RECENT TRENDS IN PRODUCT LIABILITY LOSSES

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I.
INTRODUCTION

A fire is undoubtedly one of the most damaging losses that a family or a business can suffer. In 1998 alone, 1,755,500 fires were attended by public fire departments in the United States.[1] An estimated $8,629,000,000 in property damage occurred as a result of these fires, and 78% of that damage occurred in structure fires.[2]

In a subrogation investigation, we seek to determine the cause and origin of the fire in order to discover whether a third party may be responsible for the fire and, therefore, obligated to pay the loss. Subrogation theories often include negligence (for example, against an electrician whose recent work was faulty); breach of contract (perhaps against a contractor who damaged wiring, leading to a fire); or a product liability theory—pursuing the manufacturer, distributor or seller of a product when the product that caused the fire is believed to be defective.

According to the most recent Fire Protection Handbook, published every 4 years by the National Fire Protection Association, products were involved in causing 53.3% of fires in the American community from 1989 to 1993.[3] While many of these fires may be caused by operator error or abuse of the product, others represent possibilities for subrogation in a product liability context.

This article will provide information about a few products that have repeatedly been the subject of product liability investigations in the recent past. Included as appendices are tables with information about recalls of several of these products. The basics of product liability law are also briefly summarized, including a list of defenses to a product liability case, which may be used by the manufacturer of a recalled product. Finally, this article provides practical guidelines for how insurers, and their representatives, can help ensure that a subrogation suit involving a product liability claim can be maintained.

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[1] Karter, Michael J., "Fire Loss in the United States During 1998," National Fire Protection Association, Quincy, MA, September 1999, p. i.

[2] Karter, Michael J., "Fire Loss in the United States During 1998," National Fire Protection Association, Quincy, MA, September 1999, p. iii.

[3] Hall, John R. Jr., Cote, Arthur E., "America's Fire Problem and Fire Protection," Fire Protection Handbook, 18TH Edition, National Fire Protection Association, Quincy, MA, p. 1-12.

II.
RECENTLY RECALLED PRODUCTS

Over the past few years, countless products have been the subject of fire investigations, and we have seen some products investigated and tested repeatedly. The products discussed in this article are certainly not the only products that have been the subject of claims in the recent past, but the number of fires involving them has risen and the products' use is still increasing. Having more detailed information about these products may help adjusters and investigators identify the product and its potential problems early in the investigation, when evidence can still be collected, and a subrogation case can begin on the right foot.

A. Extension Cords

The first category of products includes extension cords and surge protectors or surge suppressors. As recently as February of 1999, the Consumer Product Safety Commission ("CPSC") issued a formal warning to inform consumers about the dangers of certain extension cords and surge suppressors. The CPSC reports that millions of faulty extension cords, power strips and surge protectors, which were the subject of 25 recalls between 1994 and 1998, may still be being used by consumers.[4] Most likely, the dramatic increase in the use of electronics such as computers, VCRs, fax machines and other appliances has proportionately increased the use of the cords and suppressors.

[4] Press Release, "CPSC Warns Consumers About Faulty Extension Cords, Power Strips and Surge Protectors," Washington D.C., February 24, 1999

The CPSC reports that in 1996 alone, electrical cords and plugs were involved in about 7,100 fires, resulting in 120 deaths. These deaths made up about 32 percent of all deaths associated with residential electrical system fires. That same year, more than 12,000 people were treated in hospital emergency rooms for electrical burns and shocks, and about 2,500 people were treated for injuries associated with extension cords.[5]

In 1997, the CPSC began an investigation to monitor extension cords, power strips and surge protectors. The CPSC investigators inspected products sold through discount stores, mass merchandisers, dollar stores and hardware chains. After collecting samples from 83 locations around the country, investigators found that 72 percent of the samples failed to meet current safety standards. CPSC also worked with U.S. Customs to monitor extension cords, power strips and surge protectors shipped to U.S. ports. This investigation resulted in many of the recent recalls of these devices.

Attached as Table A is a list of extension cords that have been recalled within the last several years. The most commonly listed "reason for recall" appears to be undersized wires, which pose serious electrocution and fire risks. The primary risk associated with undersized wiring is that the wires produce more heat than the insulation around the wires is designed to withstand. As the insulation melts, the cord can arc and cause a fire. This danger is compounded when the user overloads the extension cord, as is often done unknowingly by the user. Many fires are caused by extension cords that failed when homeowners plugged high-energy appliances, such as space heaters, into extension cords that were not equipped to handle the associated electrical load. If the cord has more than one receptacle, other appliances may also be connected to the extension cord, increasing the demand upon the cord and causing more heating of the wires.

