



# **ARSON HOTLINE**

***September 8, 2010***

## **President's Message**

The theme for the articles in this newsletter is electrical fires involving portable equipment such as extension cords and strip outlets.

I hope everyone is enjoying the great summer weather except for the unusually heavy rainfall. But it sure is nice to see everything is still green this time of the summer.

While there have been a number of arson fires this summer, WAIC has not seen very many tips. It has been pretty slow for WAIC this summer on all aspects of our programs.

As I reported last time, WAIC is considering establishing a fund to help offset fire investigation costs such as digging out a basement with heavy equipment. WAIC is still working on this. WAIC welcomes any input you may have. We hope to have more information at our Annual Meeting.

Mark your calendar for the Annual Meeting on September 15, 2010. Additional information will be found in this newsletter.

Remember, WAIC's main purpose is to provide the **WISCONSIN ARSON HOTLINE (800-362-3005)** for an anonymous arson fire tip leading to the arrest and conviction of an arsonist.

William H. Schultz,  
President  
Wisconsin Arson Insurance Council  
William.schultz@fmglobal.com

**COME ONE, COME ALL  
TO THE 2010 W.A.I.C.  
ANNUAL MEETING**

**WEDNESDAY, SEPTEMBER 15**

**AT**

**DELAFIELD BREWHAUS  
3832 HILLSIDE DRIVE  
DELAFIELD, WISCONSIN 53018**

**11:30 AM - 1:30 PM  
IN THE LARGE MEETING ROOM  
(GROUND LEVEL)**

**LUNCH - PROVIDED BY W.A.I.C.**

**RSVP BY 9/13/2010 TO  
[GStreicher@ci.west-allis.wi.us](mailto:GStreicher@ci.west-allis.wi.us)**

# WAIC Board Meeting

## August 4, 2010

**IN ATTENDANCE:** Bill Schultz, Paul Hansen, Tony Martinez, Frank Lockwood and Gary Streicher

**APPROVAL OF PREVIOUS BOARD MEETING MINUTES:** May 19, 2010

**TREASURER'S REPORT:** Rick Crouse

Beginning Balance 5/19/10	??	\$14,891.38
Income		
Expenses		
Ending Balance		_____

**PRESIDENT'S REPORT:** Bill Schultz

**VICE PRESIDENT'S REPORT:** Randy Dolenshek

**REPORTS:**

**Awards:**

**Membership:**

**Sustaining Membership:**

**Publicity:**

Website ([www.WIArsonHotline.org](http://www.WIArsonHotline.org)) –

Timetable for website update per discussion at November's 2009 WAIC meeting? Paul Hansen working on it.

Recent WAIC newsletters on our website

WAIC placing an ad in the Dispatcher to use the arson poster at the arson fires?

**OLD BUSINESS:**

Newsletter status:

What is theme for next newsletter? Outlet Strip Fires, Use of extension cords by college students.

Next newsletter date? August

2010 Goals:

Business cards: Randy

WAIC Sponsored training meeting – Training meeting in March 2011?

Getting posters up at fires:

Town of Hayward

Pallet Plant Fire – Town of Wilson DONE

Power Point Presentation for Fire Investigation Classes? Tony Martinez to do. This will no longer be needed due to DCI coming up with a training program.

**Loss Investigation Grants (help offset investigation costs) – Mechanics of proposed program**

**Does WAIC want to only provide equipment for buildings that are insured? (In hopes of reimbursement)**

Other:

**NEW BUSINESS:**

Elections? September

Other:

Annual Meeting: September 15, 2010

Location/Time

Cost

Invitations

Agenda/Format

Other

**ADJOURN:**

The following article is food for thought. I have highlighted a particularly salient point and given a reference article to that point. While this article is specifically targeted to extension cords, it also applies to appliance power cords. According to published data, however, extension cords are three times more likely to be identified as the ignition source of a fire than are appliance power cords.

- Editor

## **Consumer Product Safety Commission Extension Cords Fact Sheet (CPSC Document #16)**

### **THE STATISTICS**

The U.S. Consumer Product Safety Commission (CPSC) estimates that each year, about 4,000 injuries associated with electric extension cords are treated in hospital emergency rooms. About half the injuries involve fractures, lacerations, contusions, or sprains from people tripping over extension cords. Thirteen percent of the injuries involve children under-five years of age; electrical burns to the mouth accounted for half the injuries to young children.

CPSC also estimates that about 3,300 residential fires originate in extension cords each year, killing 50 people and injuring about 270 others. The most frequent causes of such fires are short circuits, overloading, damage, and/or misuse of extension cords.

### **THE PROBLEM**

Following are CPSC investigations of injuries that illustrate the major accident patterns associated with extension cords, namely children putting extension cords in their mouths, overloaded cords, worn or damaged cords, and tripping over cords:

A 15-month-old girl put an extension cord in her mouth and suffered an electrical burn. She required surgery.

