertz/Atlanta</b>	<b>70042 &amp; 70111 &amp; 70134 &amp; 70026 &amp; 70034 &amp; 70056 &amp; 70064 &amp; 70093 &amp; 70126 &amp; 70520-70521</b>
<b>Hertz/Boston</b>	<b>70014 &amp; 70018 &amp; 70028 &amp; 70036 &amp; 70044 &amp; 70066-70067 &amp; 70522-70523 &amp; 70073 &amp; 70081 &amp; 70108</b>
<b>Hertz/Chicago</b>	<b>70031 &amp; 70045 &amp; 70054 &amp; 70432-70433 &amp; 70482 &amp; 70444 &amp; 70062 &amp; 70114-70115 &amp; 70130-70131 70137-70138 &amp; 70146 &amp; 70416 &amp; 70458</b>
<b>Hertz/Denver</b>	<b>70006-70007 &amp; 70445-70448 &amp; 70121 &amp; 70147 &amp; 70434-70435 &amp; 70417 &amp; 70132 &amp; 70491 &amp; 70483- 70484</b>

**Vapor Door Recall****Low Floor:**

<b>Hertz/Detroit</b>	<b>70005 &amp; 70010-70011 &amp; 70032 &amp; 70040 &amp; 70496-70497 &amp; 70456 &amp; 70020 &amp; 70072 &amp; 70094 &amp; 70113</b>
<b>Hertz/Dulles</b>	<b>70039 &amp; 70019 &amp; 70074 &amp; 70110 &amp; 70442 &amp; 70486</b>
<b>Hertz/Ft. Lauderdale</b>	<b>70008-70009 &amp; 70017 &amp; 70033 &amp; 70441 &amp; 70516 &amp; 70023 &amp; 70068 &amp; 70071 &amp; 70102-70104 &amp; 70119 &amp; 70127-70128 &amp; 70141</b>
<b>--Hertz/Ft. Myers, FL</b>	<b>71232-71242</b>
<b>Hertz/Houston</b>	<b>70041 &amp; 70055 &amp; 70063 &amp; 70083 &amp; 70112 &amp; 70120 &amp; 70144-70145 &amp; 70415 &amp; 70443 &amp; 70485 &amp; 70136 &amp; 70430</b>
<b>Hertz/JFK</b>	<b>70012-70013 &amp; 70037 &amp; 70048 &amp; 70058 &amp; 70100-70101 &amp; 70116-70118 &amp; 70411-70412 &amp; 70427 &amp; 70440 &amp; 70459</b>
<b>Hertz/Kansas City, MO</b>	<b>70075 &amp; 70084-70085</b>
<b>Hertz/La Guardia</b>	<b>70507-70515 &amp; 70494-70495 &amp; 70439 &amp; 70452-70454 &amp; 70425</b>
<b>Hertz/Las Vegas</b>	<b>70431 &amp; 70487 &amp; 70051 &amp; 70078 &amp; 70098 &amp; 70450-70451 &amp; 70021</b>
<b>Hertz/LAX</b>	<b>70030 &amp; 70038 &amp; 70046-70047 &amp; 70050 &amp; 70069 &amp; 70052 &amp; 70088-70089 &amp; 70096-70097 &amp; 70099 &amp; 70129 &amp; 70142 &amp; 70149-70150 &amp; 70421-70422 &amp; 70502-70504 &amp; 70506</b>
<b>Hertz/Memphis</b>	<b>70438 &amp; 70493 &amp; 70426 &amp; 40492</b>
<b>Hertz/Orlando</b>	<b>70029 &amp; 70003-70004 &amp; 70049 &amp; 70428-70429 &amp; 70455 &amp; 70025 &amp; 70022 &amp; 70059-70060 &amp; 70079-70080 &amp; 70090-70092 &amp; 70105-70107 &amp; 70124-70125 &amp; 70143 &amp; 70413-70414</b>
<b>Hertz/Philadelphia</b>	<b>70070 &amp; 70015 &amp; 70027 &amp; 70035 &amp; 70043 &amp; 70065 &amp; 70057 &amp; 70082 &amp; 70109</b>
<b>Hertz/Phoenix</b>	<b>70016 &amp; 70053 &amp; 70499 &amp; 70076-70077 &amp; 70086-70087 &amp; 70095 &amp; 70123 &amp; 70139-70140 &amp; 70148 &amp; 70419-7042070500-70501</b>
<b>Hertz/San Diego</b>	<b>70449 &amp; 70436 &amp; 70061 &amp; 70122 &amp; 70133 &amp; 70135 &amp; 70151 &amp; 70423-70424 &amp; 70437 &amp; 70505</b>
<b>Hertz/West Palm Beach</b>	<b>70524-70530</b>
<b>Honolulu</b>	<b>70604-70606</b>
<b>Indiana University</b>	<b>70236-70253</b>
<b>Indianapolis</b>	<b>90362</b>
<b>Johnstown, PA</b>	<b>70852-70862</b>
<b>Kalamazoo</b>	<b>70339-70344</b>
<b>Kansas City, MO</b>	<b>70346 &amp; 90251</b>

