

**Excerpted from  
Fighting Over Words OUP 2008 75-119  
Roger W. Shuy**

**Section III**

**Product Liability and Warnings**

A relatively recent development in law is referred to as product liability. Product liability cases are ones in which a plaintiff alleges injury caused by a product that had been used, holding the manufacturer, and/or distributor of that product liable for such damage. This may seem straightforward and simple, but it is not that easy. For one thing, the plaintiff may have misused the product, may not have followed usage instructions properly, or may have ignored printed warnings on the label or elsewhere. Or the product's potential dangers may be so widely understood that expressing a warning might seem unnecessary, if not ludicrous. On the other hand, the manufacturer may have failed to foresee possible misuses of the product, possible misunderstandings created by the instructions or warning messages, or otherwise failed to meet accepted and conventional standards set for the product itself or for the written materials concerning it.

In product liability cases, as in other areas such as contract disputes, the standard involves an enigmatic "ordinary person." When the product is to be made available to a consumer, that consumer is to be considered an "ordinary consumer." Since standards of what constitutes "ordinary" have not been clear, sometimes courts refer to such things as dictionaries to try to sort this out. But the fact remains that we don't really know how ordinary an ordinary person has to be nor have we determined the characteristics and qualities that underlie such a designation very clearly.

The major task of linguistics in product liability cases has to do with the text of warning messages (Tiersma, 2004; Dumas 1992; Shuy 1990). It is not likely that a linguist can determine the foreseeability of any misuses of the product, which is more the territory of specialists such as engineers, physicians, and pharmacists. But when a foreseeable misuse is recognized by the manufacturer and steps are taken to warn about it, the linguist's job becomes apparent. In the same way, linguists can be of assistance in efforts made to analyze written instructions on how the product should be used as well any other ways the manufacturer uses language, including advertisements (see chapters 5, 6, and 7).

Warnings related to products require the manufacturer to do a number of things. First they should identify and describe the nature and danger of the risk. Then they should tell the reader how to avoid it. Finally they should communicate these things in clear and understandable language. To accomplish the latter, the following principles should be followed:

1. The warning must capture the attention of the readers. If they don't see it, they won't attend to it and they obviously won't read it.
2. The warning must be written in such a way that it is understandable to the "ordinary person." But the fact that the intended audience of some warnings, such as prescription medicines, is the professional medical community, suggests that no single "ordinary reader" is always the goal.
3. The warning should be as direct and explicit as possible. Expressions such as, "Do not use in large amounts," are imprecise and therefore easily subject to misinterpretation, if not lawsuits. Explicitness and directness of the warning suggest that it not simply describe the possibly dangerous ingredients in a product and then expect the reader to infer the association of those ingredients with that product.
4. The warnings should be visibly readable and comprehensible. This includes appropriate and readable print size, page arrangement, text sequencing, and document design as well as effectively written, understandable prose.
5. The warnings must not be written in such highly complex syntax and vocabulary that will discourage "ordinary persons" from persevering through the warning's text. Document design plays an important role here also. The use of print size, type, color, orthography, and allowance for "white space" may contribute greatly to the warning's language clarity or obfuscation.
6. The warning should alert the reader to a specific hazard, the degree of seriousness of the hazard, the consequences of the hazard, and how to avoid the hazard.

These principles are guides for appropriate linguistic analysis. In addition, linguists can compare the standards about warnings required by various government regulatory agencies (when such exist) with the actual language used on the product warning statements. Sometimes the manufacturer includes all of the necessary information, but in ways that serious hazards appear to be minimized. If the appropriate regulatory standards say that certain words *must* be present, the manufacturer may make an effort to comply but, at the same time, try to state these dangers in a less alarming and, therefore, less helpful way. In extreme cases, the manufacturer may omit parts of the regulatory requirements or sequence them in such a way that the dangers are less apparent.

One growing issue in the US and other countries is that "ordinary persons" may not speak the language of the warnings at all or, if they do, they may not be proficient enough to understand them. Some American manufacturers now include warnings in more than one language, usually Spanish, but there are no US federal or state laws requiring this. Tiersma (2002) points out that some cases have followed the principle that a warning only in English may be insufficient if the manufacturer promotes its products bilingually and if that manufacturer could have foreseen that non-English speaking users would not understand the warning made only in English.

The linguists' task is to reach into their kit of linguistic tools and use the ones that make the best case for either the plaintiff or the defendant. As in all other forms of consulting, one cannot do this in a biased fashion, selecting only the tools that make the case for one side or the other. The linguist analyzes the language and should be able to perform the same linguistic analysis for either side (Shuy 2006). Bear in mind, however, that a linguist is not able to get into the mind of either the sender of the message or the receiver of it. Defendant manufacturers are required to write messages in such a way that will ensure that it is possible for plaintiff consumers to interpret these messages adequately enough to be warned about the potential dangers involved. Communication involves a Sender, a Message, and a Receiver. The linguist's job is to analyze the Message for what *range of meanings it could hold* for both the Sender and the Receiver. What the individual Sender actually intended is not within the domain of linguistics. Neither is it what the individual Receiver actually understood.

Following are four product liability cases in which linguistics was used. Three deal with the language of the hazard warnings. One problematic hazard statement was printed on the can of a product used to clean the hulls of commercial ships. The second concerned the hazard statements contained in the owner's and operator's manuals of generators used in recreational vehicles. The third product liability case involved warnings about Toxic Shock Syndrome (TSS) on a feminine hygiene product. Although the major use of linguistics in product liability cases to date has been centered on warning labels, this is not the only type of case in which linguistics can be helpful, as the fourth case illustrates. It concerns the communication between a pilot and various ground control centers throughout the flight, showing that oral language can also be the evidence in product liability cases.

References related to language and product liability that linguists can find helpful:

Cushing, Steven. 1994. *Fatal Words: Communication Clashes and Aircraft Crashes*. Chicago: University of Chicago Press.

Dumas, Bethany. 1992. "Adequacy of Cigarette package warnings: an analysis of the adequacy of Federally mandated cigarette package warnings." *Tennessee Law Review*, Vol. 59, 261-265.

Grice, H. Paul. 1975. "Logic and Conversation." In Peter Cold and Jerry L. Morgan, *Syntax and Semantics*, vol. 3. New York: Academic, 41-58.

*Guidelines for Document Designers*. 1981. Washington DC: American Institute for Research.

Searle, John R. 1969. *Speech Acts: An Essay in the Philosophy of Language*. Cambridge: Cambridge University Press.

Shuy, Roger W. 1990. Warning labels: Language law and comprehensibility. *American Speech* 65.4, 291-303.

Shuy, Roger W. 1993, Language evidence in distinguishing pilot error from product liability. *International Journal of the Sociology of Language*. 100/101, 101-114.

Tiersma, Peter.2002. "The language of law of product liability warnings." In Janet Cotterill (ed.). *Language in the Legal Process*. Houndmills: Palgrave Macmillan, 54-71.

## A Ship Worker Brain Damaged by a Cleaning Product

**Pedro Lassera v. Magnaflux Corporation**  
**Civil Action Number 85-19736 (20)**  
**Florida Bar Number 253952**

At an Eastern US port city where ocean-going ships come for service, vessels periodically dock for cleaning and repair. The cleaning task is usually assigned to low-level laborers who often have minimal skills in English. These workers usually have to work in tightly enclosed areas, sometimes with very poor lighting and limited ventilation.