Poor connections between the cord and a product's plug can also cause a fire in an extension cord or the cord of the appliance plugged into it. Many extension cords have three power cord receptacles. Each of the receptacles presents the possibility of a poor electrical connection. A poor connection is called a high-resistance connection because there is resistance to electrical current flow. All that is needed to fuel a high resistance connection is a device that is plugged in and operating (drawing current). As the blades and the receptacle separate, minute arcing occurs between the blades and the receptacle, producing heat that can discolor, burn, or even ignite the plastic of the cord.[6]

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[5] Press Release, "CPSC Warns Consumers About Faulty Extension Cords, Power Strips and Surge Protectors," Washington D.C., February 24, 1999.

[6] Jack Sanderson, Fire Findings Newsletter, Summer 1999, Vol. 7, No. 3.

A device that draws more electrical current, such as a heat-producing appliance, increases the possibility of heating as a result of the high resistance connection.[7] A plug that fits poorly in the receptacle is a common source of high resistance connections, and misaligned or cheaply-constructed receptacles on extension cords can facilitate this poor connection.

B. Surge Suppressors and Their Components

Like extension cords, surge suppressors (also called surge protectors) can have undersized wiring, lightweight brass receptacles that cause poor connections, or other defects. A recent search of the CPSC National Electronic Injury Surveillance System ("NEISS") database turned up more than 160 reports of fires involving surge suppressors during the past nine years. Given their construction and mode of operation, the longer that surge suppressors are used, the more prone they are to causing fires. Components within surge suppressors themselves have been observed to reach temperatures hot enough to ignite the plastic of the strip within only a few minutes. To understand this phenomenon, a basic knowledge of surge suppressor operation is needed.[8]

Surge suppressors are a form of plugstrip, which usually have 5 or 6 electrical outlets and a short cord. Some surge suppressors have ON/OFF switches and some contain circuit breakers. A surge suppressor is different from the simple plugstrip because it has surge suppression elements. However, plugstrips may also be labeled "surge suppressors" even when the have no power surge protection, and consumers are deceived by the mislabeling because the products look similar.[9] Every surge suppressor has a voltage rating. The listed rating is called the "clamping voltage," which is a measure of the maximum voltage that will reach the protected devices plugged into the surge suppressor. The clamping voltage normally ranges from 330 volts to 600 volts.

Metal oxide varistors ("MOVs") are the elements that manufacturers place inside the devices to absorb any energy that may occur from a voltage surge or other power variance. Typically, MOVs are slightly smaller than a nickel, and about as thick.

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[7] Id.

[8] Most of the information in this section was derived from Dave Olson's article in Fire Findings Newsletter, Summer 1999 version, Vol. 7, No. 2. Dave Olson is an engineer with MDE Engineers, Inc. in Seattle, Washington. Over the past several years, he has developed a greater expertise for investigating surge suppressor failures.

[9] "That Old Lesson: Just because someone says it's so, doesn't mean it is," Fire Findings Newsletter, Summer 1999, Vol. 7, No. 3.

Their energy absorbing capability is due to their construction – they contain a disk coated with zinc oxide, which has leads attached to the opposite surfaces. The entire disc is then encased in a ceramic material. MOVs will not protect electrical devices from a lightning strike; rather, they are designed to dissipate brief increases in power.

The MOV's function, greatly simplified, is like a pressure release valve. When the voltage in the product that is plugged into the suppressor exceeds the "transition voltage" for the suppressor (usually about 150 volts RMS for typical plugstrips), the MOV conducts and "clamps" the voltage until the surge is dissipated. The energy from the surge is dissipated as heat within the MOV. The temperature of the MOV disk varies from ambient room temperature to several hundred degrees Fahrenheit after a surge has been absorbed. The more energy in the surge, the higher the MOV disk temperature. Under such situations, experts have found three common ways that MOVs can fail within the product, and potentially cause a fire.

First, an MOV can have internal damage to the disk, causing the resistance of the device to drop to nearly zero. When power is applied in the form a surge, the disk usually blows apart, disconnecting from the power before a circuit breaker or other protective device can function. This type of failure will not usually cause a fire, but because there is no more protection by the MOV, subsequent power variances will likely damage to the devices plugged into the strip.

