Author: <Phillip.Riggins@knox.pcec.philips.com> at INTERNET-MAIL
Date: 9/11/98 5:32 PM
Priority: Normal
TO: Richard L. Stern at CPSC-HQ2
CC: Randy.Mitchell@knox.pcec.philips.com at internet-mail,
Bob.Pooler@knox.pcec.philips.com at internet-mail
Subject: Event Sequence Follow-up

Richard:

Here is the MX920 Event Sequence follow-up. Please let us know if you need additional information or a conference call between our experts.

Thanks

Phillip

(See attached file: MX920 Event Sequence - Follow-up.doc)

91 DC voltages measured ?

How many subwoofer :

" " L/R :

what was the performance of the add-on circuitry?

detection level ?

was circuitry tested on the system or off ?

Press Release

Web Page

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TO: Mr. Richard Stern, Consumer Product Safety Commission

FROM: Philips Consumer Electronics Company

DATE: September 11, 1998

RE: MX920

Further explanation of the sequence of events, and additional questions:

- The Subwoofer speaker ignition investigation follows:

The IC5002 failure was checked by removing one resistor R5033 and the output measured -24VDC. However, resistor R5030 should have also been removed to confirm the required zero output voltage necessary for the correct operation of IC5002. If any failure occurs in this IC5002, the DC output voltage will change, and this change will cause the audio transistors to be over-stressed thermally until the device fails.

- The Left and Right front speaker ignition investigation follows:

The -24 DC voltage regulator IC903 failed as a short for an unknown reason. One can speculate about the thermal stress in this power IC or a construction defect in this device.

- The speaker protection circuit evaluation to correct the above problem of excessive DC voltage on the speaker voice coil follows:

The four transistor circuit to add speaker protection to the MX920 was performance verified by applying a DC voltage to one output lead and ensuring the amplifier did shut down. No voltage could be measured at the amplifier output terminals, therefore, speaker ignition was no longer possible.

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Author: <Phillip.Riggins@kn[redacted].pcec.philips.com> at INTERNET[redacted]IL
Date: 9/9/98 1:46 PM
Priority: Normal
TO: Richard L. Stern at CPSC-HQ2
CC: Ken.Goins@knox.pcec.philips.com at internet-mail,
Jill.Greenman@knox.pcec.philips.com at internet-mail,
Tom.Hafner@knox.pcec.philips.com at internet-mail,
Randy.Mitchell@knox.pcec.philips.com at internet-mail
Subject: Re: Updated Draft

Richard:

We have reviewed the revised Press Release and offer the attached. Our Public Relations Director would like to know if we can add a PCEC contact to the release for journalist support. We hope that you will find this latest version acceptable, although we are still verifying the hours of operation of the toll free number. This information should be available soon.

(See attached file: NEWS from CPSC - MX920.doc)

We are also enclosing a first draft of a transmittal letter to be sent to consumers who have been identified by either our warranty records or the retailer's records. To date we believe we will be able to write to close to 1,500 purchasers and that number should be growing in the near future as more information comes in.

(See attached file: OWNER TRANSMITTAL LETTER.doc)

And the Notice of Recall that would be included with the transmittal letter.

(See attached file: NOTICE OF RECALL - Owners.doc)

In that regard, we are also hopeful of getting 100% of the names addresses, etc. of the J.C. Penney customers as they sold only through their catalog. The question has come up of whether there will be a requirement for them to display the posters in their stores, as no sales occurred through their stores. What are your thoughts?

Here is draft version of the transmittal letter that will go to the individual stores with the posters.

(See attached file: RECALL TRANSMITTAL LETTER - RETAILERS.doc)

From your group, has their been any questions on the cause/effect memo that we sent last week? Any request for additional engineering information?

We will be enclosing the electronic version of the "poster" with the picture of the product included soon.

We look forward to hearing from you on our submissions above.

Sincerely

Phillip

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TO: Mr. Richard Stern, Consumer Product Safety Commission

FROM: Philips Consumer Electronics Company

DATE: September 3, 1998

RE: MX920

As you requested we are providing a description of our analysis to-date of the cause and effect of the circuitry failure in the MX920.

