



OLD HOME ELECTRICAL FIRE HAZARDS

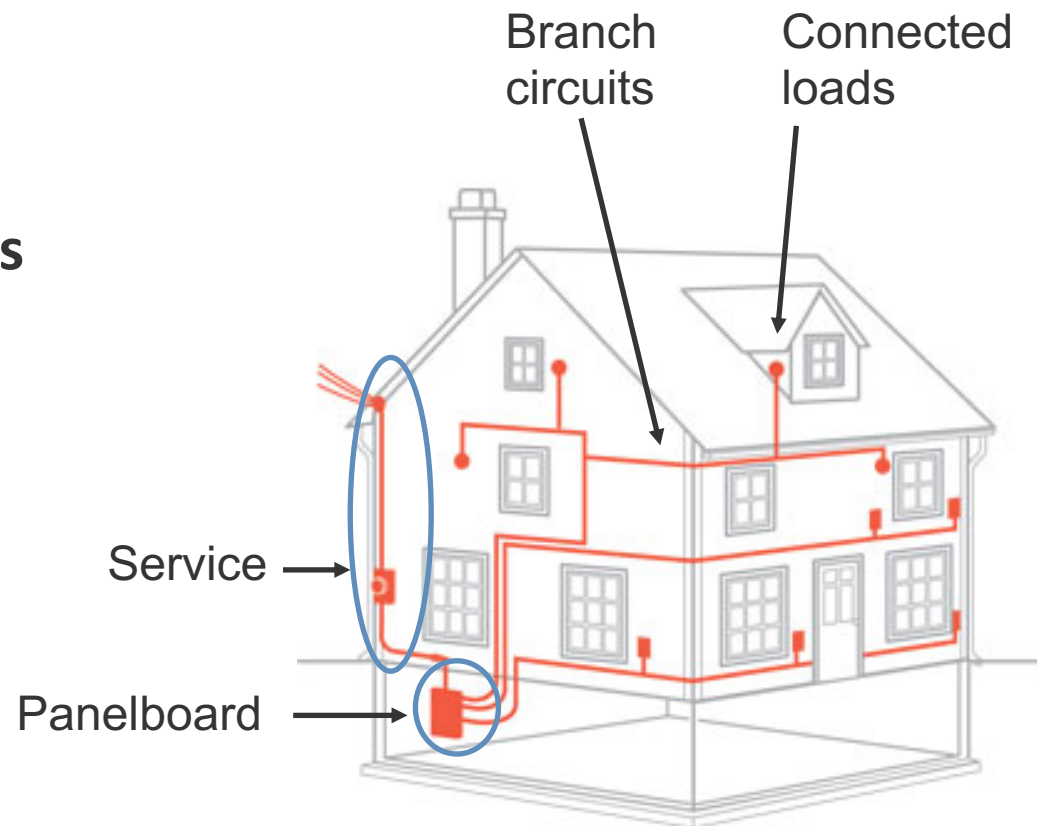
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Four areas of the house to examine

1. Service
2. Panelboard(s)
3. Branch circuits
4. Connected loads





Case Study



A beautiful, well kept 1950's bungalow
in North Vancouver- March 22, 2019



Exposed and live conductors (tape has fallen off) due to age of home.

FIRE RISK:

If the live conductors touch together there will be sparks, which can easily result in fire!



Ground clamp loose –
due to age of home

FIRE RISK:

System grounding
provides protection in
the event on lightning
nearby, and life safety.





Copper water pipe
“bonding” is broken
- due to plumbing work

FIRE RISK:

If a live wire makes
contact with the water
pipe the water pipe
becomes live, which
can result in a spark
and fire!



Build-up of cobwebs in panel-
due to age of home

FIRE RISK:

No sparks no fire.

If, however a spark occurs
the debris can easily ignite!



In older houses (pre 1960s) the build up of debris is often very pronounced!