In one of these cleaning operations, a worker named Pedro Lassera suffered severe brain damage which was alleged to have been caused by the chemicals in the commercial cleaner that he used. His family then brought a product liability tort against the manufacturer of the product, Magnaflux, claiming that the warning label on the can was inadequate and that this led to his injury. Investigations revealed that Mr. Lassera never claimed to have read the warning on the can. The plaintiff believed, however, that his supervisor, who worked outside the enclosed work area, should have read the warning and taken appropriate steps to protect Mr. Lassera from suffering the injury. The warning label became a major issue in the case

### **Data:**

#### **1. The Regulatory Standards:**

In this case industry safety standards played an important role. In 1982 the American National Standards Institute produced a forty-page document on standards for industrial chemicals, including precautionary labeling. (ANSI Z 129.1). It was the most recent and relevant version at the time of Mr. Lassera's accident. Among other standards for hazard labels are the following:

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- statements should be expressed as simply and briefly as possible on labels affixed to containers
  - the language shall be practical--not based alone upon the inherent properties of a product, but directed toward the avoidance of hazards resulting from the occupational use, handling and storage that may be reasonably foreseeable.
  - The Signal Word shall indicate the relative degree of severity of a hazard in the diminishing order of DANGER!, WARNING!, and CAUTION! When a product has more than one hazard, only the signal

word corresponding to the class of greatest hazard shall be used.

• The following subject matter shall be considered for inclusion on precautionary labels: (1) Identity of product or hazardous components, (2) signal word, (3) statement of hazards, (4) precautionary measures, (5) Instructions in case of contact or exposure, (6) antidotes, (7) notes to physicians, (8) instructions in case of fire and spill or leak, and (9) instructions for container handling and storage.

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Immediately following the above standards the same ANSI document provides thirty pages of examples about how manufacturers should produce precautionary texts for many different types of hazards.

In addition to the above requirements, the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA), requires companies producing relevant products to fill out a form called the Material Safety Data Sheet. Magnaflux filled it out, noting that its product contained 97% Trichloroethane and 3% Carbon Dioxide. On the "Fire and Explosion Hazard Data" section of this Material Safety Data Sheet, Magnaflux explained that aerosol cans should be cooled with water, that they may burst if heated above 130 degrees Fahrenheit, and that vapors can decompose to toxic gasses when exposed to flame, arc, or red hot surfaces. Effects of overexposure include initial dizziness, followed by eventual loss of consciousness. If exposed, the user should be "removed to fresh air" and if the material gets in the eyes, they should be "rinsed copiously with water." Magnaflux also reported, "the Cleaner exerts drying action on skin, leading to irritation and should be wiped off immediately." The manufacturer also noted that the hazardous decomposition products of the product included "phosgene, hydrochloric acid if vapors are exposed to flame, arcs, or red hot surfaces." Under OSHA's request for Special Protection Information, Magnaflux advised that the user should be masked with a separate air supply if the product is used in confined areas.

**2. The container:** The container for the cleaner was a cylindrically shaped metal can.

The front side of the can contained the following text (type size is reproduced as nearly as possible to that of the original container):

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**Magnaflux**  
**Cleaner/Remover**

**SKC\_NF/ZC-7B**

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**Non-Flammable**

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Formulated to meet sulfur and halogen requirements  
for NAVSHIPS 250-1500-1, MIL-1-25135. ASTM E165.

---

**Contains No Fluorocarbon Propellants**

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Net Weight: 13 ounces

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MAGNAFLUX Corporation  
Chicago, Illinois 60656 USA

® Trade Mark Reg U S Pat Off. Marca Registrada en Mexico

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The back-side of the can contained the following:

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**Warning: Material can be hazardous to health if not used according to instructions. Contents under pressure.**

Contains: Methyl Chloroform.  
Use only in well ventilated area.  
Avoid contact with eyes or skin and breathing of vapor or spray mist.  
In case of contact with eyes flood repeatedly with water.  
If swallowed, do not induce vomiting.  
If overcome by vapors, remove to fresh air.

In above cases call a physician immediately. Wash skin with soap and water.  
Do not puncture, incinerate or store above 120ø F (48ø C).

**For industrial use by qualified personnel only**

**Not for household use.**

**Keep out of reach of children.**

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**Directions: Cleaner/Remover**

MAGNAFLUX Corporation Cleaner/Remover is intended for use with Spotcheck and Zyglo penetrant systems, and other penetrant systems, and other MAGNAFLUX Corporation test methods and materials.

**Use As A Precleaner:**

To be used as a precleaner to remove oily residues. Apply directly to test area, wipe clean with cloth. Repeat until clean. Allow test area to dry before further processing.

**Use As A Penetrant**

**Remover**

To be used as a penetrant remover. apply Cleaner/Remover to clean cloth and wipe excess penetrant from surface. Repeat until surface is free of penetrant.

Do Not Flush Surface With Remover As Sensitivity May Be Impaired.

### **Linguistic analysis:**

When the lawyer for Mr. Lassera called me, he asked that I try to determine the clarity, or lack thereof, of the warning label on the product's container. After I discovered a number of problems and discussed them with him, he represented to the Court that I would be called as an expert witness in the case. This, of course, led to my deposition, which took place in March of 1988. There I pointed out that the wording was not prominent in terms of relationship to the potential danger of the ingredients, that the communication of the hazards that users might encounter was not clear, and that the advice given about what to do if users got into trouble using the product was not explicit or clear. I stressed the indirectness of the warning language, which could cause readers to have to infer the danger. I called attention to the discourse sequencing of points within the warning statements, which often placed the least crucial information ahead of the most crucial. I pointed out that the more specific the warning, the more likely it is to be heeded. I stressed the usefulness of being personal rather than general, and that the warning could be more salient if it were placed on the front of the can, not on the back. The label contained no information at all about how a user could avoid the dangers of the product. The gist of my testimony was that the label was not user-friendly and that it was couched in words that made the product look less dangerous than it really was.

Since Mr. Lassera was a monolingual Spanish speaker, the issue of whether or not he could even read the warning label was discussed. I opined that in such events there is likely to be a chain of responsibility from Mr. Lassera's supervisor to Mr. Lassera. The opposing lawyer didn't disagree.

Throughout the deposition, the opposing lawyer kept asking me how I would have written the warning label to make it better. To that point I had not tried to revise it but the more he asked me, the more I thought it might be a good idea to do so, even though it is not the responsibility of the expert to create such work for either the plaintiff or the defendant. After the deposition, the attorney I was working with and I decided that I should take a crack at redesigning the entire can so that we could use it at trial. The following is what I came up with:

On front of the can:

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**MAGNAFLUX**  
**Cleaner/Remover**  
**SKC-NF/ZC-7B**

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**DANGER/CAUTION**

This product contains methyl  
chloroform which causes dizziness,  
loss of consciousness or even death.