Second, an MOV can fail, but still have moderate resistance, leaving the MOV continuously operating and dissipating a few watts of energy regardless of the applied voltage. The heat that the MOV produces can then discolor the plastic case. Again, this failure may not cause a fire, but the failure of the MOV means that the devices plugged into the suppressor may not be protected.[10]

The third type of failure is the one most likely to cause a fire. If the resistance in a failed MOV is low, but not zero, the current through the failed MOV hovers at about 8 amps, and the MOV consistently dissipates about 960 watts of energy.[11] The heat generated can quickly damage and potentially ignite the plastic case of the suppressor.

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[10] Whether there is any protection will depend upon whether there are any functioning MOVs remaining in the suppressor. Many surge suppressors, particularly the most expensive ones, have three MOVs connected between the phase and neutral, phase and ground, and ground and neutral conductors. However, some surge suppressors contain only one MOV, which increases the risk of damage to the suppressor and to devices plugged into it, as well as the fire risk.

[11] Even if the suppressor is equipped with a circuit breaker, this consistent dissipation does not normally trip it because the current is within the 15-amp rating of most plugstrip circuit breakers.

A laboratory test conducted by Dave Olson of MDE Engineers simulated this failure, and the test produced open flames in less than 5 minutes.

There are now standards in place that may regulate the problem associated with failed MOVs overheating. In 1998, Underwriter's Laboratories, Inc. enacted Standard 1449, entitled "Transient Voltage Surge Suppressors," which includes a requirement that supplemental thermal or overcurrent protection be included in plugstrips. However, many suppressors and plugstrips on the market today do not have overcurrent or thermal protection. In fact, further testing by Olson revealed that many surge suppressors contain only one or two MOVs (the safest designs include three), which subjects the appliances that are plugged into them to greater risk of damage, and further increasing the chance that the only MOVs in the device may fail, subsequently overheat, and eventually cause a fire.

Despite the fact that recalls for surge suppressors have been issued, most consumers do not keep the packaging for their suppressor products, so even if they learn of a recall, they may not be able to identify a product. However, if a fire occurs and a surge suppressor is suspected to be involved, the most helpful subrogation tactic is to hire a cause and origin expert who will collect appropriate evidence from the scene. Olson, for example, recommends that experts gather as many parts and pieces of the suppressor as possible. Careful attention should be paid to identifying and retaining the following:

1. the three bus bars (phase, neutral and ground);
2. the power cord and plug;
3. the circuit breaker and power switch (if any);
4. the MOV disks and the remains of the MOVs' ceramic outer coatings;
5. a fuse or TCO;
6. any devices that were plugged into the suppressor, including their plugs, plug-in transformers, etc.; and, as always,
7. any other evidence that will help rule out all other possible causes in the area of origin.

Unfortunately, there is no quick or inexpensive way to determine whether an MOV in the device has failed and is therefore creating a dangerous fire hazard. However, purchasing newer devices, with lower "clamping voltages," and thermal cut-out devices may help prevent disaster. Moreover, because it is the plastic case that ignites when MOVs fail, metal surge suppressors are safer products.

C. Halogen Lights

During the last several years, a line of products whose recalls have received particular press attention are lamps containing halogen bulbs. Halogen bulbs are efficient and produce a great deal of light. Furthermore, because they are not expensive to produce, they are attractive to consumer and manufacturer alike. However, the small, glass-encased bulbs produce a great deal of heat, and therefore the lamps can become a severe fire hazard.

Tests conducted by the CPSC, the results of which were made public and featured in television shows such as "60 Minutes," revealed that tubular halogen bulbs of 250 watts, 300 watts and 500 watts could easily start a fire in nearby combustible materials. The bulbs can reach temperatures ranging from about 970 degrees Fahrenheit for a 300 watt bulb to 1,200 degrees for a 500 watt bulb.[12] The bulbs have ignited curtains, clothes that were accidentally thrown on top of the lamps, and even moths that have come in contact with the bulb, leading to larger fires.

Halogen bulbs in portable worklights (or trouble lights) are prone to causing fires because the wire cage around the bulb often does not prevent contact with combustibles. However, halogen torchiere lamps, because of their design and more consistent use, are more dangerous. Halogen torchiere floor lamps are free-standing lamps with a shallow bowl-shaped light fixture mounted on top of a 6-foot pole. In August of 1997, the Consumer Products Safety Commission announced that there were widespread problems with halogen torchiere floor lamps. The CPSC, working with the manufacturers of the lamps, issued an alert calling for the repair of 40 million floor lamps.

