

Know Your Smoke Alarm[©]

Updated January 29th 2008
Port Angeles Fire Department, Washington

Purpose of Smoke Alarms

- “A smoke detector or smoke alarm is a device that detects smoke and issues an alarm to alert nearby people that there is a potential fire.”

Smoke Detector Facts

- A 2004 U.S. telephone survey found that 96% of the households surveyed had at least one smoke alarm, yet in 2000-2004, no smoke alarms were present or none operated in almost half (46%) of the reported home fires.
- An estimated 890 lives could be saved each year if all homes had working smoke alarms.
- 65% of reported home fire deaths in 2000-2004 resulted from fires in homes with no smoke alarms or no working smoke alarms.

Smoke Detector Facts

(Continued)

- In one out of every five homes equipped with at least one smoke alarm, not a single one was working.
- Why do smoke alarms fail? Most often because of missing, disconnected or dead batteries. Nuisance activations were the leading cause of disabled smoke alarms. ⁽⁷⁾

Near Fatal House Fire

No working
smoke alarm
present.



“The occupant of the upper unit, with the assistance of Port Angeles Police Officers Dan Morse and Kevin Spencer, was forced to jump from a second story window to escape the fire. That occupant suffered smoke inhalation and was transported to Olympic Medical Center.”

Types of Smoke Alarms

- Ionization - When smoke enters an ionization detector, ionized air molecules attach to the smoke particles and reduce the ionizing current, triggering the alarm.
- Photoelectric - When smoke enters a photoelectric detector, light from a pulsating light source is reflected off the smoke particles onto a light sensor, triggering the alarm.

(Continued)

Types of Smoke Alarms

(Continued)

- Combination - Combination smoke detectors feature both photoelectric and ionization technology.⁽³⁾
- Heat Detector - An alarm sounds at a preset temperature. Example: Alarms above 135 °F.

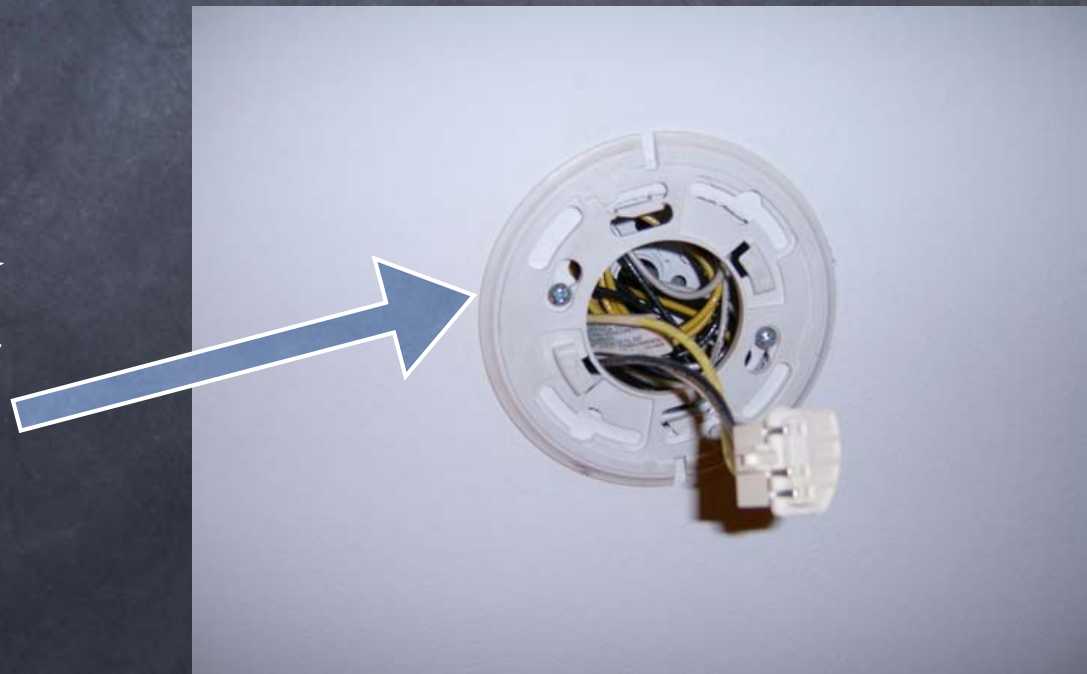
How is a smoke alarm powered?

