Form Approved: O.M.B. No. 2127-0004

Safety Defect and Noncompliance Report Guide for Vehicles
PART 573 Defect and Noncompliance Report[1]

On July 13, 2004, Western Recreational Vehicles, Inc. decided that (a defect which relates to motor vehicle safety)(a noncompliance with Federal Motor Vehicle Safety Standard No. 49 CFR Part 5) exists 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:

July 20, 2004

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

CSAR 1053

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.

Western Recreational Vehicles, Inc.

Identify the corporate official, by name and title, whom the agency should contact with respect to this recall.
Telephone Number: 509-457-4133 **Fax No.:** 509-457-0568
Name and Title of Person who prepared this report.

Phil Mattoon
Customer Service Manager

Signed:

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): ALPINE and AVALANCHE **Model Years Involved:** 2005 **Model(s):** ACA 40301, AC 34201, AC 36201, AC 36202, AC 38301, AC40301, AC 40302, AC 40401
Production Dates: Beginning: 2-16-04 **Ending:** 6-30-04
VIN Range: Beginning: 18XF4EM2051175200 **Ending:** 18XF4CM2351175289
Vehicle Type: Bodystyle: Motor Coach
Descriptive information which characterizes/distinguishes the recalled vehicles from those model vehicles not included in the recall:

Only involves 2005 models in the specific serial number range listed

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.

87%

II. Identify the Recall Population

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

Number of Vehicles: 78
Model Year Potentially Involved: 2005

Total Number Potentially Affected by the Recall: 78

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

15%

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:

Population was determined based on information received from the manufacturer of the component involved.

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.

The VANSCO VMM 2820 Module has experienced an incorrect fault indication on its bi-directional outputs (numbers 19 and 20)

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

It has been determined that the drive current in the opto-couplers was not optimized for all possible temperatures and tolerance conditions.

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

No operation of ABS light, no indication of ABS fault, no blink code diagnostics, no battery interconnect operation, house batteries will not be charged by alternator, cruise control can not engage.

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

Fault LED on VMM will be flashing.

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

VANSCO Electronics LTD.
1305 Clarence Avenue
Winnipeg, Manitoba Canada R3T 1T4

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

Kevin Dickson
Director of Applications 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.
On July 13, 2004 VANSCO Electronics Ltd. Notified Western RV that the component modules should be replaced. We have received no reports of failures in the field.

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.
On July 13, 2004 Western RV received VANSCO VMM 2820 module engineering bulletin. This bulletin describes VANSCOs testing procedures. (Attached)

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.

The VANSCO VMM 2820 modules will be replaced with modules manufactured after July 1, 2004 that have been tested with no failures.

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

VANSCO VMM2820 modules manufactured after July 1, 2004 have the current limiting resisters replaced. Re-testing has produced no failures.

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.

As of July 13, 2004 all production motor coaches have had the VANSCO VMM 2820 modules replaced with modules manufactured after July 1, 2004.

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.

Notification letters are to be sent to dealer/customer as replacement modules are available from VANSCO. First letters will go out August 2, 2004.

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.

1. [1]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.

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.***

VANTEC

Vantec VMM 2820 Module Engineering Bulletin

Recently we have seen that the Vantec VMM 2820 has been experiencing an incorrect fault indication on its Bi-directional Outputs (Numbers 19 and 20). Extensive investigation has gone into determining the root cause of this error and it has been determined that the drive current in the opto-couplers was not optimized for all possible temperature and tolerance variations. It should be noted that these opto-couplers are only used in the two outputs and not on any of the remaining VMM output circuits. Our belief is that the opto-couplers from our supplier have changed in their operating characteristics. Although they still meet specifications, they are at the other extreme and as a result have manifested a weakness in the opto drive circuitry. Vantec has altered the circuit by changing the opto-coupler gain resistor values to a value that will compensate for any variations over the entire VMM operating temperature range and component variations with margin to spare. All VMM 2820 modules shipped after July 1st, 2004 have the changed resistors incorporated.

History:

The VMM 2820 has been in production for nearly 4 years without any indication of this erroneous fault condition. Prior to the release of this module there was extensive internal and external testing performed and a copy of these tests has been appended to this bulletin. The Thermal and Vibration tests have been done on many of these VMM modules without any hint of this error condition.

Since we had never seen any heat related issues with the VMM 2820 it was not one of the areas that was being looked at as a possible cause during the investigation. It became very difficult to create the fault condition either at Vantec or at our customer's site. With the warmer weather, and access to a known vehicle that had exhibited the problem earlier, Vantec engineers were able to create the error by heating up the unit with a heat gun. This then enabled them to determine the root cause and implement the proper fix.

To try and determine the extent of this error mode we took 44 finished units from our production floor and ran them up to 85C in a thermal chamber. These units did not have the proposed fix and this test was run simply to determine how extensive this situation was. The units, still at elevated temperatures, were removed and powered up under load and 36 out of the 44 passed the test.

We then replaced the two current limiting resistors on these failed units and re-ran the test – all passed. As a result of this and through engineering design reviews we have determined a value of resistance that will provide ample margin under all rated temperature extremes and component variations.

