



U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

ODI RESUME

Investigation: PE 15-033
Date Opened: 09/28/2015
Investigator: Kyle Bowker
Approver: Stephen Ridella
Subject: Transfer Switch Heat Related Failures

Date Closed: 06/17/2016
Reviewer: Bruce York-B

MANUFACTURER & PRODUCT INFORMATION

Manufacturer: IOTA ENGINEERING, LLC
Products: IOTA Automatic Transfer Switches
Population: 15,330 (Estimated)

Problem Description: Connections and wiring in the automatic transfer switch may degrade and over heat, increasing the risk of fire, personal injury and property damage.

FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
Complaints:	31	0	31
Crashes/Fires:	0	0	0
Injury Incidents:	0	0	0
Fatality Incidents:	0	0	0
Other*:	31	0	31

***Description of Other:** Fire and non-fire thermal events characterized by electrical arcing; glowing combustion of electrical conductors; evolution of heat, odor, smoke and/or soot; charring, melting and/or other heat related damage to subject components and associated wiring.

ACTION / SUMMARY INFORMATION

Action: This Preliminary Evaluation has been closed.

Summary:

On November 5, 2015, the Office of Defects Investigation (ODI) sent an email to IOTA Engineering LLC (IOTA) requesting certain information about the automatic transfer switches recalled by several recreation vehicle (RV) manufacturers. IOTA responded with emails dated November 13, 2015 and May 23, 2016. In their response, IOTA stated that it sold 15,330 automatic transfer switches to 42 RV manufacturers who, along with IOTA, have not submitted defect information reports to the agency in accordance with 49 CFR 573.6. ODI contacted 2 of these 42 RV manufacturers about the subject components and they both report that no safety defect trend has been identified. Furthermore, IOTA states that it has made a determination that the subject components themselves are not defective and when installed correctly in its intended application the switch performs reliably and without incident.

More than one RV manufacturer who did conduct a safety recall acknowledges that sporadic installation error was likely responsible for at least some thermal events experienced on their vehicles. Once the alleged defect trend became apparent, several RV manufacturers paid special attention to installation processes, yet thermal events continued to occur on their vehicles. Furthermore, some RV manufacturers allege that re-torquing of the terminal screws did not remedy the alleged defect and there may possibly be other as-of-yet unidentified reasons why properly torqued terminal screws may loosen over time resulting in a high resistance connection. While no RV manufacturer has identified a single specific root cause for thermal events involving the subject component, the frequency of thermal events reportedly diminished significantly once they changed transfer switch suppliers.

To date, ODI is aware of 31 complaints related to thermal damage of automatic transfer switches manufactured by IOTA. However, all 31 complaints are related to the performance of existing safety recalls, such as scope or owner

notification issues, some of which have already been addressed by the respective manufacturers. A safety-related defect trend has not been identified at this time as relates to the subject components installed by the 42 other RV manufacturers who have so far chosen not to conduct a safety recall. Further use of agency resources does not appear warranted. Accordingly, this investigation is closed. The closing of this investigation does not constitute a finding by NHTSA that a safety-related defect does not exist. The agency will take further action if warranted by the circumstances.

The ODI reports cited above can be reviewed at:

<http://www-odi.nhtsa.dot.gov/owners/SearchNHTSAID>

using the following complaint identification numbers: 10458296, 10461090, 10465791, 10469372, 10480786, 10491941, 10503017, 10512327, 10522811, 10534897, 10554925, 10567361, 10568410, 10568426, 10585655, 10610552, 10621358, 10629759, 10631603, 10649954, 10716665, 10726758, 10732068, 10746664, 10782102, 10782203, 10782851, 10787730, 10808577, 10819325, 10852246.