- Battery (DC) - Non-lithium batteries should be, “replaced annually.” “Lithium powered smoke alarms have...power cells that last for ten years and provide a solution to the problem of missing or dead batteries in smoke alarms.”
- House Current (110v AC) - primary power with a battery (DC) back-up.

House Current (AC) Smoke Alarms

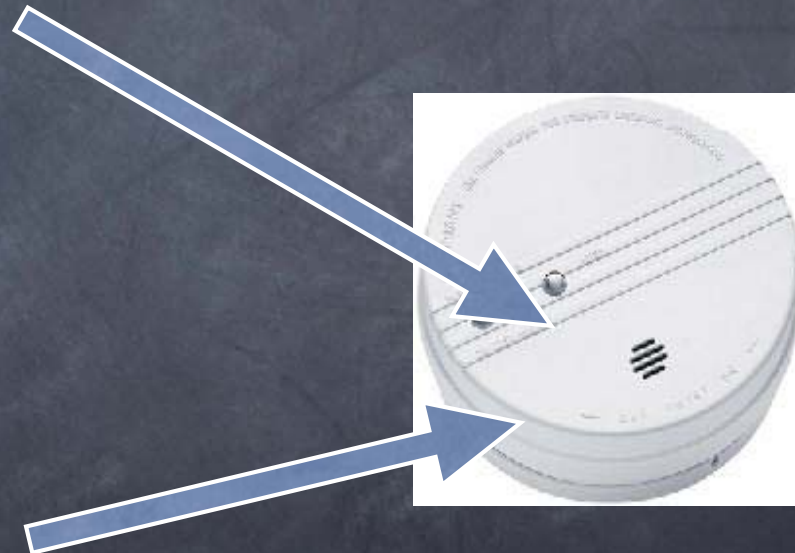
If the smoke alarm is connected to the ceiling with wire, then your alarm is connected to the house current.

Ceiling mounted
bracket and wire
harness.

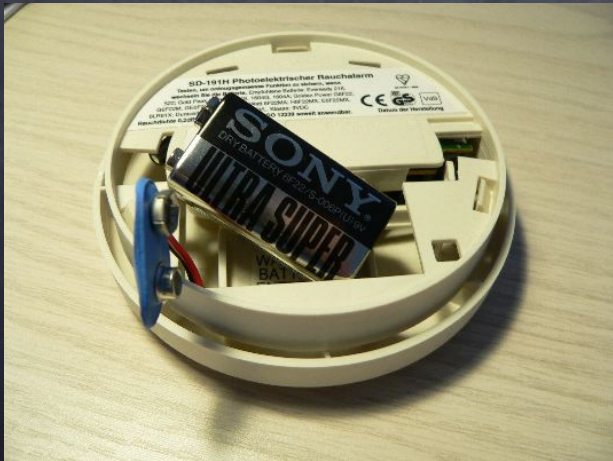


Parts of a Smoke Alarm

- Hush, Quick Quiet or Mute - This button will disable the smoke alarm for 10-15 minutes then reset. This function is useful in areas like a kitchen where false alarms are triggered.
- Test- This button will cause the smoke alarm to beep to check the battery.



Possible Battery Locations



Changing the battery.



Front



Back

Changing the battery.