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**TO PREVENT DANGER:**

- Use only in ventilated areas
- If you use in confined areas,  
mask with air supply
- Follow all directions carefully

**DO NOT**-breathe vapor spray or mist

**DO NOT**-allow contact with eyes or skin

**DO NOT**-use near flames or heat

**DO NOT**-puncture, incinerate or store  
above 129 F (48.8 C)

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**Non-Flammable**

Meets sulfur and halogen requirements for  
NAVSHIPS 250-1500-1, MIL-1-25135, ASME-V,  
RDT 3-6T.

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**Contains NO Fluorocarbon Propellants**

**Net Weight 13 Ounces**

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**MAGNAFLUX Corporation**  
**Chicago, Illinois 50656 USA**

\* trademark Reg. U.S. Pat. Off. Marca Registrado en Mexico

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On the back of the can:

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<b>First Aid:</b>	<b>If user becomes dizzy or unconscious:</b> <ul style="list-style-type: none"><li>• provide fresh air immediately</li><li>• call physician</li></ul> <b>If user swallows the product:</b> <ul style="list-style-type: none"><li>• call physician immediately</li></ul>	<ul style="list-style-type: none"><li>• <b>do not induce vomiting</b></li></ul> <b>If product touches your eyes or skin:</b> <ul style="list-style-type: none"><li>• flood eyes immediately</li><li>• wash skin with soap and water</li></ul> <ul style="list-style-type: none"><li>• call physician immediately</li></ul>
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<b>Directions: MAGNAFLUX Corporation Cleaner/Remover is intended for use with Spotcheck and Zyglo penetrant systems and other MAGNAFLUX Corporation test methods and materials. For industrial use by qualified personnel only. Not for household use. Keep out of reach of children. Use as a pre-cleaner to remove only residues. Apply to test area, wipe clean.</b>	<b>with cloth. Repeat until clean. Allow test area to dry before further processing. Use as a penetrant remover. Apply Cleaner/Remover on clean cloth and wipe excess penetrant from surface. Repeat until surface is free of penetrant. Do not flush surface with remover or sensitivity may be impaired.</b> Label No. 4-3571-00
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The major differences between my revised can label and the one produced by Magnaflux were:

On the front of the can:

1. Placing the Danger sign right after the product's name
2. Following this with how to prevent risks

On the back of the can:

1. Showing specific signals of danger
2. Providing specific instructions about what to do in case of dangerous contact with the body

Certain aspects of the original label were kept, including such things as the directions for using the product.

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This case was fertile for applying principles of effective discourse structure, the value of directness over indirectness, the pragmatics of warning and advising, combined with the

essentials of effective document design. As it turned out, the case was settled before trial and my revised label for the Magnaflux can was never tested in court.

## 9

### **A Family Overcome by Monoxide Gas While Sleeping in Their Fifth Wheel Trailer**

**Eva Andrews et al. v. Adobe Trailer Sales, Fleetwood Enterprises, and Generac Corporation**  
**Cause No. CV 99-112-M-DWM**  
**US District Court for the District of Montana**  
**Missoula Division**

Some people take vacations in recreational camping trailers pulled by pick-up trucks. Others make the trailer their home. The Andrews family worked for a traveling carnival and lived in their trailer year round. One night, shortly after they had purchased a new trailer, Mr. Andrews woke up dizzy and vomiting. He had a hard time awakening his wife, who was quite ill as well. They suspected something bad, but never more so than when they couldn't awaken their young son at all. He was rushed to a nearby hospital, where all three were diagnosed with carbon monoxide poisoning.

The parents lost valuable work time but their son fared much worse, apparently suffering from permanent brain damage. They sought and found a lawyer, who helped them bring a product liability suit against Generac, the manufacturer of the generator, Fleetwood, the manufacturer of the trailer, and the dealer in Phoenix who sold it to them. At first it was difficult to determine exactly who was responsible for their medical problems. The manufacturer gives buyers the option of having an Onan generator installed at the factory or letting the customer have either an Onan or another brand installed by the dealer at the time of purchase. In this case, the Andrews opted to have their dealer install a Generac generator instead of the factory installed Onan, obviously placing some responsibility on Generac.

This case called for two areas of expertise: an engineer, who could examine the method of installation, and a linguist, who could examine the warning messages in the owner's manuals of the Generac generator and Fleetwood, the manufacturer of the Adobe model RV. The relevant parts of the owner's manuals are excerpted below, along with relevant quotes from the regulations of the American National Standards Institute. As the litigation progressed, the focus came to be entirely on Generac.

**Data:**

The data in this case included the ANSI standards, the relevant hazard statements written by Genrac, the maker of the generator used by the buyers, the hazard statements written by Onan, maker of the generator not selected by the buyers, and the hazard statements written by Fleetwood, the manufacturer of the RV. By using the comparative method, the differences and similarities between the ANSI standards and these three contributing companies could be discovered.

**1. The American National Institute of Standards (ANSI) Standard on Recreational Vehicles**

The standard covering recreational vehicles is also acted upon by the National Fire Protection Association, Inc. (NFPA). This case was covered by ANSI A119.2/NFPA 501C, 1993 edition. The relevant portions of this standard are as follows:

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2-6.3.2 Location of Flue Gas Outlets of Fuel-Burning Heating Appliances.  
...Flue gas outlets shall not terminate underneath a recreational vehicle.

**Sample Warnings**

2-9.1.2.2 cooking area

**WARNING: IT IS NOT SAFE TO USE COOKING  
APPLIANCES FOR COMFORT HEATING**

Cooking appliances need fresh air for safe operation.

Before operation:

1. Open overhead vent or turn on exhaust fan, and
2. Open window.

2-9.1.2.3 LP-Gas container

**DO NOT FILL CONTAINER(S) TO MORE THAN  
80 PERCENT OF CAPACITY**

2-9.1.2.6

The following label has been placed in the vehicle near the range area:

**IF YOU SMELL GAS:**

1. Extinguish any open flames, pilot lights, and all smoking materials.

2. Do not touch electrical switches.
3. Shut off the gas supply at the tank(s) valve(s) or gas supply connection.
4. Open doors and other ventilating openings.
5. Leave the area until odor clears.
6. Have the gas system checked and leakage source corrected before using again.

2-9.2.3 gas odors (repeats 2-9.1.2.6. above)

2-9.2.4 Warning Label for Cooking Appliances:

A permanent warning label with the word “WARNING” with 3/8-in. (9.5-mm) high letters and body text with 1/8-in. (3.2-mm) high letters shall be affixed in a conspicuous manner adjacent to fuel-burning ranges and shall read:

WARNING: IT IS NOT SAFE TO USE COOKING  
APPLIANCES FOR COMFORT HEATING

Cooking appliances need fresh air for safe operation.

Before operation:

1. Open overhead vent or turn on exhaust fan, and
2. Open window.

2-10.2.2 label near fuel filter cap of generator

CAUTION: DO NOT PUT FUEL IN TANK  
UNLESS  
GENERATOR IS INSTALLED AND FUEL LINES  
ARE CONNECTED.  
CHECK ALL CONNECTIONS FOR LEAKAGE.

3-3.4 Operational Check Warning Label.

A permanent label shall be installed in a visible location on or within 24 in. (610 mm) of the smoke detector with the following text in contrasting letters at least 1/8 in. (3.2 mm) high:

WARNING  
TEST SMOKE DETECTOR OPERATION AFTER  
VEHICLE HAS BEEN IN STORAGE,  
BEFORE EACH TRIP, AND  
AT LEAST ONCE PER WEEK DURING USE.

