

Is the New Zealand Fire Service Responsible for Fire Deaths?

by Karl Westwell
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Is the New Zealand Fire Service Responsible for Fire Deaths?

Questions are being asked about the New Zealand Fire Service's role in the deaths of Lynette Chapman, who died in a home fire in January 2009, and Freda Birch, who died due to a fire in her pensioner flat in June 2008.

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On 21st January, 2009 the New Zealand Herald reported on the death of Lynette Chapman in a house fire. According to the article, a neighbour recounted that her son Brad had told him that his mother had removed the smoke alarms from the home just weeks ago because they always went off when she was cooking toast, "He said, 'Mum took them out a few weeks ago because she couldn't stand the noise', and he was shaking his head. And then he had to go and identify her." Is Ms Chapman the only one who can't stand the noise?

If Ms Chapman did remove the batteries, she is not alone. A 1997 Fire Awareness Planning Study for National Fire Protection Agency found that: "...to silence a triggered alarm, about 22% of consumers will remove the battery, leaving the alarm inoperable..."^[1]

Is there any safety device other than the ionization-type smoke alarm that 'false alarms' with such annoying regularity that more than one in five people disable it? If the oil warning light in cars came on every time a car went over a speed bump or hit a pothole, would we blame car owners for disabling it? It is hard to imagine car manufacturers being allowed to get away with it. Yet, the result of disabling an oil warning light in your car could be a cooked motor. Whereas, the result of disabling a smoke alarm in your home could be *you or someone you love ending up injured or dead.*

Yet, despite this, more than one in five of us *"will remove the battery, leaving the alarm inoperable..."* You can put a hush button on it, so that we can silence an annoying alarm, but if it keeps going off often enough our behavior is still going to be the same: disable it, which is exactly what more than one in five of us do. So, just how have the makers of ionization-type smoke alarms got away with marketing a device that has such a serious defect?

The reason why a device, which due to its defect is disabled in more than 22% of homes, is still able to be sold is because our standards bodies, our regulators, our consumer organizations, and even our Fire Service have let us down.

The New Zealand Fire Service has, on several occasions, stated in the media that: "...there are *three causes of fires* - men, women and children."^[2] The context in which the Fire Service makes this statement tends to point the finger of blame at a home's occupants. If you follow the 'three causes of fires' statement through to its logical conclusion there are ultimately just causes of fire deaths and injuries - men, women, and children. But, with the exception of children, surely it is not just the men, women, and children that occupy a home that are responsible for fire deaths and injuries. Consider:

- ***The men and women who own and run the companies that manufacture, sell, and install a type of smoke alarm that is "defectively designed"^[3] and that lulls people into a false sense of security because they go off when cooking toast but do not activate until "dangerously high and totally unacceptable"^[4] levels of smoke – are these men and women also a cause of fire injuries and deaths?;***

- ***The men and women of standards and regulatory organizations that fail to amend or adopt appropriate standards***, such as the Australian Building Codes Board who are blocking Australian Standards' amended smoke alarm standard despite the fact ionization-type smoke alarms have been found by Australian government scientific testing to be unsafe ^[4] - ***are these men and women also a cause of fire injuries and deaths?***;
- ***The men and women of testing organizations that continue to approve devices they know are not adequate***, such as the Australian Commonwealth Scientific and Research Organization (CSIRO) which tests smoke alarms for the Australian and New Zealand markets and continues to pass ionization-type alarms despite having declared to Australian Standards in 2006 that ionization-type smoke alarms do not activate until at least twice the maximum threshold set for photoelectric-type smoke alarms^[4] – ***are these men and women also a cause of fire injuries and deaths?***;
- ***The men and women of consumer organizations that have failed to warn the public*** and to vigorously pursue manufacturers, importers, and even the fire service for false and misleading claims^[5] – ***are these men and women also a cause of fire injuries and deaths?***; and
- ***The men and women of the New Zealand Fire Service administration*** – of all those involved with the smoke alarm issue, no one has a louder voice, nor a more authoritative voice, than our nation's most trusted profession – a reputation of which the fire service is justifiably proud, for it is a great honour. But with great honour comes great power, and with great power comes great responsibility – ***are these men and women also a cause of fire injuries and deaths?***

When the New Zealand Fire Service says that men and women are the cause of fire, to which men and women should they be referring? The public who have been misinformed or had information withheld from them - or those who have perpetrated the misinformation or withheld information? You be the judge.