Front

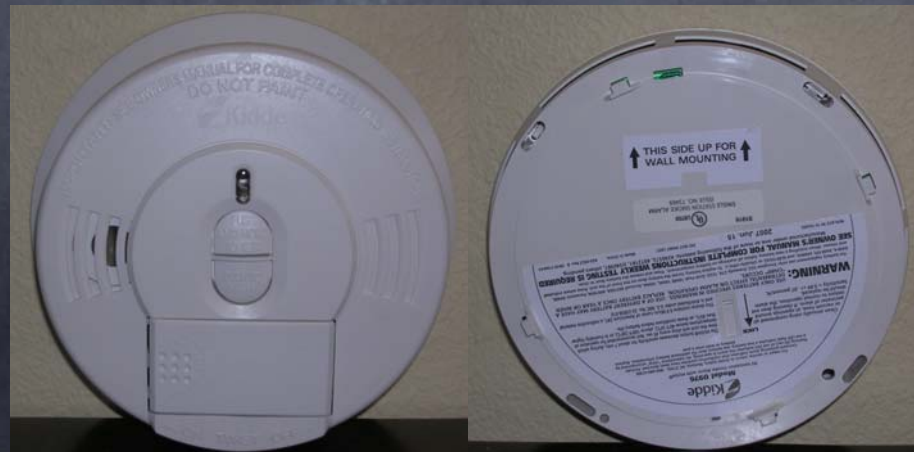


Back

Changing the Battery



Front



Back

Changing the Battery



Front



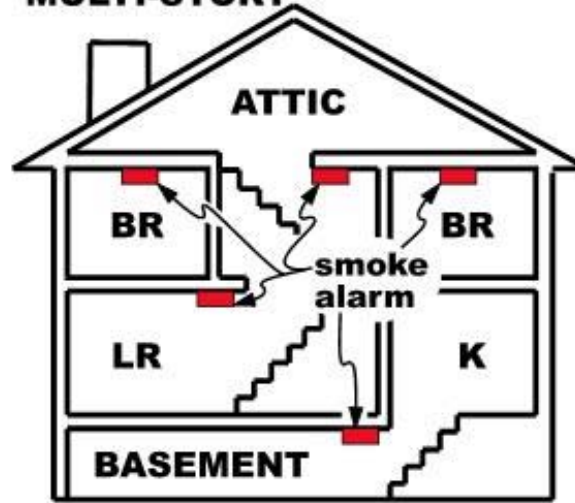
Back

Where do I place my smoke
alarm?

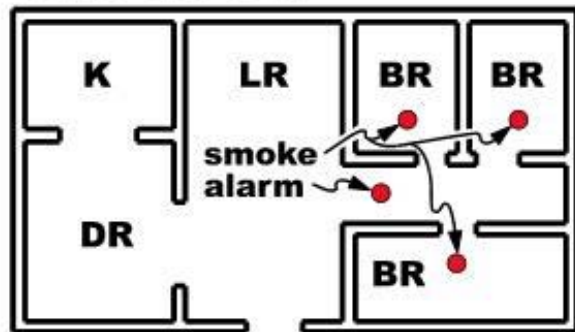
Placement

PLACE ONE SMOKE ALARM ON EVERY FLOOR AND SLEEPING ROOM

MULTI-STORY

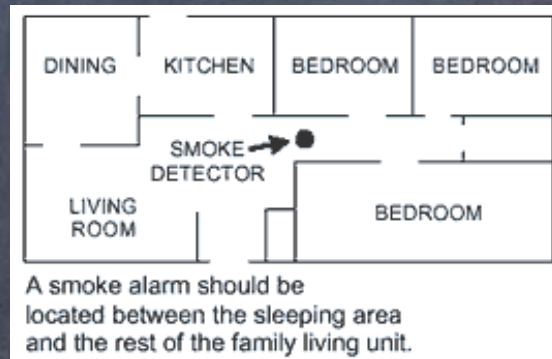


SINGLE LEVEL

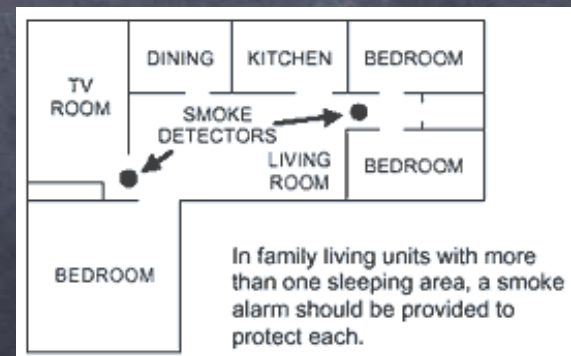
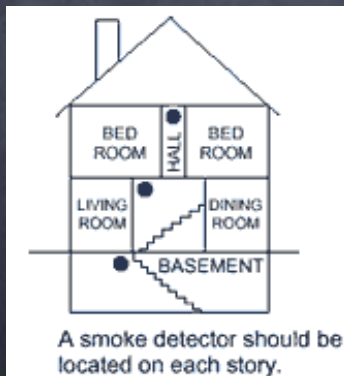
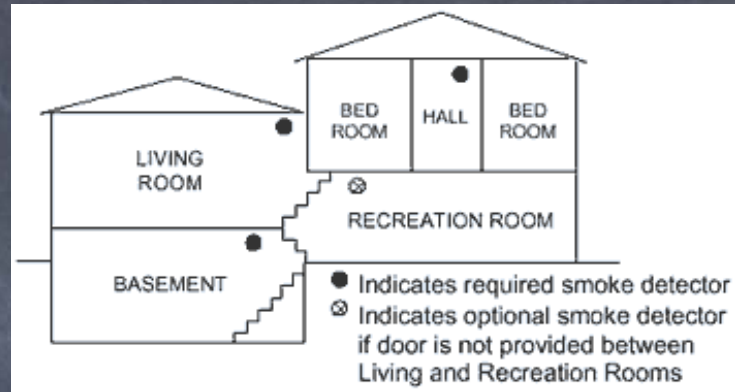


