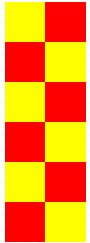




SCDF

The Life Saving Force

... for a safer Singapore



Fire Statistics & Case Studies

NFEC Fire Safety Seminar 2024

MAJ Nick Li

Senior Fire Investigator

Fire Investigation Unit



Scope

- Annual Fire Statistics for 2023
- Case Studies
 - ✓ Unattended Cooking Fires
 - ✓ Electrical Fires
 - ✓ AMD Fires
 - ✓ Industrial Fires



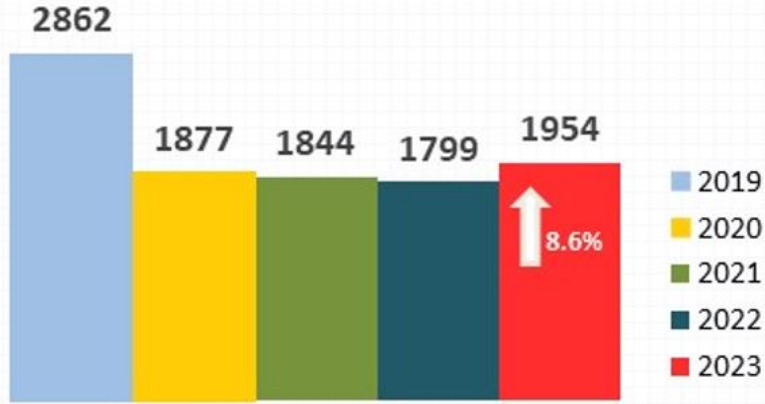
Quote

*“ Fire Safety and Emergency Preparedness starts with **Awareness**, sustained by **Education** and achieved by **Action**.”*

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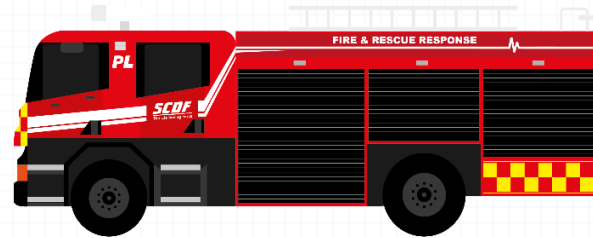
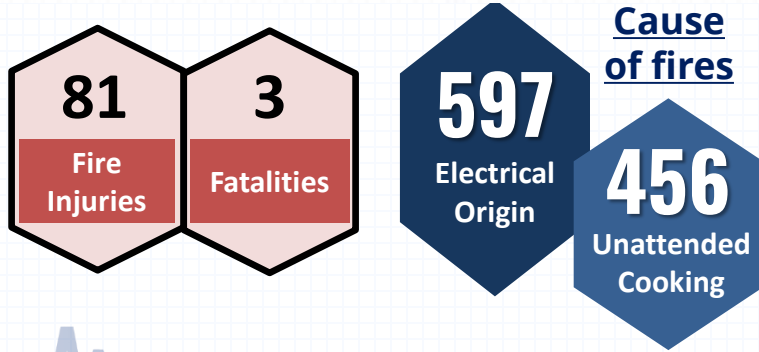
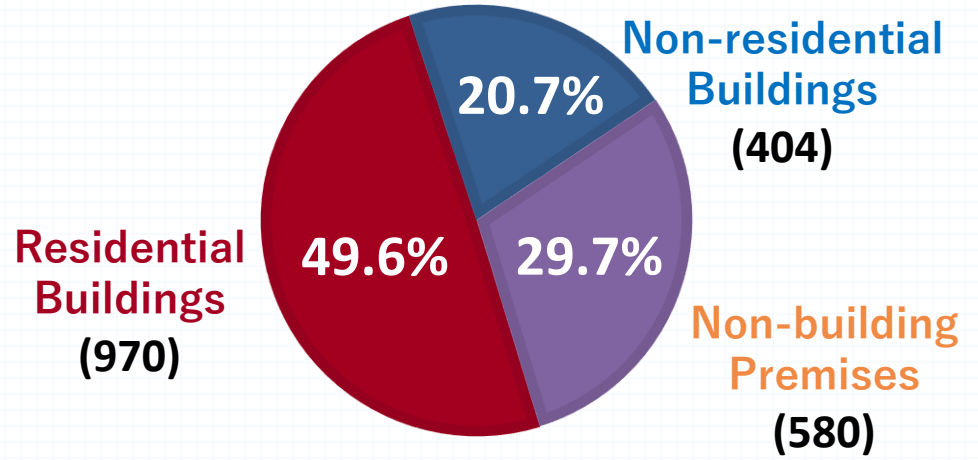
Total Fire Calls