There is a big difference between the men, women, and children who occupy a home who disable an alarm and the manufacturers, regulators, testing organizations, and the fire service (the 'fire industry') that manufacture, sell, regulate, and promote a defective alarm.

The men, women, and children who occupy the home pay a high personal price for their folly, and the number of men, women, and children affected by their decisions are few. ***The men and women of the fire industry rarely pay a personal price for their actions - or lack thereof - yet the number of men, women, and children affected by their decisions are many.***

So, who should be held the more accountable?

The woman who out of frustration disables her own smoke alarm because "she couldn't stand the noise" - just as thousands upon thousands of others have done and will continue to do - and who died as a result of her decision? Or the men and women of the fire industry who by their decisions not only fail to warn the public of the danger that ionization-type alarms pose, but also continue to manufacture, sell, and promote what is arguably the most over-hyped, over-rated, most-misrepresented safety product of all time?

- The ionization smoke alarm is a defective device for which there have been viable, cost-effective alternatives for well over 30 years ^[6];

- The ionization smoke alarm is a defective device for which there is documented evidence of blatant false advertising and misrepresentation - including the myth that smoke alarms have reduced by deaths by 50%^[7] - for well over **TWO DECADES**;
- The ionization smoke alarm is a defective device for which hard evidence of its inadequacies have been documented by the International Association of Fire Chiefs (IAFC) and others for over **THIRTY YEARS**.^[8]

Surely the fire industry is guiltier. Surely it is these men and women whose hands are most bloodied with the needless deaths and injuries of the men, women, and children who die in home fires.

On 9th May 2006, in response to public concern and media questions regarding smoke alarms as a result of a smoke alarm test conducted by Consumer and the Building and Research Association of New Zealand (BRANZ), the New Zealand Fire Service issued a press release that referred to research into smoke alarms commissioned by The Australasian Fire and Emergency Service Authorities Council (AFAC), the peak body for public sector fire and emergency service organizations in Australia and New Zealand, the results of which were soon to be released. The New Zealand Fire Service assured the media and the public, "We will adopt the findings as soon as they are available."^[2] But did they?

Just 23 days after the New Zealand Fire Service promised, "We will adopt the findings as soon as they are available" AFAC concluded that "...photoelectric smoke alarms provide more effective all-round detection and alarm than ionization alarms" and in its official position stated "...that all residential accommodation be fitted with photoelectric smoke alarms."^[9]

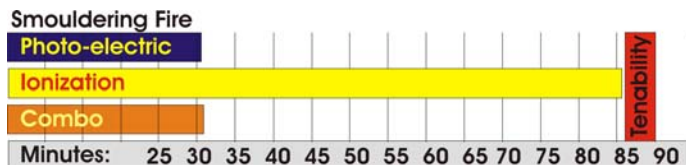
On the New Zealand Fire Service (NZFS) website is an AFAC press release dated 5th of June 2006 titled, "Householders encouraged to purchase photoelectric smoke alarms."^[10] But what have they done to 'adopt the findings' of AFAC since then? If you were to visit the New Zealand Fire Service website^[10] at the time of my writing this article what would you find? How would what the New Zealand Fire Service is telling the public compare to AFAC's findings?

- **AFAC found that:** "Ionization smoke alarms detect flaming fires **marginally** earlier than photo-electric smoke alarms."^[9]
NZFS Website says: The ionization alarm responds faster to small smoke particles.^[12]
The difference? An adjective. NZFS do not mention the word 'marginally'.
- **AFAC found that:** "Photo-electric smoke alarms detect smouldering fires and fires starting in areas remote from smoke alarms **significantly** earlier than ionization smoke alarms."^[9]
NZFS Website says: "The photoelectric responds faster to larger smoke particles."^[12]
The difference? An adjective. NZFS do not mention the word 'significantly'. Neither did they mention that the performance of ionisation alarms drops drastically when the fire source is 'remote from the alarm' (more than 5 metres) which is another significant advantage of photoelectric alarms.
- **AFAC found that:** "Ionization smoke alarms **may not** operate in time to alert occupants early enough to escape from smouldering fires."^[9]
NZFS Website says: "Both types provide enough time to escape. The number of smoke alarms you have is more important than the type."^[12]
The difference? NZFS do not mention that ionization smoke alarms 'may not' operate in time to alert occupants early enough to escape from smouldering fires. The result: Injury ... death? For although, they go on to say they recommend photo-electric alarms be