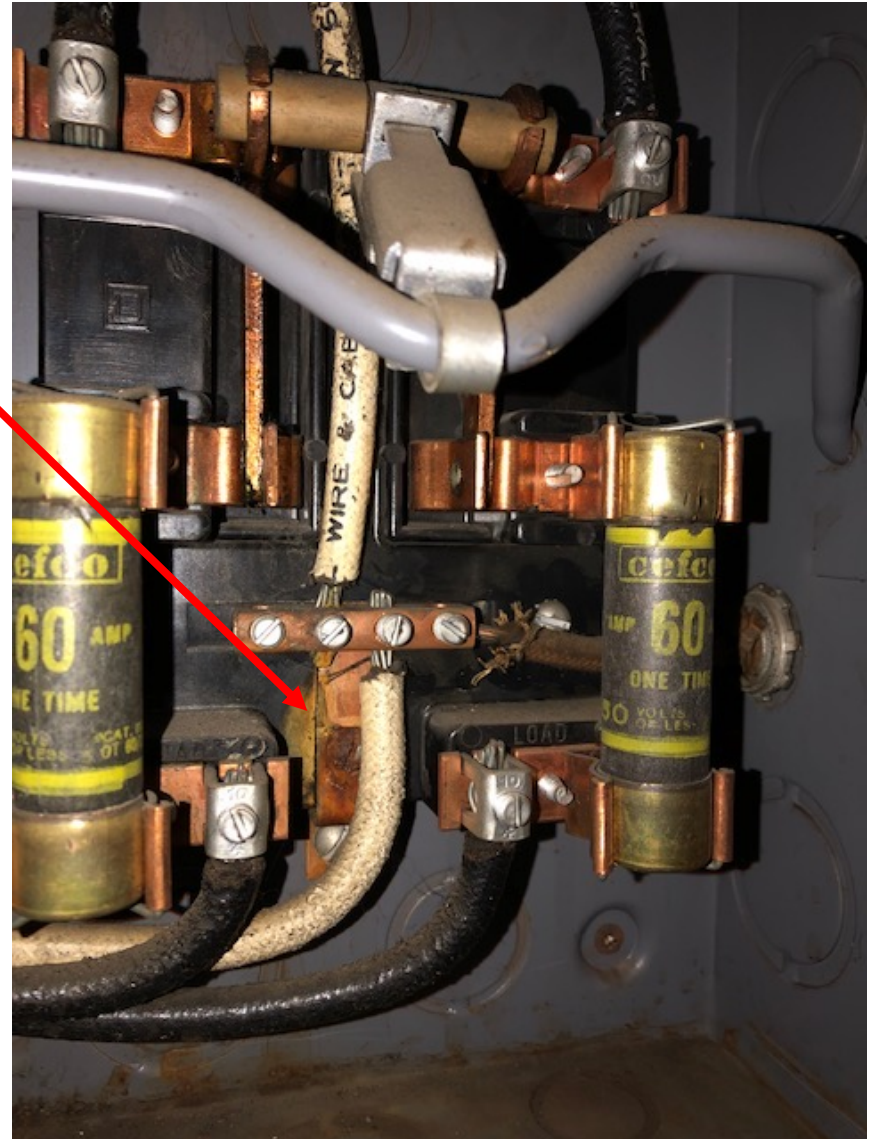


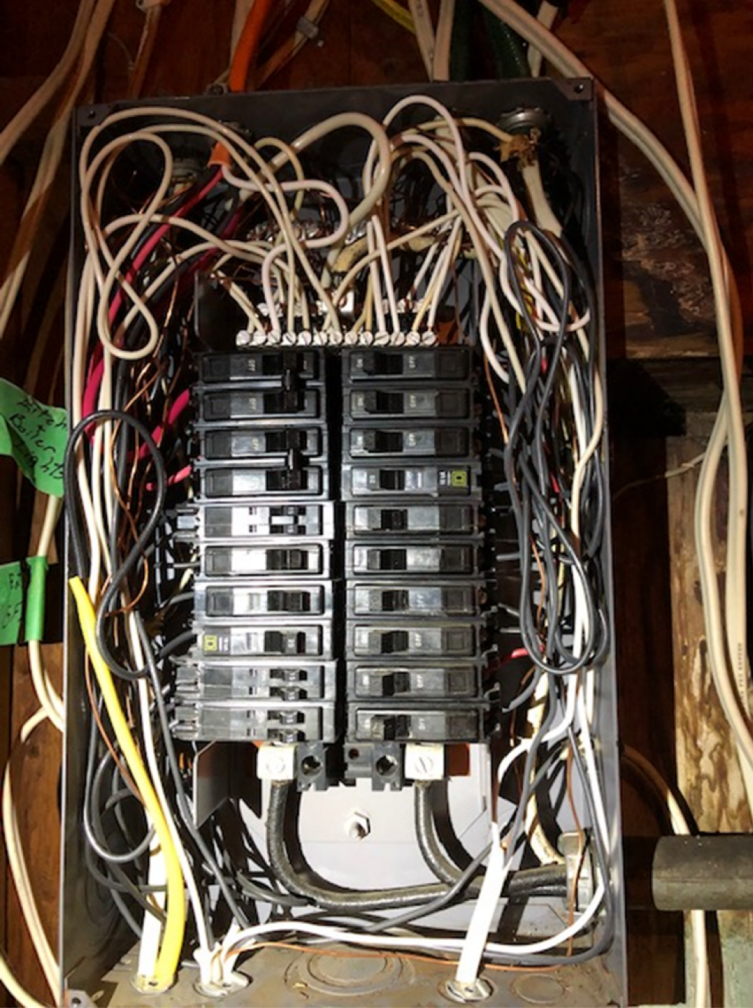


Corrosion in electrical box- due to age of home and condensation

FIRE RISK:

If a spark occurs, corrosion on the connections can result in the circuit breaker not tripping, resulting in a fire!





The electrical panel:

1. Old circuit breakers (1970s) have exceeded expected service life (30 years)
2. DIY circuits (poor electrical connections)