3-4.3 Internal Combustion Exhausts.

Exhausts from internal combustion engines shall not terminate under the vehicle. Exhausts shall extend beyond the periphery of the vehicle so that exhaust gases discharge away from the vehicle ... Internal combustion engine exhaust shall not terminate so that a communicable air passage exists into the living area within an area defined as a distance of 6 inches (152.4 mm) as measured from the tailpipe termination perimeter as projected

onto the vehicle side. Regardless of the location of vehicle exhaust, vents or windows that can be opened shall not be installed in the rear of motor homes and truck campers.

#### 3-4.6 Carbon Monoxide (CO) Detectors

All RVs equipped with an internal combustion engine or designed with features to accommodate future installation of an internal combustion engine shall be equipped with a listed CO detector installed in accordance with its listing.

#### 3-4.7 Internal Combustion Vehicles.

RVs designed for the storage of internal combustion engine type vehicles shall have ventilation, vaportight separation from the living area, and consumer information to provide guidance relating to fire and life safety.

#### 4-6.5.3 Labeling of Potable Water Tank Inlets

Each inlet to a potable water tank shall have an affixed label that shall read:

WARNING: POTABLE WATER ONLY.  
SANITIZE, FLUSH, AND DRAIN BEFORE  
USING.  
SEE INSTRUCTION MANUAL.

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## 2. The Generac Generator Owner's Manual

The thirty page Generac Owner's Manual begins with General Safety Rules for safe operation, starting with this disclaimer:

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Generac cannot possibly anticipate every possible circumstance that might involve a hazard. The warnings in the Manual and on tags and decals affixed to the unit are, therefore, not all-inclusive. If you use a procedure, work method or operating technique Generac does not specifically recommend, you must satisfy yourself that it is safe for you and others.

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About the hazard of carbon monoxide gas, this section of the owner's manual says the following on page 1:

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The generator engine gives off DEADLY carbon monoxide gas through its exhaust system. This dangerous gas, if breathed

in sufficient concentrations, can cause unconsciousness or even death. Have the exhaust properly installed, in strict compliance with applicable codes and standards. Following installation, you must do nothing that might render the system unsafe or in non-compliance with such codes and standards. The generator compartment must be completely vapor sealed from the vehicle interior. There must be no possibility of exhaust fumes entering vehicle interior.

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Page 6 further warns as follows:

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- Engine Exhaust Gases: Before starting the generator engine, you should make sure there is no way for exhaust gases to enter the vehicle interior and endangering people or animals. Close windows, doors and other openings in the vehicle that, if open, might permit exhaust gases to enter the vehicle.

**DANGER! THE GENERATOR ENGINE GIVES OFF DEADLY CARBON MONOXIDE GAS THROUGH ITS EXHAUST SYSTEM. THIS DANGEROUS GAS, IF BREATHED IN SUFFICIENT CONCENTRATIONS, CAN CAUSE UNCONSCIOUSNESS OR EVEN DEATH. DO NOT OPERATE THE GENERATOR IF ITS EXHAUST SYSTEM IS LEAKING OR HAS BEEN DAMAGED. SYMPTOMS OF CARBON MONOXIDE POISONING ARE (A) INCAPABILITY TO THINK COHERENTLY, (B) VOMITING, (C) TWITCHING MUSCLES, (D) THROBBING TEMPLES, (E) DIZZINESS, (F) HEADACHE, (G) WEAKNESS AND SLEEPINESS. IF YOU FEEL ANY OF THESE SYMPTOMS, MOVE INTO FRESH AIR IMMEDIATELY. IF SYMPTOMS PERSIST, GET MEDICAL HELP.**

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Page 9 contained another warning:

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Never operate the generator while the vehicle is parked in high grass, weeds, brush, or leaves. Such materials can ignite and burn from the heat of the exhaust system. The generator exhaust

system becomes extremely hot during operation and remains hot for a long time after it has shut down.

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Warnings about the hazards of batteries (not carbon monoxide) are found on page 14:

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**DANGER! STORAGE BATTERIES GIVE OFF EXPLOSIVE HYDROGEN GAS. THIS GAS CAN FORM AN EXPLOSIVE MIXTURE AROUND THE BATTERY FOR SEVERAL HOURS AFTER CHARGING. THE SLIGHTEST SPARK CAN IGNITE THE GAS AND CAUSE AN EXPLOSION. SUCH AN EXPLOSION CAN SHATTER THE BATTERY AND CAUSE BLINDNESS OR OTHER INJURY. ANY AREA THAT HOUSES A STORAGE BATTERY MUST BE PROPERLY VENTILATED. DO NOT ALLOW SMOKING, OPEN FLAME, SPARKS OR ANY SPARK PRODUCING TOOLS OR EQUIPMENT NEAR THE BATTERY.**

**DANGER! BATTERY ELECTROLYTE FLUID IS AN EXTREMELY CAUSTIC SULFURIC ACID SOLUTION THAT CAN CAUSE SEVERE BURNS. DO NOT PERMIT FLUID TO CONTACT EYES, SKIN, CLOTHING, PAINTED SURFACES, ETC. WEAR PROTECTIVE GOGGLES, PROTECTIVE CLOTHING AND GLOVES WHEN HANDLING A BATTERY. IF SPILLAGE OF FLUID OCCURS, FLUSH THE AFFECTED AREA WITH CLEAR WATER IMMEDIATELY.**

**DANGER! DO NOT USE ANY JUMPER CABLES OR ANY BOOSTER BATTERY TO CRANK AND START THE GENERATOR ENGINE. IF ANY BATTERY HAS DISCHARGED, REMOVE IT FROM THE VEHICLE FOR RECHARGING.**

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The next 15 pages of the Generac Owner's Manual contain information about troubleshooting along with schematic drawings of the generator.

### **3. The Onan Generator Operator's Manual**

Note that the Onan generator is the one that the manufacturer would have installed at the factory if the buyer so wished. The buyer chose instead to have the dealer install a Generac generator. Relevant excerpts from the 15 page Onan manual are included here

for comparison purposes. The manual begins with a page of "Safety Precautions," which includes the following paragraph:

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**• Exhaust Gases Are Toxic**

Never sleep in the vehicle with the generator set running unless the vehicle is equipped with an operating carbon monoxide detector.

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On page 5, in a section called "Operation," the following warnings are given:

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**WARNING  
EXHAUST GAS IS DEADLY!**

**Exhaust gases contain carbon monoxide, an odorless and colorless gas. Carbon monoxide is poisonous and can cause unconsciousness and death. Symptoms of carbon monoxide poisoning can include:**

- Dizziness
- Nausea
- Headache
- Weakness and Sleepiness
- Throbbing in Temples
- Muscular Twitching
- Vomiting
- Inability to Think Coherently

**IF YOU OR ANYONE ELSE EXPERIENCES ANY OF THESE SYMPTOMS, GET OUT INTO THE FRESH AIR IMMEDIATELY. If symptoms persist, seek medical attention. Shut down the unit and do not operate until it has been inspected and repaired.**

**Never sleep in vehicle with the generator set running unless the vehicle interior is equipped with an operating carbon monoxide detector. Protection against carbon monoxide inhalation also includes proper exhaust system installation and visual and audible inspection of the complete exhaust system at the start of each generator set operation.**

**BEFORE STARTING**

**WARNING Exhaust gas presents the hazard of severe personal injury or death. Make sure all the exhaust components are operation-worthy and secure.**

Confirm that vehicle is not parked in high grass or brush.