**Low Floor:**

<b>Kingston, PA</b>	<b>70351-70355</b>
<b>Lafayette, IN</b>	<b>70165-70169 &amp; 70347-70350 &amp; 70686-70688</b>
<b>Lakeland, FL</b>	<b>70463-70467</b>
<b>Lane Transit, OR</b>	<b>70254-70267 &amp; 70597-70601</b>
<b>Louisville</b>	<b>70182-70235 &amp; 70375-70394 &amp; 71084-71100 &amp; 90299</b>
<b>Montebello, CA</b>	<b>70286-70292</b>
<b>New Castle, PA</b>	<b>70821-70832</b>
<b>Norwalk, CA</b>	<b>70356-70359 &amp; 70982-70989</b>
<b>Oakland Airport</b>	<b>70293-70312</b>
<b>Olympia, WA</b>	<b>70170-70181</b>
<b>Rochester, MN</b>	<b>70395-70398 &amp; 71037-71040</b>
<b>Salt Lake City</b>	<b>70772-70799 &amp; 70700-70766</b>
<b>San Jose Airport</b>	<b>70801-70820</b>
<b>VTA</b>	<b>70678-70679</b>
<b>Skagit, WA</b>	<b>70285 &amp; 70592</b>
<b>St. Paul, MN</b>	<b>70315-70324</b>
<b>Tampa, FL</b>	<b>70469-70480 &amp; 70631-70632 &amp; 70468 &amp; 90387</b>
<b>Toledo, OH</b>	<b>70152-70164 &amp; 71044-71063</b>
<b>Torrance, CA</b>	<b>71865-71872</b>
<b>Vancouver, WA</b>	<b>70268-70269</b>
<b>Waukesha, WI</b>	<b>70270-70283</b>
<b>West Palm Beach</b>	<b>70533-70538 &amp; 70368-70371 &amp; 70676 &amp; 70868-70872</b>

# PRELIMINARY

September 2001 VAPOR SLIDE-GLIDE DOOR PANEL REPAIR PROCEDURE Bulletin #TB04-24-004

02V-059.004 ⑧of⑨

**A. SUBJECT**

The procedure to mechanically fasten Vapor Slide-Glide door panels that are exhibiting delamination in the field is described in this bulletin.

**B. RELATED DOCUMENTS**

N/A

**C. ASSEMBLIES MODIFIED**

N/A

**D. PARTS REQUIRED**

ITEM	PART NUMBER	DESCRIPTION	QTY. PER	TOTAL QTY. PER
1	67125012-01	Drive Rivet 1/4" x 13/32", 100 deg. c'sink	9/door	18/door system
2	67121061-14	Drive Screw #6 x 5/16"	23/door	46/door system
3	67110298	Sikaflex-255 FC	0.25 tube/door	0.5 tube/door system
4	-	Alcohol/Water Mix (50/50)	A/R	A/R

**E. DRAWINGS REQUIRED**

ITEM	PART NUMBER	DESCRIPTION
1	50104147	Door Panel Assv. Drawing with hole locations

**F. MATERIAL DISPOSITION**

N/A

**G. SPECIAL TOOLING**

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	50126884	Template - Drive Screws	1
2	50136885	Template - Drive Rivets	1
3	-	Drill	2
4	-	Hammer	1
5	-	3/8" Flat Punch	1
6	-	0.257 (F Drill)	1
7	-	0.120 (#31 Drill)	1
8	-	100-Degree Countersink Drill	1



# PRELIMINARY

## H. DETAILED MODIFICATION

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### Drive Screw Installation

- E.1. Use the door panel assembly drawing (50104147) and the drive screw template (50126884) to locate and mark the position of the drive screws (67121061-14).
- E.2. Use the #31 Drill to drill a 3/8" deep hole for the drive screws. The location of these screws is shown on the panel drawing as hole letter A.
- E.3. Insert Drive Screws (67121061-14) into holes and hammer until tight.

### Drive Rivet Installation

- E.4. Again, use the door panel assembly drawing (50104147) and the drive rivet template (50126885) to locate and mark the position of the drive rivets (67125012-01).
- E.5. Use the "F" Drill to drill through the panel skin and through the first wall of the aluminum extrusion. The location of these screws is shown on the panel drawing as hole letter B.
- E.6. Use the 100-degree countersink drill to add a 0.467" diameter head countersink (0.095" deep) to the holes made in section E.5.
- E.7. Insert Drive Rivet (67125012-01) into holes and hammer with the use of the 3/8" flat punch until mandrel is flush with surface.

### Sikaflex-255 FC Application

- E.8. Thoroughly clean the inside surfaces of the door skin and door extrusions where they meet together along the top, bottom, and sides of each door panel.
- E.10. Allow 5 minutes for the doors to completely dry before apply the adhesive.  
  
Note: If the doors are not properly cleaned and dry before applying the adhesive, the integrity of the bond line will deteriorate.
- E.11. Apply a thin bead (approx. 1/4") of Sikaflex-255 FC (67110298) to the inside of the door skin where it meets the extrusion.

## I. INSPECTION AND TEST

N/A