Two young children were injured in a fire caused by an overloaded extension cord in their family's home. A lamp, TV set, and electric heater had been plugged into a single, light-duty extension cord.

A 65-year old woman was treated for a fractured ankle after tripping over an extension cord.

### **THE STANDARDS**

The National Electrical Code says that many cord-connected appliances should be equipped with polarized grounding type plugs. Polarized plugs have one blade slightly wider than the other and can only be inserted one way into the outlet. Polarization and grounding ensure that certain parts of appliances that could have a higher risk of electric shock when they become live are instead connected to the neutral, or grounded, side of the circuit. Such electrical products should only be used with polarized or grounding type extension cords.

Voluntary industry safety standards, including those of Underwriters Laboratories Inc.(UL), now require that general use extension cords have safety closures, warning labels, rating information about the electrical current, and other added features for the protection of children and other consumers.

In addition, UL-listed extension cords now must be constructed with #16 gauge or larger wire, or be equipped with integral fuses. The #16 gauge wire is rated to carry 13 amperes (up to 1560 watts),

as compared to the formerly-used # 18 gauge cords that were rated for 10 amperes (up to 1200 watts).

## **SAFETY SUGGESTIONS**

CPSC has the following recommendations for the purchase and safe use of extension cords:

- \* Use extension cords only when necessary and only on a temporary basis.
- \* Use polarized extension cords with polarized appliances.
- \* Make sure cords do not dangle from the counter or table tops where they can be pulled down or tripped over.
- \* Replace cracked or worn extension cords with new #16 gauge cords that have the listing of a nationally-recognized testing laboratory, safety closures, and other safety features.
- \* With cords lacking safety closures, cover any unused outlets with electrical tape or with plastic caps to prevent the chance of a child making contact with the live circuit.
- \* Insert plugs fully so that no part of the prongs are exposed when the extension cord is in use.
- \* When disconnecting cords, pull the plug rather than the cord itself.
- \* Teach children not to play with plugs and outlets.
- \* Use only three-wire extension cords for appliances with three-prong plugs. Never remove the third (round or U-shaped) prong, which is a safety feature designed to reduce the risk of shock and electrocution.
- \* In locations where furniture or beds may be pushed against an extension cord where the cord joins the plug, use a special "angle extension cord," which is specifically designed for use in these instances.
- \* Check the plug and the body of the extension cord while the cord is in use. Noticeable warming of these plastic parts is expected when cords are being used at their maximum rating, however, if the cord feels hot or if there is a softening of the plastic, this is a warning that the plug wires or connections are failing and that the extension cord should be discarded and replaced.
- \* **Never use an extension cord while it is coiled or looped. Never cover any part of an extension cord with newspapers, clothing, rugs, or any objects while the cord is in use.** Never place an extension cord where it is likely to be damaged by heavy furniture or foot traffic. Reference - "Insulated Heat Source as a Fire Cause" by B. Beland, Fire & Arson Investigator, July, 1982 - Editor
- \* Don't use staples or nails to attach extension cords to a baseboard or to another surface. This could damage the cord and present a shock or fire hazard.
- \* Don't overload extension cords by plugging in appliances that draw a total of more watts than the rating of the cord.
- \* Use special, heavy duty extension cords for high wattage appliances such as air conditioners, portable electric heaters, and freezers.
- \* When using outdoor tools and appliances, use only extension cords labeled for outdoor use.

Multiple outlet strips are essentially extension cords “with features”. As such, they are subject to the same problems as extension cords plus problems due to the “features”.

The weakest part of any wiring system is generally at its connections. All connections have the potential of overheating due to current flowing through electrical resistance. The situation worsens with higher currents and higher resistances and will deteriorate over time. There are more connections in an extension cord or outlet strip than we might think.

Consider an extension cord or its multiple outlet strip counterpart: there is first the connection of the power plug into the outlet. The first potential failure point involving an extension cord component is the connections – two or three, depending – between the extension cord plug blades and the outlet contacts. But this is not the only connection in the wiring near this point. Recall that the plug blade is just that – a blade. There is a stranded wire connected to every blade within the plug. This connection is another potential failure point. Along the length of the cord, there are no connections – just the potential of physical damage to the cord compromising the electrical insulation. Further, electricity passing through wire produces heat, and this heat must be allowed to dissipate into the surrounding air. If the heat produced in the wires is held in, fire can result as pointed out in the Beland article. A coiled cord, or insulation such as a blanket, rug, or pillow on top of a portion of the cord can lead to overheating and ignition. Usually, ignition involves the materials insulating the cord. Next, we have the connector at the end of the extension cord. There we have another connection – wire-to-contact-strip – that can overheat. Then we have the connection(s) to the plug inserted into our extension cord's connector as another connection that might fail.