**WARNING Fire can cause severe personal injury or death. Do not operate the generator set when the vehicle is parked in high grass or brush.**

Do not operate the generator set if exhaust gases will not effectively expel away from vehicle.

**WARNING Exhaust gases can cause severe personal injury or death. Never operate the generator set unless the exhaust system is clear of walls, snow banks, or any obstruction that can prevent exhaust gases from dissipating. Never operate any exhaust fan in the recreational vehicle when the generator set is running. It can draw exhaust gas into the vehicle interior.**

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On page 9, under the heading of Maintenance, is the following:

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#### **EXHAUST**

Examine the exhaust system for leaks. If you have a conventional compartment mount generator set, inspect the compartment for holes which might allow exhaust gas to enter the recreational vehicle. Do NOT operate the generator set if it runs louder than usual, the compartment has holes to the interior, or the exhaust system has leaks.

**WARNING Exhaust gas presents the hazard of severe personal injury or death. If you find any exhaust leaks, do not operate the generator set and have the exhaust system repaired as soon as possible.**

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On the last page of the Onan Operator's Manual, page 15, the following appears:

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**WARNING Exhaust gas presents the hazard of severe personal injury or death. Make sure all components are reinstalled in their original places and the exhaust system is operation-worthy to prevent any exhaust leaks.**

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#### **4. The Fleetwood (Avion model RV) Owner's Manual**

After a one page warranty statement, this 61 page manual begins with a one page “Important Notice,” which includes three warnings about resins used in manufacture that might cause allergic reactions. It is followed by a page called Safety Regulations that contains four warnings about storage, the need for ventilation while cooking, the need to avoid using charcoal grills inside the vehicle, and the flammability of LP gas containers. The following pages warn about using a towing hitch, the braking system, battery operated components, overloading, storage, safe driving, tire pressure, and finally, on page 15, a warning about carbon monoxide, as follows:

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#### **WARNING**

**EXHAUST GASES ARE DEADLY. DO NOT BLOCK THE TAILPIPES OR SITUATE THE VEHICLE IN A PLACE WHERE THE EXHAUST GASES HAVE ANY POSSIBILITY OF ACCUMULATING EITHER OUTSIDE, UNDERNEATH, OR INSIDE YOUR VEHICLE OR ANY NEARBY VEHICLES. OUTSIDE AIR MOVEMENTS CAN CARRY EXHAUST GASES INSIDE THE VEHICLE THROUGH WINDOWS OR OTHER OPENINGS REMOTE FROM THE EXHAUST OUTLET. OPERATE THE ENGINE(S) ONLY WHEN SAFE DISPERSION OF EXHAUST GASES CAN BE ASSURED, AND MONITOR OUTSIDE CONDITIONS TO BE SURE THAT EXHAUST CONTINUES TO BE DISPERSED SAFELY.**

Beware of exhaust gas (carbon monoxide) poisoning symptoms:

Dizziness  
Headache

Weakness and sleepiness  
Nausea  
Vomiting  
Muscular twitching  
Throbbing in temples  
Inability to think coherently

If symptoms indicate the possibility of carbon monoxide poisoning, turn off the engine(s) immediately, get out into fresh air at once, and summon medical assistance.

**WARNING**  
**DO NOT UNDER ANY CIRCUMSTANCES**  
**OPERATE ANY ENGINE WHILE SLEEPING.**

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The next sections are called Living With Your Trailer, Plumbing, Electrical Systems, LP Gas System, Appliances, and Equipment. The latter section contains advice to install a smoke detector (page 44) and finally notes:

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Your trailer may be equipped with an optional carbon monoxide (CO) detector. Usually located in the main sleeping area, it is designed to alert you to the presence of dangerous levels of carbon monoxide in the air.

---

The section on the generator (pages 48-49) includes the following:

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**WARNING**  
**EXHAUST GAS IS DEADLY! EXHAUST GASES CONTAIN CARBON MONOXIDE, AN ODORLESS AND COLORLESS GAS. CARBON MONOXIDE IS POISONOUS AND CAN CAUSE UNCONSCIOUSNESS AND DEATH.**

**PROTECTION AGAINST CARBON MONOXIDE INHALATION ALSO INCLUDES PROPER EXHAUST SYSTEM INSTALLATION AND VISUAL AND AUDIBLE INSPECTION OF THE COMPLETE EXHAUST SYSTEM AT THE START OF EACH GENERATOR SET OPERATION.**

**DO NOT BLOCK THE TAIL PIPE OR SITUATE THE TRAILER IN A PLACE WHERE THE EXHAUST GASES HAVE ANY POSSIBILITY OF ACCUMULATING EITHER OUTSIDE, UNDERNEATH, OR INSIDE YOUR VEHICLE OR ANY NEARBY VEHICLES. OUTSIDE AIR MOVEMENTS CAN CARRY EXHAUST GASES INSIDE THE VEHICLE THROUGH WINDOWS OR OTHER OPENINGS REMOTE FROM THE GENERATOR EXHAUST. OPERATE THE GENERATOR ONLY WHEN SAFE DISPERSION OF EXHAUST GASES CAN BE ASSURED. MONITOR OUTSIDE CONDITIONS TO BE SURE THAT EXHAUST GASES CONTINUE TO BE DISPERSED SAFELY.**

**DO NOT UNDER ANY CIRCUMSTANCES OPERATE THE GENERATOR WHILE SLEEPING. YOU WOULD NOT BE ABLE TO MONITOR OUTSIDE CONDITIONS TO ASSURE THAT GENERATOR EXHAUST DOES NOT ENTER THE INTERIOR, AND YOU WOULD NOT BE ALERT TO EXHAUST ODORS OR SYMPTOMS OF CARBON MONOXIDE POISONING.**

Check the generator exhaust system after every 8 hours of operation and whenever the system or trailer structure may have been damaged, and repair any leaks or obstructions before further operation.

**WARNING**

**DO NOT OPERATE THE GENERATOR WHEN PARKED IN OR NEAR HIGH GRASS OR BRUSH. EXHAUST HEAT MAY CAUSE FIRE.**

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## **Linguistic analysis:**

In written texts, discourse structure is marked by patterns of organization (such as the introduction and recycling of topics), the logic of sequencing of topics, the use of speech acts, such as warning, the semantic differences between the speech acts of warning and advising, and the way certain communicative devices, such as the use of repetition, discourse markers, specificity, and orthographic features, are employed.