installed in your home,^[12] no reason is given for doing so and the preceding sentence says “both types provide enough time to escape.” Is it enough for them to say, “the New Zealand Fire Service recommends photo-electric type smoke alarms be installed in your home” without explanation and without mentioning that ionization smoke alarms **may not** operate in time to alert occupants early enough to escape from smouldering fires” – or should they be doing more?

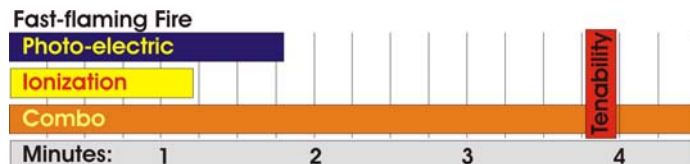
The graphs below illustrate the differences in response times of the different types of smoke alarms, ionization, photo-electric, and combination (photoelectric and ionization) alarms.^[13]

The first graph shows the difference in response times of the alarms in minutes for fire in the smouldering stage. *The New Zealand Fire Service state that “far more New Zealanders die from being overcome by smoke than flames,”*^[14] an indicator that death occurred during the smouldering stage of a fire. The tenability line indicates the point at which it is *highly unlikely* that anyone could survive to escape the fire (many argue tenability is reached much earlier).



Illus 1
Alarm Response Times:
Smouldering Fire^[13]

The second graph shows the difference in response times of the alarms in minutes for a fire in the flaming stage. You will note that you have less than four minutes to escape once a fire is in the flaming stage. The tenability line indicates the point at which it is *highly unlikely* that anyone could survive the fire to escape (many argue tenability is reached much earlier).



Illus 2
Alarm Response Times:
Fast-flaming Fire^[13]

Given AFAC’s findings, would you be prepared to gamble your life or the life of someone you love on the type of smoke alarm AFAC warns, “may not operate in time to alert occupants early enough to escape from smouldering fires”?

You may not take that gamble, but the New Zealand Fire Service has taken it for you — without your consent. Based on the information provided by them on their official website, the New Zealand Fire Service does not even provide you with the information that would enable you to make an informed decision even though **the NZFS admit that 'far more New Zealanders die from being overcome by smoke than flames.'**^[14]

Perhaps the biggest defect of the ionization alarm is the fact that it false alarms so regularly, thereby making it is unfit for purpose^[15] in the one room in the home where the type of fire it is best at sensing is most likely to start – the kitchen. You would be hard pressed to find anyone who isn’t aware of (ionization) smoke alarms going off when you cook the toast. Television shows and movies make light of it. The kitchen is the room where fast-flaming fires are most likely to start, “...hot flaming fires well up to the ionization alarms ...”^[2] according to the New Zealand Fire Service. Yet even they say, “don’t put smoke alarms in the kitchen, garage, or bathrooms...”^[16]

Do you remember Aesops Fable, 'The Shepherd Boy and the Wolf'?

The protagonist of the fable is a bored shepherd boy (no PS3 or X-Box, I guess) who entertained himself by calling out "wolf". Nearby villagers who came to his rescue found that the alarms were false and that they had wasted their time. When the boy was actually confronted by a wolf, the villagers did not believe his cries for help and the wolf ate the flock and the boy. The moral is stated at the end of the fable as: Even when liars tell the truth, they are never believed. The liar will lie once, twice, and then perish when he tells the truth. ^[17]

This fable points to another fault of the ionization-type smoke alarm. Not only does its frequent false alarming result in many disabling the alarm, it also results in many others ignoring it, or ignoring it until it is too late. This is such a problem amongst apartment dwellers in particular that the New Zealand Fire Service cites "increasing complacency amongst tenants to evacuate the building" as an area of concern. ^[18] The Fire Service even reference research that concludes that ***"frequent false and unwanted fire alarm activations reduce the level of fear and the credibility of the alarm system."*** ^[18]

So, why is a device that "...reduces the level of fear and the credibility of the alarm system" still allowed to be sold? Surely there must be no viable alternatives? If that were the case perhaps their actions would make sense, but it isn't. In fact there are cost-effective alternatives (in fact, where hard-wired, interconnected, smoke detectors are used, there is often no cost difference at all). Even manufacturers are starting to speak out.