Risks

Vantec is of the opinion that modules that use these outputs should be replaced. However, the failure rates are likely to be low. If outputs 19 and 20 on the modules are used in a non-critical function and the modules are not likely to see elevated temperatures, it may be that these modules need only be replaced when a failure has been confirmed. In addition, we are trying to determine if there is a production date, which we believe these opto-couplers, with the different tolerance, were introduced to minimize impact. As stated we had a high pass rate of production units without the proposed resistor change and using the opto-couplers with the suspected changed characteristics. As for units, which do not use these outputs, there is no risk unless:

1) Outputs 19 and 20, which are currently not used on that particular module, get used in a future feature, probably not a common occurrence in commissioned vehicles.

VANSCO

3) With the Plug and Play feature there is a possibility of taking a non-modified unit that currently does not use outputs 19 and 20 and replacing a unit which did. History to date has shown that this feature on vehicles has rarely been used. Units from stock have been used to replace suspected modules. Stock/ Service parts will need to be updated with the modified VMM's.

Vansco will be working closely with or customers to ensure a rapid solution to this issue and apologizes for any inconvenience. We stand behind our multiplexing system as the best in the industry and are confident that this issue is an isolated case and the changes proposed will make an already robust system that much better.

John Linn, VP Sales & Marketing

Kevin [redacted] Director Applications Engineering

July 15, 2004

Dear :

This notice is sent to you in accordance with the requirements of the National Traffic and Vehicle Safety Act.

Western Recreational Vehicles has determined that a defect, which relates to motor vehicle safety, exists in certain 2005 ALPINE COACH LIMTED AND AVALANCHE equipped with VANSCO VMM 2820 Modules. The module may experience an incorrect fault on its bi-directional outputs numbers 19 and 20. During this fault condition, there may be loss of operation of the ABS warning light, the cruise control may not engage and the alternator may not charge the house batteries.

To eliminate the possibility of these conditions the VANSCO VMM 2820 Modules will be replaced with revised modules. This service action will be accomplished without cost to you. Please contact your dealer or Western RV Customer Service, toll-free, at (866) 567-4133 to arrange a service date and to assure that the necessary parts for this repair may be ordered. The labor time needed to perform this service action is approximately one (1) hour.

If after contacting your dealer or the Western RV Customer Service Department you are unable to have this safety defect remedied without charge and within a reasonable time, you may wish to call (888) DASH-2-DOT ((888) 327-4236) or write,

Safety Administrator
National Highway Traffic Safety Administration
400 Seventh Street SW
Washington, DC 20590

Sincerely,
WESTERN RECREATIONAL VEHICLES, INC.

Phil Mattoon
Customer Service Manager

PRM/tms

July 20, 2004

CSAR 1053

To: Service Manager
(Dealer Name)
From: Western RV Customer Service Department

Subject: Safety Recall(NHTSA number to be assigned)

Models Affected 2005 ALPINE Coach 75200-75289
2005 AVALANCHE Coach 75200-75289

It has been determined by VANSCO Electronic and Manufacturing, that the VMM 2820 Module used in certain 2005 ALPINE COACH LIMITED AND AVALANCHE may experience an incorrect fault on its outputs number 19 and 20. These incorrect faults could cause no operation of the ABS warning light, no battery interconnect operation and the cruise control may not engage. The indication of this fault condition would be flashing LEDs on the outputs 19 and 20.

Western RV has determined that this possible fault condition exists in 2005 ALPINE COACH LIMITED AND AVALANCHE (serial #) that are currently in your stock. The two VANSCO VMM 2820 Modules in each coach must be replaced with revised modules.

You are instructed to contact the Western RV Customer Service Department at (866) 567-4133. An authorization will be provided and parts will be shipped to you by the Western RV Parts Department.

The revised modules will be shipped to you at no charge, freight pre-paid. A UPS call tag will be issued to return the defective modules in the same shipping container.

The defective modules must be returned to Western RV within 48 hours of the swap out procedure. In the event you fail to return the defective modules, you will be invoiced $450.00 for each module. Credit will be issued upon their return.

Flat rate time to swap the modules is a total of one (1) hour. You may bill labor on a standard Western RV Warranty Claim Form. The flat rate code is 900-009. Labor may be billed separate from return parts, however, no labor claim will be paid prior to Western RV receiving the return parts.

The VANSCO VMM 2820 replacement instructions are enclosed. Should you have any questions regarding this service action request, please feel free to contact the Western RV Service Department at (866) 567-4133.

VANSCO VMM 2820 Module Change Out Procedure

Extend generator slide out

Turn the ignition key to the off position

Turn off the house disconnect switch for 12 Volt power

Turn off the chassis disconnect switch for 12 Volt Power

Unplug the wiring harness connectors from the rear VMM that is mounted on the chassis panel (Picture)

Unbolt the VMM from the chassis panel and install the revised VMM. Reattach the wire harness connectors.

Remove the kick panel under the dash board in front of the passenger seat to expose the front VMM (Picture)

Unplug the wiring harness connectors from the front VMM that is mounted behind the kick panel

Unbolt the VMM from the body panel. This operation will require two techs. Install the revised VMM and reattach the wire harness connectors

Please Note: It is imperative that the connectors are all properly seated on the replacement modules. In particular, it is of special importance that the round power connector be given an extra twist to ensure it is secure. This is extremely important to ensure long problem free operation of the VMM Modules

Turn on the chassis and house 12 Volt power disconnect switches

Turn the ignition key to the on position and observe the front and rear VMMs for proper LED display. The net LED should be flashing on both VMMs

Replace the kick panel under the dash board

Return defective VMMs to Western RV, UPS call tag provided