## **Topic Introductions**

With conversation data, it is usually helpful to do a topic analysis of the entire conversation, then cull out the significant topics for more detailed analysis. However, in long written documents, such as the evidence here, such a procedure can be time consuming and not entirely helpful. There are, of course, many topics, but the nature of the complaint guides the decision about which ones to examine. The topics I chose to focus on were selected to compare the ANSI standards with the same treatment in the owner's and operator's manuals. I also compared the treatments of these topics by Generac, the defendant, and Onan, the manufacturer of the generator not used. Therefore, only certain salient topics were selected for detailed analysis, as follows:

*Topic: Sleeping in the vehicle while the generator is operating*

The Generac Generator's Owner's Manual provides no topic warning about operating the generator while occupants are sleeping inside the vehicle. The Onan Generator's Owner's Manual, used for comparison here, makes this warning very specifically in its first captioned warning about exhaust gas, on page five:

Never sleep in vehicle with the generator set running unless the vehicle interior is equipped with an operating carbon monoxide detector.

Likewise, the Fleetwood Owner's Manual says on page 16:

**DO NOT UNDER ANY CIRCUMSTANCES OPERATE ANY ENGINE WHILE SLEEPING.**

You would not be able to monitor outside conditions to assure that engine exhaust does not enter the interior, and you would not be alert to exhaust odors or the symptoms of carbon monoxide poisoning.

Fleetwood's lack of explicitness is apparent here. It fails to specify the reference to "engine," which has important comprehension consequences. By not explicitly referring to the generator's engine, this warning runs the risk of allowing the reader to interpret "engine" as a reference to the engine of the towing vehicle or any other engine associated with the RV. By generalizing "engine" in this way, Fleetwood's warning permits the possibility of misunderstanding and confusion by the reader.

*Topic: The need for a carbon monoxide (CO) detector*

Generac presents no topic concerning the need for a carbon monoxide detector and therefore makes no mention of the danger of sleeping while the generator is operating. The comparison Onan Generator's Owner's Manual makes this warning explicit on page 5:

Never sleep in vehicle with the generator running unless the vehicle interior is equipped with an operating carbon monoxide detector.

The Fleetwood Owner's Manual contains a section captioned "Carbon Monoxide Detectors (if equipped)," indicating that a CO detector can alert the user "to the presence of dangerous levels of carbon monoxide in the air." This section describes a CO detector but is not captioned as a warning and does not contain one. Nor does it advise that a carbon monoxide detector must (or even should) be installed. Instead, it uses only expressions such as, "if equipped," and "your trailer may be equipped with an optional carbon monoxide (CO) detector."

Despite Fleetwood's apparent belief that CO detectors are optional, the ANSI regulation for recreational vehicles clearly disagrees:

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ANSI A119.2 NFPA 501C Recreational Vehicles, 1993 edition, at 3-4.6:

Carbon Monoxide (CO) Detectors. All RV s equipped with an internal combustion engine or designed with features to accommodate future installation of an internal combustion engine *shall be equipped with a listed CO detector* installed in accordance with its listing.

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The Fleetwood Owner's Manual describes the importance and use of such a detector but does not warn (or even advise) that one should be installed. In contrast, this ANSI regulation makes it clear that a CO detector is required.

The Generac Owner's Manual makes no representation of the importance of a carbon monoxide detector despite the fact that Generac was aware of the known hazard of CO and that installing a CO detector would assist in avoiding the hazard. Even if Generac and

Fleetwood did not believe that a CO detector was required, the admitted serious danger of exhaust gases and the availability of such detectors at that time could have motivated Generac and Fleetwood to advise vehicle owners to install one for their own future safety.

*Topic: Operating an exhaust fan while the generator is running*

In their Owner's Manuals, Generac and Fleetwood do not include the topic of the danger of operating an exhaust fan in the vehicle while the generator is running. In contrast, the Onan Generator Operator's Manual says the following:

---

Never operate any exhaust fan in the recreational vehicle when the generator set is running. It can draw exhaust gas into the vehicle interior.

---

### **Topic Sequencing**

Within a given topic the sequence in which points are made about that topic can provide important information to readers, who normally expect the most important points of a discourse to be made first and the less important ones to follow. Consistent with this expectation, if the most important points about that warning topic are delayed until later in the topic, the discourse impact of that warning can be diminished or diluted. This is particularly important when the topics are warnings about serious hazards. Therefore, even though a topic related to a hazard may have been introduced, the reader's understanding of the significance of that hazard can be rendered unclear by the order in which information in that topic is sequenced.

*Topic: the danger of obstructions to generator exhaust*

The initial focus of Generac's references to potential obstructions to the generator's exhaust associates with possible damage to the generator rather than physical danger to the users, if or when there is an obstruction:

---

Cooling and Ventilating Air: Air inlet and outlet openings in the generator compartment must be open and unobstructed for continued proper operation. Without sufficient cooling and

*ventilating air flow, the engine-generator quickly overheats which causes it to shut down or damages the generator or vehicle.*

---

It is not until two paragraphs after the mention of possible damage to the generator that Generac includes a “Danger” caption indicating that the generator engine gives off deadly carbon monoxide gas that can cause unconsciousness or even death. This sequencing within the topic sends a message that the danger to human life is not as serious as the danger to the generator itself. In contrast, Generac’s competitor, Onan, in its Operator’s Manual primarily associates generator exhaust obstructions with a warning about such dangers to persons inside the vehicle, gives examples of potential obstructions, and explains why this is dangerous, making no mention at all about potential damage to the generator:

---

**WARNING:** Exhaust gases can cause severe personal injury or death. Never operate the generator set unless the exhaust system is clear of walls, snow banks, or any obstruction that can prevent exhaust gases from dissipating. Never operate any exhaust fan in the recreational vehicle when the generator set is running. It can draw gas into the vehicle interior.

---

Although the Fleetwood Owner’s Manual includes a warning about the danger to people that is caused by obstructions to the exhaust system, it does so in an ineffective print form of all capitalized letters:

---

**WARNING**  
**EXHAUST GASES ARE DEADLY. DO NOT BLOCK THE TAILPIPES OR SITUATE THE VEHICLE IN A PLACE WHERE THE EXHAUST GASES HAVE ANY POSSIBILITY OF ACCUMULATING EITHER OUTSIDE, UNDERNEATH, OR INSIDE YOUR VEHICLE OR ANY NEARBY VEHICLES. OUTSIDE AIR MOVEMENTS CAN CARRY EXHAUST GASES INSIDE THE VEHICLE THROUGH WINDOWS OR OTHER OPENINGS REMOTE FROM THE EXHAUST OUTLET. OPERATE THE ENGINE(S) ONLY WHEN SAFE DISPERSION OF EXHAUST GASES CAN BE ASSURED, AND MONITOR OUTSIDE**

## CONDITIONS TO BE SURE THAT EXHAUST CONTINUES TO BE DISPERSED SAFELY.

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It is well recognized by document design specialists and technical writers that when multiple lines of all capitalized text are used (usually an attempt at emphasis), it reduces the chance that such text will be processed effectively and understood (Tinker 1969; Salcedo, Reed, Evans and Kong 1972). In fact, as readers may notice, this style discourages any reading at all.

### **Specificity of the Warning Topic**

Specificity is one of the most important keys to effective communication. In the case of warnings about potential hazards, specificity is vitally important. Specificity, or lack of it, is made through examples of how the concept applies in this case:

*Topic: generator exhaust obstruction*

The topic of obstruction to the generator's exhaust system is illustrative of the Generac's lack of specificity where being specific could have been more informative. Its Owner's Manual, under the caption of "General Safety Rules," says the following:

---

Adequate ventilation is required to expel toxic fumes and gasoline vapors from the generator compartment. Do not alter the installation of this equipment in any manner that might obstruct air and ventilation openings. Such openings must be kept clear and unobstructed.