BRK Brands/First Alert – the world's largest smoke alarm manufacturer – has said: "Considering photoelectric smoke alarms are determined by industry experts to be significantly less prone to nuisance alarm and potential disabling of the batteries by consumers, we support and encourage fire service administration and lawmakers that are moving toward the use of photoelectric smoke sensing technology." ^[19]

In the past I have "had a go" ^[20] at BRK Brands/First Alert, and I would like to see them go the next step and stop manufacturing ionization smoke alarms. But, even I understand that ionization smoke alarms are their 'bread-and butter,' that others would fill the gap, and the only result would be a drop in the share price of BRK Brands/First Alert – a move that could result in the directors being personally liable for losses suffered by shareholders ^[21] and what company director wants to voluntarily place themselves in a position of personal liability? But even they admit there is a problem with ionization smoke alarms. ^[19]

And though it may be unreasonable of us to expect business to cut-off their cash-cow, especially if others will step in to take over the milking ... surely, it is not unreasonable that we should expect the standards bodies, the testing facilities, the regulators, the consumer bodies, and the Fire Service – especially our Fire Service, for there is no profession we trust more – to do something about it, is there?

So, why does the New Zealand Fire Service continue to defend this device and why do the occupants who disable a defective device come in for more criticism than the device itself?

As if pointing the finger of blame at the people who disable a defective alarm and as if defending the indefensible isn't bad enough, is the New Zealand Fire Service going even further and doing something that, in light of the evidence against ionization alarms, is actively putting lives at risk?

Despite AFAC's findings the New Zealand Fire Service has continued to install ionization alarms in the homes of our most vulnerable. ^[22]

In June 2008, 91 year old Freda Birch died in her pensioner flat in Papakura as a result of a smouldering fire. Three ionization smoke alarms had been fitted in Freda's unit by the New Zealand Fire Service who confirmed in a press release, "that she had working ionization smoke alarms." ^[22] The Fire Service said it was a tragedy that she was overcome by smoke. Subsequent to Freda's death, the Fire Service re-fitted all adjacent pensioner units with new ionization smoke alarms ^[22] – the type of smoke alarm AFAC say "may not operate in time to alert occupants early enough to escape from smouldering fires."

What the hell are they thinking?

Why does the New Zealand Fire Service continue to promote, defend, and install a type of smoke alarm that is "defectively designed" and that lulls people into a false sense of security because they go off when cooking toast but do not activate until "dangerously high and totally unacceptable" levels of smoke and "may not activate in time to alert occupants early enough to escape"? Below are the four excuses I have heard most often:

- **Excuse #1:** "We don't want to confuse the public."
My response: "Trust the public, they might surprise you. Sure beats having the public confused as to why you haven't told them."
- **Excuse #2:** "We don't want to panic the public."
My response: "Despite the big budget advertising campaigns, you guys are always complaining about people not installing alarms because they have the attitude that a fire will never happen at their place. Sure, some may be concerned and some may do something, but panic? Yeah, right."
- **Excuse #3:** "Any (working) smoke alarm is better than no alarm."
My response: "Glad to see you guys finally figured out that the alarm has to be working to be of any use – you took awhile to cotton onto that. Tossing an anchor out the back of my car as I approach a busy intersection at 100 kilometres an hour is better than no brakes at all ... I'd still prefer some decent brakes. I'd definitely prefer to be told about them."
- **Excuse #4:** "Photo-electric alarms are too expensive."
My response: "You can buy a photo-electric alarm for as little as ten dollars. Granted, this may be a bit dearer than an ionization smoke alarm, but we're talking a few bucks – and with higher sales volume, the prices will come down. As for the freebies you install, tell Rotary, Lions, the government and whoever else funds their purchase the facts and ask for more money. Use that loud, authoritative, voice and your position as our most trusted profession and kick up a fuss. Stop acting like wussies – or those big, brawny firefighters down at the station won't want to hang out with you."

Let me be very clear: the rank and file of the New Zealand Fire Service deserves our respect for they are truly heroes.