Event sequence:

The **subwoofer** speaker ignition follows:

- For reasons unknown at this time, the audio output transistors Q5002 and/or Q5001 overheat and short. [It is thought that a change in the pre-amp IC5002 output voltage can cause this problem.]
- As a result the audio supply voltage is then applied to the speaker at a variable rate,
- causing the audio voice coil to be thrown towards the speaker grill.
- The result is subwoofer speaker ignition

The **Left or Right front speaker** ignition follows:

- For reasons unknown at this time, the -24 VDC output of voltage regulator IC903 shorts to the input of this circuit.
- The result is that more than -30 VDC is applied to capacitors C514 & C506. [Capacitors C514/C506 are rated at 1000ufd/25VDC and are over stressed with the -30 VDC or more applied.]
- As a result the C514 capacitor bulges and leaks conductive fluid onto the adjacent pins of the audio pre-amp IC502. [IC502 produces a DC output voltage shift until the conductive fluid from C514 dries and becomes non-conductive. At this point, the unit function normally if no other failures have occurred.]
- This output voltage shift from IC502 is translated to the speaker.
- The speaker coil then moved to a new position and is pre-heated.
- Speaker ignition is detected after the audio voice coil is thrown towards the speaker grill.

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Caveat: Any number of circuit failures can lead to speaker ignition independently of the above observations.

Resolution: The transistor speaker protection circuit evaluated by Service Engineering in Jefferson City detects a DC shift at the output of each amplifier and shuts the supply off before any of the above speaker damage can take place.

Caveat: Any number of circuit failures can lead to speaker ignition independently of the above observations.

Resolution: The transistor speaker protection circuit evaluated by Service Engineering in Jefferson City detects a DC shift at the output of each amplifier and shuts the supply off before any of the above speaker damage can take place.

Author: Richard L. Stern at CPSC-HQ2
Date: 8/28/98 11:32 AM
Priority: Normal
TO: tom.hafner@knox.pcec.philips.com at INTERNET-MAIL
Subject: Philips Magnavox MX920

This note will serve as notice that based on our telephone conversation yesterday, I believe the company has, in fact, begun the initiation of their corrective action plan. Since my engineer on this case has been delayed in his evaluation of the sample and correction, I am providing a one week extension to continue to negotiate the public notice aspect of this case. This means that by the end of next week, we need to be in agreement on the specifics of the nature and scope of the public notice campaign. At this time, I do not see any impediments in reaching this goal.

I will be out of the office on Monday, August 31, 1998; however, I will be checking my voice messages. Should you need to speak with me about any urgent matter, I will return your call on Monday. Otherwise, I look forward to speaking with you on Tuesday to discuss the additional information you are providing.

Thank you for your cooperation on these matters.

Sincerely,

Richard L. Stern
Compliance Officer
US Consumer Product Safety Commission
301-504-0608 ext. 1366

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Law Department

PHILIPS

Philips Consumer Electronics Company

To:
Richard Stern 301-504-0359

Copy:

From:
Thomas M. Hafner

Vice President and General Counsel
64 Perimeter Center East.
Atlanta, GA 31146-7300
Tel.: 770-821-2232, Fax: 770-821-2266
E-mail: tom.hafner@knox.pcec.philips.com

Ref.:
Date: 1998-08-26

Subject: Philips Consumer Electronics Company – MX920

Dear Mr. Stern:

Randy Mitchell, Phillip Riggins and I have reviewed the requirements of the Fast Track Program, and have a few questions before we make our final decision. WE would like to have a conference call with you early tomorrow afternoon, between 1:00 and 1:30 PM, if you are available. I would appreciate a call to confirm the time.

We have several questions, mostly dealing with timing issues. We are concerned about our ability to meet a strict 20 day timetable, which by our calculation ends on Friday. We have the following specific questions:

- What are the criteria for an extension of the 20 day limit. The FR notice mentions technically complex issues to determine the adequacy of Philips' corrective action. We are scheduled to get the boards necessary to retrofit the units, but we cannot have these ready before Friday. Notice issues may also be involved. We also need to discuss the press release.
- Whether the 20 day period or any extension is satisfied with the issuance of a press release or other notice, or whether the full corrective action program must be up and running.

Philips remains committed to the process, but dealing with an outside supplier, long distances and time zones, has lengthened the process more than we thought.

We look forward to our discussions with you tomorrow.