---

We do not learn of any specific types or origins of obstructions from this general advice. Whatever meanings are intended by the expressions, "adequate ventilation" and "in any manner that might obstruct air," are inexplicit and un-illustrated. In fairness, later, on page 6 under a different caption, this same manual becomes slightly more specific:

---

Engine Exhaust Gases: Before starting the generator engine, you should make sure that there is no way for exhaust gases to enter

the vehicle interior and endangering people or animals. Close windows, doors and other openings in the vehicle that, if open, might permit gases to enter the vehicle.

---

Although here the reader is advised to avoid the danger by closing the interior of the vehicle, there is still no mention of any exterior obstructions that might present a danger. The reader is given information about what to do if gases escape (to close the vehicle openings) but is not counseled about how to prevent specific external obstructions from occurring in the first place.

It is not until page 9, in a paragraph captioned, “OPERATION IN HIGH GRASS OR BRUSH” (note that this is not captioned “Danger”), that Generac mentions some of the specific external obstructions that might present a hazard:

---

Never operate the generator while the vehicle is parked in high grass, weeds, brush or leaves. Such materials can ignite and burn from the heat of the exhaust system. The generator exhaust becomes extremely hot during operation and remains hot for a long time after it was shut down.

---

While potential obstructions are named here, Generac represents this danger as the possibility of fire and implies that the generator could be damaged. Conspicuously absent is an explicit mention of potential harm to humans from fire. Nor is there any warning about exposure to the potential danger of carbon monoxide exhaust gas resulting from operating the generator in high grass, weeds, brush, or leaves.

The Fleetwood Owner’s Manual does associate exhaust obstructions with the danger of exposure to carbon monoxide gas but is unspecific about the types and origins of obstructions to the exhaust system and, as noted earlier, ineffectively conveys this information in ten consecutive lines of all capitalized words:

---

**WARNING**  
**EXHAUST GASES ARE DEADLY. DO NOT BLOCK THE TAILPIPES**  
**OR SITUATE THE VEHICLE IN A PLACE WHERE THE EXHAUST**

GASES HAVE ANY POSSIBILITY OF ACCUMULATING EITHER OUTSIDE YOUR VEHICLE OR ANY NEARBY VEHICLES. OUTSIDE AIR MOVEMENTS CAN CARRY EXHAUST GASES INSIDE THE VEHICLE THROUGH WINDOWS OR OTHER OPENINGS REMOTE FROM THE EXHAUST OUTLET. OPERATE ENGINE(S) ONLY WHEN SAFE DISPERSION OF EXHAUST GASES CAN BE ASSURED, AND MONITOR OUTSIDE CONDITIONS TO BE SURE THAT EXHAUST CONTINUES TO BE DISPERSED SAFELY.

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Once again, the Operator's Manual of the Onan Generator is used here for comparison. Unlike Generac, Onan is very specific about the risk of personal injury or death to humans as well as how to avoid specific external obstructions to the exhaust system. On the same page of its manual, Onan offers two separate captioned warnings about human safety from such obstructions, one about fire danger and one about the inhalation of gases:

---

WARNING: Fire can cause severe personal injury or death. Do not operate the generator set when the vehicle is parked in high grass or brush. Do not operate the generator set if exhaust gases will not effectively expel away from vehicle.

WARNING: Exhaust gases can cause severe personal injury or death. Never operate the generator set unless the exhaust system is clear of walls, snow banks, or any obstruction that can prevent exhaust gases from dissipating.

---

*Topic: Visual and/or auditory inspection of generator*

Under the caption, "General Safety Rules," at the beginning of its manual, Generac recommends the following:

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Inspect the generator periodically. Repair or replace all damaged or defective parts immediately ... You must satisfy yourself that it is safe for you and others.

---

From this we learn that Generac recommends “periodic” inspections but we are not told specifically what “periodic” means. Nor are we told what to look for during such an inspection or how to look for it.

Fleetwood’s Owner’s Manual is more specific about when to inspect and what kinds of things to look for in its two captioned warnings about the danger of exhaust gas:

---

Inspect the exhaust system for road damage before starting the engine. Monitor outside conditions to be sure that exhaust gases continue to be dispersed safely ... Check the generator exhaust system after every 8 hours of operation and whenever the system or trailer structure may have been damaged, and repair any leaks or obstructions before another operation.

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Once again it is the competitor Onan Generator Owner’s Manual that provides more adequate advice, including an audible inspection:

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#### GENERAL INSPECTION

Perform a general inspection every eight operating hours. Start the generator set. Visually and audibly check for abnormalities.

#### EXHAUST

Examine the exhaust system for leaks. If you have a conventional compartment mount generator set, inspect the compartment for holes which might allow exhaust gas to enter the recreational vehicle. Do NOT operate the generator set if it runs louder than usual, the compartment has holes to the interior, or the exhaust system has leaks.

---

### **Semantics of Danger, Warning, Caution, and Hazard**

What are the most appropriate terms to describe comparative seriousness of dangers, hazards, cautions, or warnings? Standard desk dictionaries are of little help, since they often use one term to define another. Illustrative of this problem is the use of the Miranda

“Warnings” in America when in Great Britain the same thing is called “Cautions.” The manufacturing industry needed some regulations to create differences between hazard statements that were apparently not distinguished in every day language. So the American National Standards Institute (ANSI) adopted a three-level hazard alert lexicon, defining the words DANGER, WARNING, AND CAUTION, with “hazard” serving as a kind of general cover term for the other three, as follows:

---

DANGER indicates an imminently hazardous situation which, if not avoided, *will* result in death or serious injury.

WARNING indicates a potentially hazardous situation which, if not avoided, *could* result in death or serious injury.

CAUTION indicates a hazardous situation which, if not avoided, may result in minor or moderate injury. CAUTION may also be used to alert against unsafe practices.

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Since the manufacturers of generators and recreational vehicles are subject to ANSI regulations, one might expect these terms to be applied to their products, particularly in their owner’s and operator’s manuals.

Again, a comparison of how Generac, Fleetwood, and Onan used these terms is instructive. The Generac Owner’s Manual contains five captioned “Danger” hazards representing the nature and gravity of the risk. One of these is about fire, three about batteries, and one about exhaust gas. Under one of its five “Danger” captions Generac explains that the reader should not use jumper cables to start the engine and contains no mention of any potential resulting personal injury that could result from doing so. “Danger” is clearly not the appropriate ANSI term for this caption.

The Fleetwood Owner’s Manual contains fifty-six captions marked “Warning.” Thirty-four of these relate to potential damage to parts and equipment and of the remaining twenty-two, only two relate to the hazard of carbon monoxide exhaust gas. By using the caption, “Warning,” to associate both risk of death or serious injury as well as possible damage to equipment and to operating tips, Fleetwood dilutes “Warning” by ANSI definitions, thus reducing the effectiveness of its ability to warn about serious injury or death.