It is not the fault of the fire personnel you speak to when you call up your local brigade that they tell you, "any smoke alarm will do the job." It is not the fault of the firefighters who stand outside your local hardware store promoting smoke alarms that they will tell you, "all smoke alarms will provide sufficient warning for you to get out." Like you, they haven't been told the facts. Like you, they continue to believe the myth. [7]

But not all who serve within the ranks of the New Zealand Fire Service are heroes. There are some within the fire service who by their actions and by their failures to act betray the public they serve and risk the lives of innocent men, women, and children; they betray the fire personnel and put at risk our treasured firefighters' lives; and they betray the proud heritage of the fire service. For just as pedophile priests hid behind the image of the Catholic Church that millions held sacred, so to some within the New Zealand Fire Service administration hide behind the service and self-sacrifice of the brave men and women fire fighters who, without prejudice or favour, face the fire beast for our sakes.

Are the men and women within the New Zealand Fire Service administration, by their failure to alert their frontline officers and to warn the public about the known deficiencies of the ionization type smoke alarm, a cause of needless fire deaths and injuries?

We do not have to 'put up' with smoke alarms that go off when we cook the toast, that drive us to the point where we disable them, that cause us to react slower to their sounding, that despite all the false alarms may still fail to sound a timely alarm when we need them most ^[7] – but how many of us know that? Surely the Fire Service has a duty of care to sound the alarm about the ionization alarm? Failing to warn us of the known limitations of the ionization smoke alarm is not a 'neutral act' ^[15]; it is an act that denies people their right to make an informed decision, it is an act that prevents people from doing what is necessary to protect their homes and their families.

And, if they have a duty of care to warn us and to provide us with accurate information, then is it not by their neglect of that duty of care that the blood and the pain and suffering of the victims of fire stain the image and reputation of the New Zealand Fire Service?

In this do not they have a part in the death of Freda Birch? In this do not they have a part in the death of Lynette Chapman?

And for this should not they be judged?

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**Refer author's notes.

Author's Notes:

Writing an article that confronts the fire service head-on for what some might call its complacency – and others its negligence – is not something that has not been done without a great deal of trepidation. The fire service is our most trusted profession. The men and women who fight our fires are our heroes, and deservedly so. So, how will such a message be received and will they shoot the messenger?

My hope is that our fire service will react like Fire & Rescue NSW (FRNSW) Commissioner Greg Mullins, who commended us for bringing this matter to his attention and took to the airwaves to warn the NSW public – Commissioner Mullins had responded to the C.A.N. Report and to the results of the AFAC study, (all of which was also made available to the NZFS at the time). So the NSW Brigades were never publicly questioned for their actions – or lack thereof – in the way that this article is bringing to the public's attention NZFS's behaviour.

I believe in first dealing with matters in private but if that fails then I believe there is a moral responsibility to expose the matter publicly. The NZFS has had the opportunity to act, but have not. Yet, when we have gone on air, when we tell the public, the media always give the NZFS the last word and that word is always, "any (working) smoke alarm is better than no alarm." That argument initially sounds good - until you consider the lives that are lost, the needless injuries incurred by those who choose to have no alarm because the most common type of smoke alarm in our homes is defectively designed. That argument only sounds good until you consider those who could have received earlier warning but didn't and suffered a needless injury or death – then that argument starts to sound hollow.

We are told that by bringing this to the public's attention that some people will choose not to have any smoke alarms that "people's faith in smoke alarms will be lost." My answer to that is that people are already choosing to not have smoke alarms and people's faith in them is already lost. Besides, a lot of the faith people do have in them is misplaced. Smoke alarms, in particular ionization smoke alarms, are not nearly effective as we have been lead to believe. The evidence clearly shows that the vast majority of lives saved that have been attributed to smoke alarms should in fact be attributed to advances in burns treatment, less smoking, safer electrical appliances and other issues. The fact is, repeating, "Any (working) smoke alarm is

better than no smoke alarm" like a mantra actively causes many to not seek better alternatives and in that the statement is not only vain repetition, but a positive evil.

Please let me be very clear: I am not saying that photoelectric smoke alarms are the be-all and end-all. They are not. But, the ionization smoke alarm is not only not the be-all and end-all, it is a dangerous device in that its frequent false alarming causes occupants to disable it, its frequent false alarming causes people to think it is extremely sensitive and will provide them with plenty of warning to escape. The reality is that in a real fire situation it may not – and they are not being told.