Very truly yours,

Thomas M. Hafner

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********** -COMM. JOURNAL- ********** DATE AUG-26-1998 ***** TIME 10:52 *** P.01

MODE = MEMORY TRANSMISSION START=AUG-26 10:49 END=AUG-26 10:52

FILE NO.= 012

STN NO.	COM	ABBR NO.	STATION NAME/TEL.NO.	PAGES	DURATION
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-CPSC COMPLIANCE -

********** -301 504 0359 - ***** - 301 504 0359- **********

U.S. CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

OFFICE OF COMPLIANCE
Tel: 301-504-0608

DIVISION OF
CORRECTIVE ACTIONS
FAX: 301-504-0359

DATE: 8/26/98 PAGES TRANSMITTED 9 + cover

TO: Tom. Hafner

TITLE: General Counsel

OFFICE:

FAX #: 770-821-2266

FROM: Richard L. Stern 301-504-0608 ext 1366

REMARKS: This is our standard "Fast Track" package of information. Please call me with any questions.

☐ Confirmation copy to follow by U.S. Mail
☑ Fax Transmission Only

NOTE: If all pages are not received, or if you have problems with this transmittal, please contact the person listed above.

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****FOR OFFICIAL USE ONLY****

PRODUCT SAFETY ASSESSMENT (PSA) TECHNICAL EVALUATION REQUEST

Requested by: Richard L. Stern, (301)504-0608 Ext:1366 Org. Code: CCA Field Off: FOCR

Date Submitted: August 20, 1998 Priority: X Case #: RP980192

PSA ACTION (FOR PSA USE ONLY)

Request number: 0913.98

Date Processed: 8/20/98

Date Requested: 8/26/98

Due Date: 9/4/98

PRODUCT INFORMATION

Manufacturer: Philips/Magnavox City: Jefferson City State: TN

Product: Home Theater Audio System NEISS Code: 0546

Brand name, model, etc. Philips Magnavox model MX920

Sample number: 98-792-0501

Sample Disposition X Return to Requestor Store at Whse Other:

IDI Number: none

EVALUATION REQUESTED: Evaluate the proposed engineering fix for the possible speaker fire scenerio using the sample and the submitted engineering drawings and schematics. Determine if the proposed corrective action is adequate.

Assigned to:

Organization: EE

Technical Off. Lee

Request Summary:

EPI ASSESSMENT: Dates: From: To: Sort by Mfg. Yes No

IDI IPII NEISS Comments NEISS Estimates Deaths NFIRS

Hazard: fire Hazard Code: 32104

Requested Completion Date: August 26, 1998

Locations of: Samples: Sample Room 1 until needed Files: CO's Office until needed

Comments: Since this is very similar to the review Doug Lee performed on the AIWA system, it would be desired for Doug to evaluate this engineering change as well.

(Rev 8/97)jb/ee)

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DRAFT

U.S. CONSUMER PRODUCT SAFETY COMMISSION PRODUCT SAFETY ASSESSMENT REPORT **DRAFT - FOR OFFICIAL USE ONLY - DRAFT**	PSA No: 0913.98 CASE No: RP980192 Requestor: Richard Stern SAMPLE Nos: 98-792-0501 CPSC SEAL: none IDI No: none
PRODUCT: Philips/Magnavox Home Theater Audio System, Model MX920	FIRM: Philips Consumer Electronics Company, Jefferson City TN
REQUEST: Evaluate the proposed engineering fix for the possible speaker fire scenario using the sample and the submitted engineering drawings and schematics. Determine if the proposed corrective action is adequate.	
POTENTIAL HAZARD: Fire	

Prepared by NAME AND TITLE:	DATE: 9/29/98	*Reviewed by* NAME AND TITLE:	DATE: 9/29/98
Doug Lee Electrical Engineer Division of Electrical Engineering	EXT: 1313	Andrew Trotta Technical Reviewer Division of Electrical Engineering	

Background

The subject is a Philips/Magnavox home theater audio system, model MX920. As part of the Commission's Fast Track Recall Program, Philips reported potential fire problems with the subwoofer and left and right speakers of the system. A potential fire hazard exists if a DC voltage is applied to a speaker, overheating the voice coil and possibly igniting part of the speaker cone or grill.