Outlet strips are more complicated. The outlet strip is an extension cord with a “fancy connector” at its end. In the unsophisticated outlet strip, we still have the connections of the cord to the equipment within the outlet strip as a potential for failure. Most outlet strips have a built-in circuit breaker and a built-in switch connected to the black or hot (or “live”) wire of the cord. There is a connection from the cord to the circuit breaker line side. The circuit breaker itself involves a connection that can be made and broken, and thus is another potential failure point. On the load side of the circuit breaker, there is a connection to a wire. The other end of this wire is connected to the ON/OFF switch. Next is this switch's contact, and after that the load side wire connection. The load side wire is typically connected to the hot-side contact strip. After that, all three contact strips – hot, neutral, and ground – have associated connections whenever a plug is inserted into them.

Now consider the outlet strips with special features: typically MOV surge suppressor circuitry, indicating lights, and timers. These features add more connections into the outlet strip. Timers have failure mechanisms all their own, and, in particular, MOVs (surge suppressors) have a failure mechanism that is catastrophic.

The U.L. Standard 1449 for Surge-Suppressors, including surge-suppressing outlet strips, was amended in 1999 to mandate using a thermal protector (TCO) with the MOV. This helped improve the safety of the surge-suppressing outlet strips. Since 1999, there have been subsequent revisions to U.L. 1449.

The last paper is a letter from the Consumer Product Safety Commission to Underwriters Laboratories which addresses further problems associated with MOVs in multiple outlet strips, suggests a way to mitigate this danger, and recommends that this become part of the new U.L. Standard.

- Editor



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WASHINGTON, DC 20207

Sheela Kadambi  
Electrical Engineer  
Division of Electrical Engineering  
Directorate for Engineering Sciences

Tel: 301-504-0508 Ext. 1298  
Fax: 301-504-0533  
Email: skadambi@cpsc.gov

November 12, 2002

Mr. Dale Hallerberg  
Staff Engineer  
Underwriters Laboratories Inc.  
333 Pfingsten Road,  
Northbrook, IL 60062-2096

Subject: Proposed changes to requirements in UL 1449 – Standard for Transient Voltage Surge Suppressors

Dear Mr. Hallerberg:

The U.S. Consumer Product Safety Commission (CPSC) staff recently completed a review of incidents associated with power strips with surge suppression components (subsequently referred to as surge suppressors). We would like to take this opportunity to share our findings with Underwriters Laboratories Inc. (UL) and recommend that you consider changes to the Standard for Transient Voltage Surge Suppressors, UL 1449, to increase the effectiveness of selected provisions of this standard.

CPSC technical staff reviewed 74 in-depth investigation reports (IDIs) on surge suppressor-related incidents that CPSC Field staff investigated between January 1, 1997 and September 1, 2002. Most of these incidents were investigated because of a fire or potential fire. Copies of the IDIs are enclosed for your review (Attachment A).

CPSC technical staff also conducted 39 technical evaluations of surge suppressors that were collected from incidents that occurred between January 1, 1997 and September 1, 2002. In 25 of the 39 incidents, it was reported that internal failure within the surge suppressor resulted in fire that penetrated the product enclosure. A fire that breaches the enclosure presents a risk of fire propagation. Technical analysis showed that 16 of these 25 incidents were associated with overheating of the printed circuit board or internal wiring system. Nine of the 25 were attributed to the metal oxide varistor (MOV) failing. Some of the incidents associated with an MOV failure involved units manufactured after February 1998, when new requirements for fusing and thermal protection became effective. CPSC technical staff recommends that a new requirement, such as the addition of

a barrier, be added to UL 1449 to address fire propagation with an MOV failure. (Examples of assessments conducted in which the failure resulted in overheating that penetrated the product enclosure are enclosed as Attachment B).

Among the 39 incidents reviewed was one in which a screw intended to use for mounting a surge suppressor fell inside the unit (see Attachment C); the product was listed to the applicable standard. According to the IDI, the mounting screw fell inside the unit while the consumer was attempting to mount the surge suppressor on a tabletop. As a result, the screw caused arcing and became welded to the MOV ground lead between the line-ground connection. Although this incident resulted in tripping of the branch circuit breaker, potentially hazardous arcing that could lead to fire is possible if the circuit breaker does not trip, perhaps due to a high-impedance fault or low short-circuit current availability. CPSC staff recommends that a requirement be included in the standard that will prevent mounting hardware from falling through the mounting slots.

Thank you for the opportunity to make these recommendations. Please feel free to contact me for further discussions. The views expressed in this letter are those of the staff and have not been reviewed or considered by the Commission.

Sincerely,  
Sheela Kadambi

cc:

James Beyreis, UL/Northbrook  
Gordon Gillerman, UL/Washington  
Colin Church, Voluntary Standards Coordinator, CPSC

Attachments :

Attachment A – In depth investigation reports  
Attachment B1 & B2 – Product safety assessments, PSA No. 0640.02 & 0450.02  
Attachment C – PSA No. 0354.02

Note: Attachments not included  
- Editor

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**ARSON HOTLINE**

Wisconsin Arson Insurance Council Newsletter

Paul Hansen, Editor  
EFI Global, Inc.  
320 Oakwood Drive  
Delafield, Wisconsin 53018