FIRE RISK:

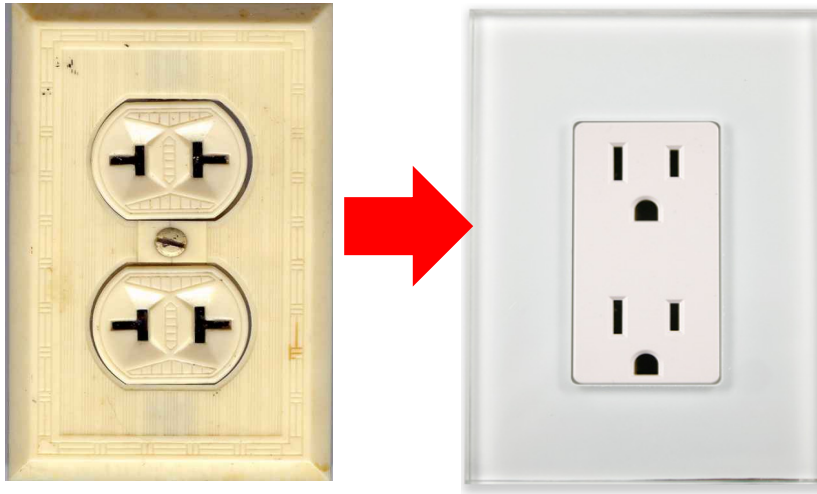
Old circuit breakers, or loose electrical connections can result in the circuit breaker not tripping, resulting in a fire.



Doorbell installation
incorrectly installed
(doorbell transformer is
ungrounded) –
Common in houses pre
1960s:

FIRE RISK:

If doorbell push button
does not release, the
transformer will overheat.
Without grounding, there
can be a fire!