At the time of the August 1997 recall, the CPSC was aware of at least 189 fires and 11 deaths since 1992 involving halogen torchiere lamps. The CPSC informed users that the industry was making free wire guards available to consumers through a cooperative effort with many retail stores. Installing the wire guard over the glass bulb shield should reduce the potential fire hazard by making it harder for flammable materials to touch the lamp's halogen bulb. In order to be effective, the guards must be used with the 300 watt bulb only.

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[12] Diversified Products Inspections, Inc. Newsletter, January 1999, Deltona, Florida.

Thankfully, a revised Underwriters Laboratories ("UL") standard for halogen torchiere floor lamps manufactured after February 5, 1997 offers an improved level of safety. Most models meeting this standard are already equipped with the previously mentioned wire guard, and the higher-wattage bulbs are not used in the newer lamps.

D. Christmas Lights

Typically, every Christmas season, one or more recalls are issued for holiday "string-style" lights. Many of the faulty lights are made overseas and imported to the U.S., where they are sold cheaply. The lights, however, are often no bargain because they are usually constructed poorly and do not have the safety devices necessary for the lights to be considered safe.

If the wiring is undersized, as is the case in most of the recalled lighting listed on Table C (attached hereto), the wires produce more heat than the insulation surrounding the wires can withstand. This heat may be sufficient in and of itself to ignite nearby combustibles, and in the case of Christmas lights, this ignition source is literally hung on its fuel source. The insulation on the wires of the Christmas lights can also eventually melt away, leading to an arcing condition. Arcing produces temperatures in the thousands of degrees and can ignite almost anything that is combustible as long as the arcing continues for a long enough time.

Notably, there are Christmas lights available for purchase that are much safer than others. As a general rule, the strings of lights that contain a fuse near the plug are a much safer alternative. This fuse protects against overheating because it is designed to cut power to the lights if even a 2-amp power variation is detected. A standard household fuse will not cut power to the lights unless the power variation exceeds 15 amps, so this built-in fuse provides more than 7 times the protection that a standard circuit breaker provides.

III.
WASHINGTON'S PRODUCT LIABILITY ACT

Even when a subrogation case involves a product that was the subject of a recall, a product liability case is not easy to prove. Product liability law in the state of Washington was dramatically changed in 1981 when the Washington State Legislature adopted the Washington Product Liability Act ("WPLA"). Codified under RCW 7.72 <u>et</u>

seq., the Legislature modeled Washington's product liability law after Section 402A of the Restatement (Second) of Torts.[13]

The Three "Types" of Product Liability Claims

Typically, product liability suits under the WPLA involve one of three specific claims. The first is a "manufacturing defect" claim, which involves arguing that the product that caused the fire failed to meet the manufacturer's quality standards or failed to perform its intended function. It follows logically that only a small number of products in a product line will contain manufacturing defects. By contrast, the second specific claim is a "design defect" claim. A product with a design defect may meet the manufacturer's specifications and quality standards, but still be unreasonably dangerous. Finally, a product liability claim may be based on an "inadequate warnings" theory. This involves arguing that the product is not reasonably safe because the manufacturer or distributor did not adequately warn the consumer about how to properly use the product, nor did they fully explain any potential dangers.

All three of these theories can be used when litigating a suit involving a recalled product. Most of the products discussed above, however, would be candidates for a "design defect" cause of action because the entire product line appears unreasonably dangerous.

The WPLA, as applied, has generally been interpreted to apply a "strict liability" standard in cases involving allegations of defective design.[14] The plaintiff in a defective design case is required to establish that the product was not reasonably safe as designed, using either a "risk utility" test or the "consumer expectations" standard.[15] The risk utility test involves a showing that at the time the product was manufactured, the likelihood and gravity of harm caused by the product outweighed any burden on the manufacturer to design a safer product.[16] Alternatively, under the consumer

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[13] See Ulmer v. Ford Motor Co., 75 Wn2d 522, 452 P.2d 729 (1969).

[14] Anderson v. Weslo, Inc., 79 Wn. App. 829, 906 P.2d 336 (1995).

[15] Ayers v. Johnson & Johnson, 117 Wn.2d 747, 818 P.2d 1337 (1991).

[16] Bruns v. Paccar, Inc., 77 Wn. App. 201, 890 P.2d 469 (1995).

expectations standard, the plaintiff is required to establish that the product was unsafe to an extent not contemplated by the reasonable consumer.[17]

However, even assuming that a plaintiff can, using this test, show that the product was defectively designed, there are several defenses available to the manufacturer that warrant discussion.