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Philips reported 2 incidents with speaker degradation and 91 units that failed DC output tests. There is 1 claim for property damage and no reported injuries. A total of 28,330 units are involved of which 25,500 units are with consumers.
Philips reported that the exact cause of the subwoofer speaker ignition is unknown at this time. On some of the units examined by Philips, shorted audio output transistors were found. Philips suspects a possible problem with the pre-amplifier integrated circuit (IC).
Philips also reported that the exact cause of the left and right speaker ignition is unknown at this time. On some of the units examined by Philips, conductive fluid from a leaking capacitor was found. Philips suspects a possible problem with shorting of the voltage regulator integrated circuit that resulted in an overvoltage to the capacitor.

Evaluation

High DC input levels to the speakers can overheat the voice coils and possibly ignite parts of the speaker. Fuses in series with the speaker and overload circuitry protection in the amplifier can help protect against such problems.

Philips designed and tested a protection circuit to add to the MX920 audio system amplifier. The circuit is designed to monitor all five amplifier outputs to the five speakers (subwoofer, front and rear-L and R). A DC voltage (greater than 3 volts) on any of the outputs will latch circuitry to deactivate the existing relay which energizes the main transformer. Removal of the power to the main transformer will remove power to the speakers and should prevent a fire from occurring.

Conclusion

The exact cause of the DC voltage to the speakers is not known. However, Philips designed and tested a monitor/protection circuit to add to the amplifier of the MX920 audio system. When added, the circuit will detect DC voltages to a speaker and remove power to the main transformer and speaker, which should prevent a fire from occurring.

PHILIPS

PHILIPS

FAX

Date 11/2/98

Number of pages including cover sheet 2

TO: Tina Adekoya

Phone
Fax Phone- (301)504-0359

FROM: Kristi Lane
Philips Service Solutions Group
401 E Old Andrew Johnson Hwy
PO Box 555
Jefferson City TN 37760

Phone (423)475-0359
Fax Phone (423)475-0454

CC:

REMARKS: ☐ Urgent ☐ For your review ☐ Reply ASAP ☐ Please Comment

SUBJECT:

Please find the following report for October Activity.

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Monthly Progress Report for Corrective Action Plan

CASE #: RP980192 Compliance Officer: Richard L. Stern
Company Name: PhilipsMagnavox Company Product: MX920 Home Audio Theatre System
Reporting Dates, From: 10/2/98 To: 10/26/98 Total# of Affected Products: _____

I) PRODUCTS CORRECTED/CAPTURED BY YOUR FIRM:

Location of Products	Total Products	Corrections This Period	Total Corrections/Scrap	% Corrected/Scrapped
with Philips	1,288			
with Servicers		650	650	2%
with Distributors				
with Retailers/Consumers	26,207			
TOTAL:	27,495	650	650	2%

II) NOTIFICATION MEASURES: (Using the categories listed below, record the number of notifications attempted by your firm during this reporting period, and record the total number of notifications to date.)

	Number for This Reporting Period	Total
Billing Insert		
Direct Mail Letter	1648	1648
Magazine		
Newspaper		
Pediatrician Poster		
Phone Call		
Product Catalog		
Radio		
Retail Store Poster		
Television		
Video News Release		
Web Site		
Other/Unknown		
TOTAL:	1648	1648

III) CONSUMER AWARENESS: (Using the categories below, record the way, by numerical quantity, consumers told you they learned of the corrective action, i.e. consumer received direct mail, read magazine, etc.)

	Number for This Reporting Period	Total
Billing Insert	0	0
Direct Mail Letter	245	245
Magazine	28	28
Newspaper	232	232
Pediatrician Poster	0	0
Phone Call	10	10
Product Catalog	0	0
Radio	25	25
Retail Store Poster	163	163
Television	284	284
Video News Release	4	4
Web Site Hits	24	24
Other/Unknown	11	11

IV) Calls to 800 Number/Correspondence

	# From Customers This Reporting Period	Total
800 Number	1026	1026
E-mail		
Written Requests		

NOTE: Submit completed form by the FIRST of EACH MONTH to Tina Adekoya at:
United States Consumer Product Safety Commission, Office of Compliance
4330 East West Highway, Room 613
Bethesda, MD 20814
OR, fax report to (301) 504-0359. Address any questions to Ms. Adekoya at (301) 504-0608, extension 1223

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