In contrast, the Onan Operator’s Manual contains eighteen marked “Warning” captions, all but one of which are appropriate to the potential risk of personal injury or death. Five relate to exhaust gas, three to fire and burns, five to explosions, four to being injured by

dropping the engine, and one to accidentally starting the engine. Onan's manual contains seven "Caution" captions, six of which appropriately relate to potential engine damage or to operation tips. With two exceptions, Onan effectively used "Warning" to relate to the risk of possible serious injury or death and "Caution" to relate to possible equipment damage and tips on operation.

In all, Onan reports the hazard of exhaust gas five times more frequently than does Generac and two and a half times more than Fleetwood. Onan uses its "Warning" caption labels almost four times more frequently than Generac uses its "Danger" caption.

There are only three captioned references to human risk of serious injury or death throughout the Generac manual. One of these "Danger" captions is about the risk of carbon monoxide gas, one is about the risk of explosive hydrogen gas from batteries, and one is about the risk of battery electrolyte fluid. Of Generac's two remaining captions called "Danger," one possibly implies but does not make explicit a human safety issue related to fire and the other involves no human safety issue at all, stressing instead the need to avoid using jumper cables to start the generator.

According to accepted practice in the industry, "Danger" indicates an imminently hazardous situation which, if not avoided, *will* result in death or serious injury. By sometimes associating "Danger" with human safety and sometimes with equipment damage or operation tips, Generac mixes the gravity and nature of the risk in its hazard captions, creating a strong probability of confusion the minds of its readers about the gravity and nature of the hazard. Generac clearly failed to provide important and necessary information about the nature and gravity of the risk of exhaust gases.

According to the accepted practice in the industry, the "Warning" caption indicates a potentially hazardous situation which, if not avoided, *could* result in death or serious injury. By sometimes associating "Warning" with human safety and sometimes with equipment damage or operation tips, Fleetwood mixes the gravity and nature of the risk in its hazard captions, creating a strong probability of confusion in the minds of its readers about the gravity and nature of the hazard. Fleetwood also failed to provide important and necessary information about the nature and gravity of the risk of exhaust gases.

### **Advising about how to avoid risks**

One of the regulations set by ANSI is that the manufacturer should advise the consumer how to avoid whatever risks are involved with the use of the product. The illocutionary act of advising is simply described by Searle (1969) as "telling you what is best for you." The writer has reason to believe that the reader will benefit and it's not obvious that the reader will act properly in the absence of such advice.

The advice about how to avoid risk is infrequent in the Generac manual. Its two "Danger" captions about battery electrolyte fluid do mention a way to avoid the problem. One says, "... wear protective goggles, protective clothing and gloves when handling a battery." The

other says, “Do not allow smoking, open flame, sparks or any spark producing tools or equipment near the battery.” From these examples it is clear that Generac is capable of giving specific advice about how to avoid risk. In contrast, in its only “Danger” caption relating to carbon monoxide gases, Generac says, “Do not operate the generator if its exhaust system is leaking or has been damaged.” This advice presupposes that the reader is able to determine or identify the flaws of leaking or other risks before any potential problem occurs. In short, although it can be counted as advice that warns the reader, unlike the advice about battery fluid, it is lacking in advice about how readers might determine the flaws that will help them avoid the potential risks.

In contrast, the warning captions in the Onan generator’s manual provide many specific examples of how to avoid risks. The following are only a few examples:

- Do not operate the generator when the vehicle is parked in high grass or brush
- Never operate any exhaust fan in the recreational vehicle when the generator set is running
- Do not smoke or allow any ignition sources around fuel or fuel components. Keep a type ABC fire extinguisher nearby.
- Disconnect both generator set starting battery cables before performing maintenance
- Do not check the oil level with the generator set running. Oil can blow out the oil fill.
- Eliminate all sources of ignition such as pilot lights and sparking electrical equipment before purging the fuel system. Provide adequate ventilation to dissipate LP gas as it is released.
- After assembly of the filter assembly and turning on the fuel shutoff valve, check to make sure the filter does not leak, using a soap and water solution. If it leaks, turn off the shutoff valve immediately.

### **Clarity of Discourse Style and Format**

Generac begins its 30 page manual with a densely written section containing 71 sentences called “General Safety Rules,” which does not contain any marked hazard captions despite its content which, on one occasion, includes the words, “can cause unconsciousness or even death.” In the rest of the manual the five times that it marks a paragraph with “Danger”(on pages 3, 6 and 14) are boxed and printed in all capital letters of from 6 to 15 consecutive lines. As noted earlier, the use of multiple lines of all capitalized words makes it difficult for readers to process and understand the text. Although all caps may give the impression of providing emphasis, such practice actually works against the goal of achieving reader comprehension, since all capital letters provide visual interference to predictable print type and discourage the reader from attempting to read the text (Tinker 1969). The Fleetwood manual’s frequent use of multiple, all-capitalized lines of text is even more problematic, especially in its

“Warning” sections, the very place where one would most want the reader to understand the message.

In terms of document design, Generac’s “General Safety Rules” page contains little or no “white space” and is organized around 14 different bulleted sections with no organizational headings, subtitles, or captions, making it difficult for readers to determine the rationale for, the topic of, or the relationship between the various bulleted sentences (Smith and McCombs (1971).

In comparison, the opening page of Onan generator’s manual, called “Safety Precautions,” first clearly defines the meaning of the hazard symbols and captions it uses. Onan’s opening page contains 55 sentences with 7 bulleted organizational subtitles that contain relevant points made under each bullet, with considerable “white space” in between. Following acceptable readability practice, Onan’s manual has no multiple lines of capitalized text. This makes it easy to read and understand that the sub points all relate to the bolded and bulleted headings and are separated from each other.

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My expert report in this case made use of the linguistic tools of discourse analysis and semantics. It focused on the speech act of warning in particular. My findings, presented in the form of a written report, are summarized as follows:

The Generac Owner’s Manual failed:

- to recycle important warnings about exhaust gases
- to give any warning about the danger of sleeping in the vehicle while the generator is running
- to give any warning about the need for a carbon monoxide detector
- to give any warning about operating an exhaust fan while the generator is running
- to effectively sequence important warnings in a way that stressed human danger over generator damage
- to effectively warn how to avoid the risk of exhaust gases
- to use required regulatory caption titles accurately and consistently
- to follow effective communication principles about how to avoid multiple lines of all capitalized words
- to follow acceptable principles of effective document design

The Fleetwood Owner’s Manual failed:

- to adequately recycle important warnings about exhaust gases
- to give any warning about the need for a carbon monoxide detector
- to give any warning about operating an exhaust fan while the generator is running
- to effectively warn about the specific dangers of obstructions to the generator exhaust system
- to use required regulatory hazard caution titles accurately and consistently
- to follow effective communication principles about how to avoid multiple lines of all capitalized words

- to follow accepted principles of effective document design

The linguistic tools of discourse analysis (topics and topic sequencing in particular), speech acts, and semantics were relevant to this case. The issue of effective and ineffective document structure and design also played a role. Comparison of the Generac manual's handling of hazard statement with that of Onan generator manufacturer's manuals showed that it is entirely possible to follow the ANSI standards and to write effective warnings if the manufacturer is inclined to do so. Onan did a much better job of warning about potential risks. Using this analysis, attorneys for the plaintiff were able to obtain an acceptable settlement a week before the trial was scheduled to begin.