I also hesitated at including the two graphs. In deciding to include them, I have specifically chosen to use data from the NIST tests because fire services and organizations like the ABCB often refer to the NIST study in defense of ionization smoke alarms. The reason is simply this, when you include graphs with specific response times you are including material that can be questioned because the response time of an alarm, amongst other factors, depends on the character of the particulate, distance of detector from fire, size of home or room, character of the fire, drafts, windows and doors opened or closed, speed of growth and what is burning. There are several things we know that can not be rebutted:

- (1) So long as a smoldering fire fails to heat up to approach the auto-ignition stage, thus failing to produce a higher energy particulate, the ionization device will not respond. In some cases this can go on for several hours;
- (2) We know that the smoke increases much faster during smoldering fire tests than the toxicity. That is, smoke will nearly always precede by a large margin the build up of a toxic atmosphere that will prevent escape. Usually (not always) the toxicity may not become a serious deterrent to escape for an hour, or at least close to that. In other words, the right type of smoke detector give adequate warning of the smoldering stage of a fire;
- (3) A flaming fire, when small with adequate oxygen available, can be clean burning and in some cases produce little or no visible smoke. How large a fire and how dangerous it can become before the photoelectric smoke detector responds is not clearly defined. I have no doubt that a flaming fire can become very serious before a photoelectric smoke detector warns, especially if the device is not installed in every room;
- (4) When a flaming fire is truly dangerous is when the ceiling temperature in the involved room is approaching flashover, in the neighborhood of a 540 degrees C., sometimes less. A heat detector will usually respond at a ceiling temperature of less than 60 degrees C. which is far below the most dangerous stage. Nearly always, when a heat detector in the fire room sounds it will be an easy thing for the home occupant to extinguish the fire promptly with the right equipment or prompt escape is still an option. Heat detectors (as triggers for sprinklers) produced a 99 percent fire control;
- (5) The problem with the ionization device related to the flaming fire is that it is erratic, it changes with duration of use, its sensitivity changes with contamination and therefore it can have a short reliable life, and it is so prone to false alarms it is often disconnected;
- (6) The reality is that fire has a hundred thousand variations and it is impossible to state a given time for any detector to respond. When the fire is slow to grow the detector is slower to sound; but if it sounds early enough to allow escape, or fire control, before the fire grows deadly, that's good enough. However, when more than one in five disable an alarm and when others ignore an alarm due to the fact the alarm frequently false alarms, then those false alarms are more than a nuisance they are a threat to life. Safety devices should work with human nature; they should not require human nature to conform to their deficiencies; and
- (7) The best solution at time of writing is good quality true smoke detectors (photo-electric) combined with reliable heat detectors, hard-wired and inter-connected, in conjunction with a home

sprinkler system. But what about homeowners and occupiers who, due to finances, can not afford to install this level of protection?

The International Association of Fire Chiefs addressed this question in their 1980 'Residential Smoke Alarm Report'. They wrote, "If a fire department could not buy the most expensive aerial ladder, it obviously would not settle for a step-ladder and a bicycle. It would seek an apparatus somewhere in between. Good automatic fire protection should be considered in a similar manner. Start with the best and most desirable, a complete system, and slowly and intelligently let the citizen remove detectors and related equipment in the least likely areas of fire origin until the affordable level of investment is reached."

The film, 'The Corporation'^[24] examines corporate business practices, to establish parallels between corporate legal misbehaviour (malfeasance) and psychopathy, i.e. callous disregard for the feelings of other people. That corporations may exhibit reckless disregard for the safety of others, deceitfulness (continual lying to deceive for profit), the incapacity to experience guilt, and the failure to conform to the social norms and respect for the law is one thing, but we should and we must expect more from those whom we trust more than any other – our fire service.

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The World Fire Safety Foundation (WFSF) has been commended for its fire safety advocacy by numerous fire authorities and organizations around the world. See the WFSF Position Statement for advice on home fire detection at www.SmokeAlarmWarning.org. The WFSF does not sell any products, solicit or accept donations. All positions at the WFSF are unpaid. WFSF costs are covered entirely by its supporters.



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