Knob and tube & ungrounded wiring

Knob and tube was one of three types of wiring used pre 1962, feeding 2-prong ungrounded receptacles.

In 99% of homes the old wiring is fine; nothing wrong with it!

THE CONCERN:

In early every house built pre 1962 the 2-prong outlets have been replaced with 3-prong!

FIRE RISK:

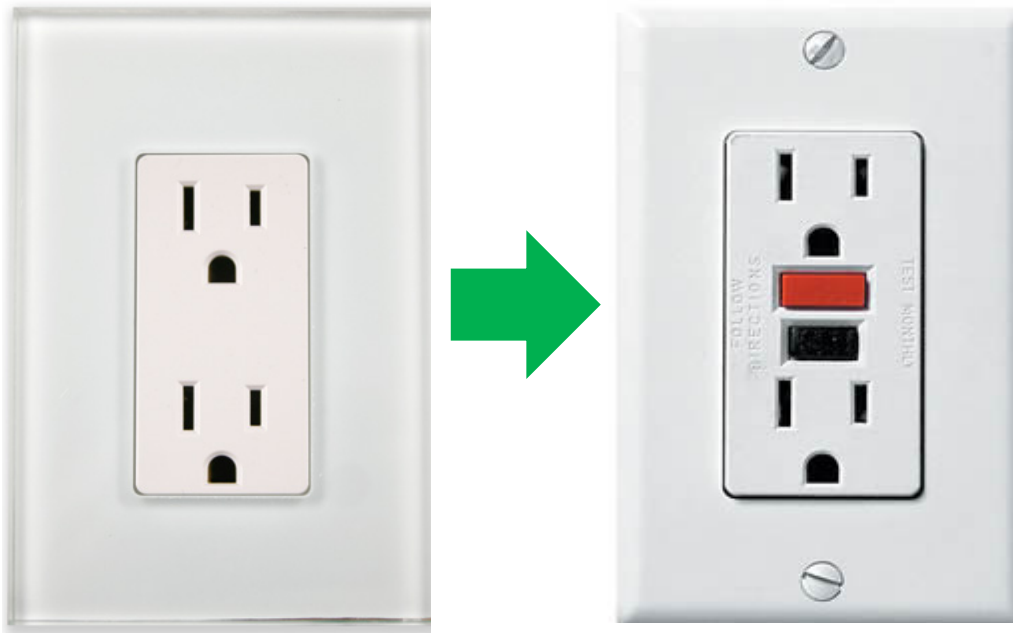
If a spark occurs in the appliance, there is no ground protection; which can result in fire.



THE SOLUTION:

If the old wiring checks out fine, which it usually does, replacing outlets with GFCIs is an excellent solution. The GFCI provides superb ground-fault protection in the event of a spark*.

Cost: \$20 per outlet, vs. \$20,000 for rewire!



*This solution was added to the Canadian Electrical Code 1990. The GFCI can be at the receptacle, upstream, or the circuit breaker. See rule: 26-702 (2).

Homeowner Education



Key causes of electrical fires:

- **Faulty appliances**
- **Light fixtures** with a bulb with too high wattage: Most old fixtures 60 W max.
- **Extension cords** through passage ways, under rugs, undersized, worn-out, secured with staples .
- **Outdoor Christmas lights** secured with staples
- **Space heaters** too close to combustible materials (curtains, beds, clothing).
- **Tinkering with the wiring**, or circuit breakers.
- **Build-up of debris** in electrical boxes





Key actions to lower risk of electrical fire

- Education to the homeowner on electrical fire prevention

Recommended

- A thorough electrical examination, examining the entire electrical system
- Examiner must be a “Master electrician” with thorough knowledge of old home electrical systems and have “No conflict of interest”

Result

- Beautiful homes, such as this, can be confirmed Low Risk inexpensively!



QUESTIONS?



THANK YOU!

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