A. Useful Safe Life

The WPLA establishes that a product's "useful safe life" is 12 years from the date of delivery/purchase. This creates a presumption that a product has exceeded its useful safe life after 12 years, and that thereafter, the consumer can no longer simply expect that the product will operate correctly. Most of the recalled products discussed herein are relatively new to the market, but homeowners will likely use them for many more years. If these products cause fires (or otherwise fail) after 12 years in use, the manufacturer has a strong argument for the dismissal of the product liability suit.

The useful safe life presumption is rebuttable, but it can only be overcome by establishing (by a preponderance of the evidence) that the damage in fact occurred within a time period in which this product should have been free from defects and operating correctly. Although it seems logical that an argument that the product should safely operate for more than 12 years would be based on "common sense," experts in the field would be necessary in order to establish this fact by a preponderance of the evidence. There are also a few exceptions to the useful safe life rule, which are listed in RCW 7.72.060(1)(b).

B. Statute of Limitations

Apart from the fact that the product must be less than 12 years old at the time of the loss, product liability claims still must satisfy the statute of limitations. In Washington, suit must be brought within 3 years of the date that the plaintiff discovered or reasonably should have discovered the damage and its cause. This statute of limitations is codified in RCW 7.72.060(3).

C. Operator Error/Abuse of the Product

Manufacturers will often defend a product liability suit by claiming that the failure of the product was caused by the misuse of the product (operator error), or by some abuse inflicted on the product by the consumer. For example, electric cords can

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[17] Id.

be pinched, twisted, or crimped while they are being used, causing damage that may lead to an arcing condition. Because cords are usually located very close to the product and therefore in the area of the fire's origin, manufacturers frequently claim that there was abuse to the cord that caused it to arc and cause the fire.

One of the best tools to use in determining whether this defense might be successful is to have an expert carefully examine the damage pattern on the electrical wiring of the product. Clearly, the only way to diffuse this defense is through expert involvement in the case. It is therefore even more vital to have an expert investigate the loss as soon as it is reported. If the cause is electrical, or an electrically-powered product is suspected to be involved, it is often prudent to hire a cause and origin investigator with electrical engineering experience.

The location of damage on a length of energized conductor can reliably indicate where the fire first started If the first damage, for example, is inside a surge suppressor, it is unlikely that the consumer caused the damage. This underscores the importance that the evidence at the scene be carefully examined, marked, and retained. Moreover, an expert's extensive documentation of the loss scene, with photographs and video, if appropriate, may help reduce the effectiveness of this argument, especially when the target defendant also had an opportunity to visit the scene before it was altered.

D. Inability to Make the Product Safer

As indicated above, the Washington courts have generally used a strict liability standard to apply to design defect case, and have evaluated the cases based on the consumer expectations standard or the risk-utility test. However, since the passage of the WPLA (which was based on the Restatement (Second) of Torts), the American Law Institute (ALI) has approved a Final Draft of the Restatement (Third) of Torts: Products Liability (Proposed Final Draft, 1997). The new Restatement is almost a complete overhaul of the Restatement (Second) as it concerns the liability of commercial sellers of products, and if it gains broad acceptance, a design defect case may become more difficult to prove.

Under the Restatement (Third), a "reasonableness test" is the only means of establishing liability for injuries/damages caused by defectively designed products.[18] The Restatement (Third) expressly rejects the "consumer expectations" test as an independent standard for judging the defectiveness of a product design because, it

[18] See Restatement (Third), Section 2, Cmt. d.

explains, that standard does not give adequate consideration to the possibility of a reasonable alternative design.[19] The Restatement (Third) also requires a plaintiff to prove that a reasonable alternative design could have been practically adopted at the time the product was sold,[20] and requires that the alternative design be "sufficiently safer" than the actual design. Accordingly, if this version of the Restatement gains acceptance in the courts, a plaintiff may be required to present expert testimony establishing that a sufficiently safer alternative design was available when the product was manufactured. Otherwise, the defendant manufacturer may be able to avoid liability for any damage caused by the product.

IV.
CONCLUSION

Fires that give rise to product liability cases, as a general rule, are difficult to prove and do not often resolve short of litigation. If a fire occurs and subrogation appears to be a possibility, it is vital to involve experts and subrogation counsel in the claim as soon as the loss is reported. Armed with a better understanding of some of the dangerous products on the market today, the adjuster, the expert and subrogation counsel stand a better chance of successful products claim because the investigation can be thoroughly conducted, defenses can be anticipated and diffused, and evidence of defects in the product (such as those in a recall) can be effectively presented.

[19] See Restatement (Third), Section 2, Cmt. g.

[20] See Restatement (Third), Section 2, Cmt. d.