Placement

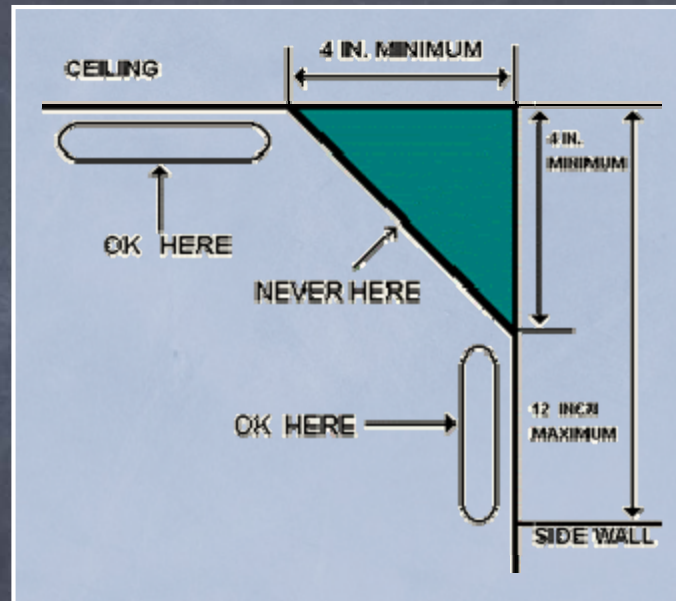
If a home has only one smoke alarm, it should be placed in the hallway outside the living quarters.



Placement



Placement



Follow these guidelines when installing a smoke alarm.

Placement

Majority of fires in a home occur when the residents are sleeping. Keeping the bedroom doors shut will give the residents additional time to escape. The bedroom door will help slow the fire keep carbon monoxide (CO) from entering the bedroom.

Common Smoke Alarm Problems

1. The smoke alarm chirps every few minutes.

This can be caused by a low battery or faulty smoke alarm.

Solution: Replace the battery. Please note that the smoke alarm may chirp a few more times after the battery is replaced.

Common Smoke Alarm Problems

2. When cooking the smoke alarm is triggered.

Steam, light to heavy smoke are sometimes the byproduct of cooking with the stove or oven.

Solution: Turn on the exhaust fan while cooking. If this does not work, replace the smoke alarm with an alarm that has a mute, Hush, or Quick Quiet feature. If this solution does not work, consider moving the alarm away from the kitchen area.

Please remember total removal is not a solution.

What is the life span of a smoke alarm?

The industry standard for most smoke alarms and heat detectors is 10 years. Alarms installed today have a life span of about 8-10 years. After this time, the entire unit should be replaced. It is a good idea to write the date of purchase with a marker on the inside of the alarm to know when to replace it.

Maintenance

- Replace the battery once a year or install a 10 year battery.
- Vacuum the alarm yearly to keep the alarm free from dust and insects.
- Replace entire unit every 10 years.

Contact Information

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360-417-4655

A copy of this presentation in PowerPoint or Keynote can be provided to your organization. For a copy contact Erik Sundin at esundin@cityofpa.us.

Sources

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- 2. <http://www.osha.gov/SLTC/etools/evacuation/images/placement.jpg>, January 8, 2008
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- 4. <http://www.easyhomesecurity.com/placement-fire.htm>, January 8, 2008
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- 6. <http://www.cpsc.gov/cpsc/pub/pubs/5077.html>, January 9, 2008
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- 9. http://www.usfa.dhs.gov/citizens/all_citizens/home_fire_prev/alarms/, January 9, 2008
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