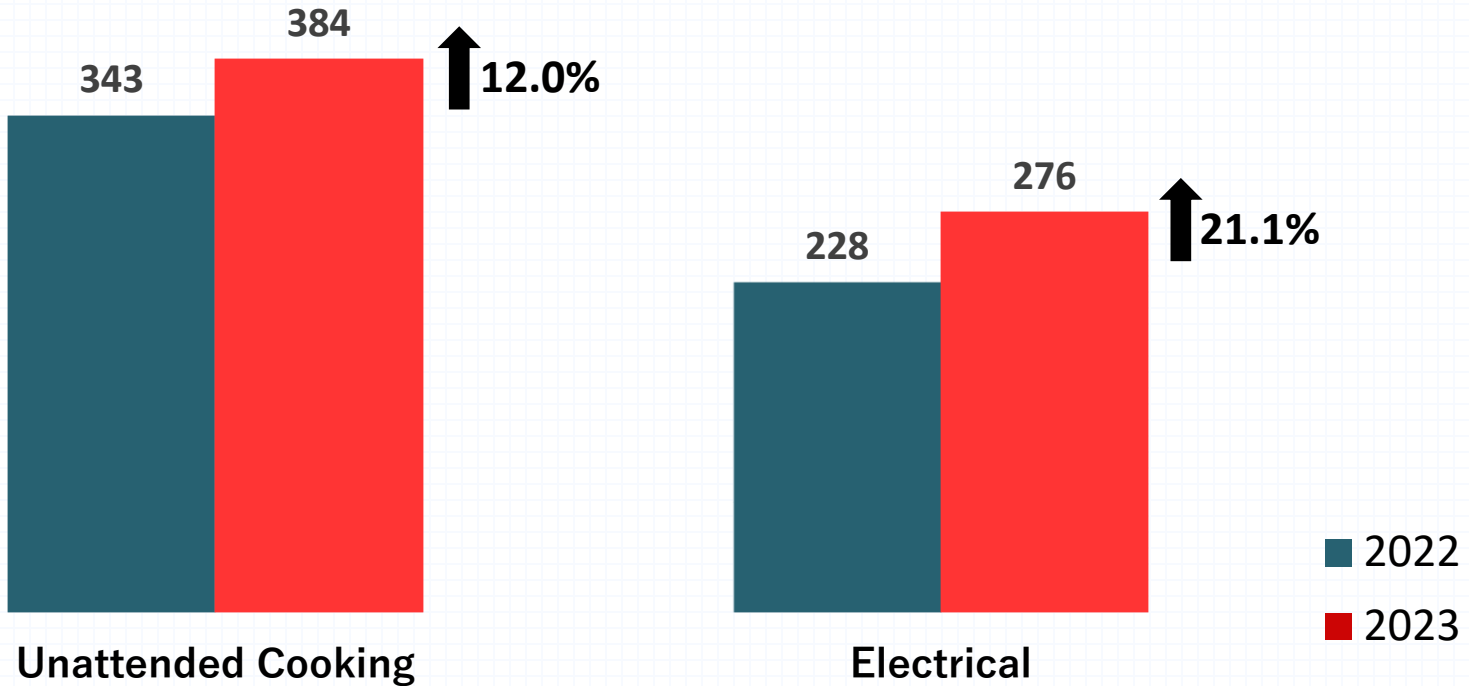
Total Fire Calls

Breakdown of Fire Calls

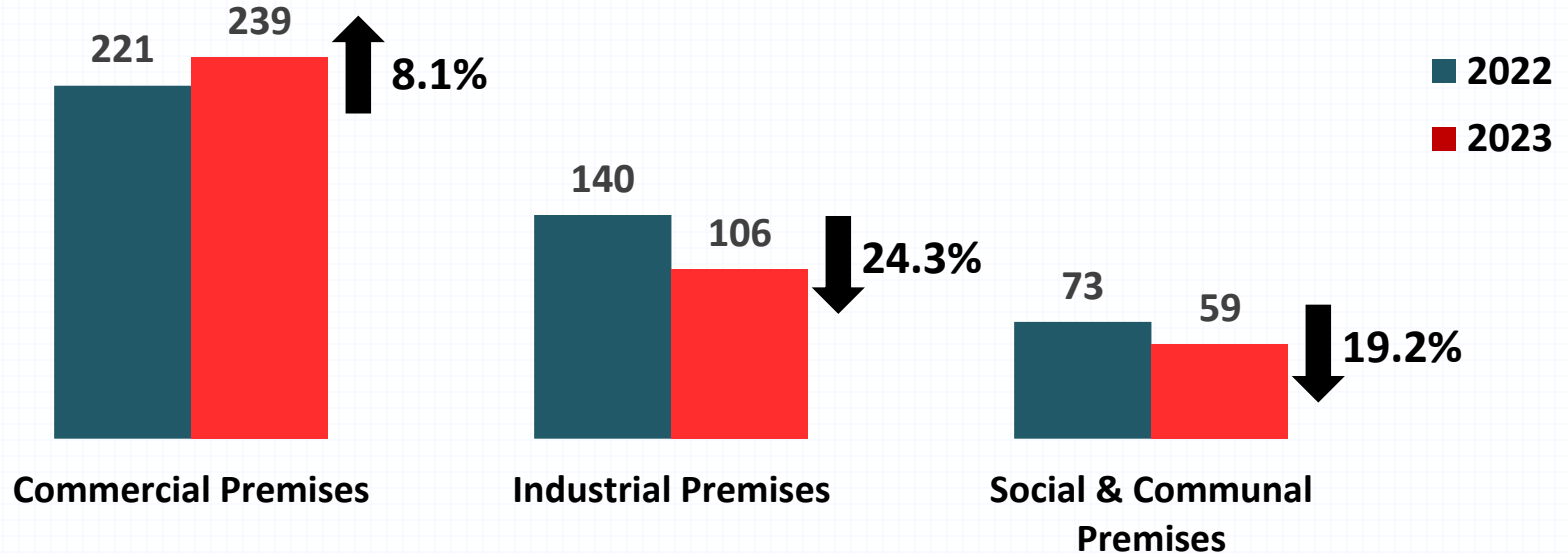
(2023)



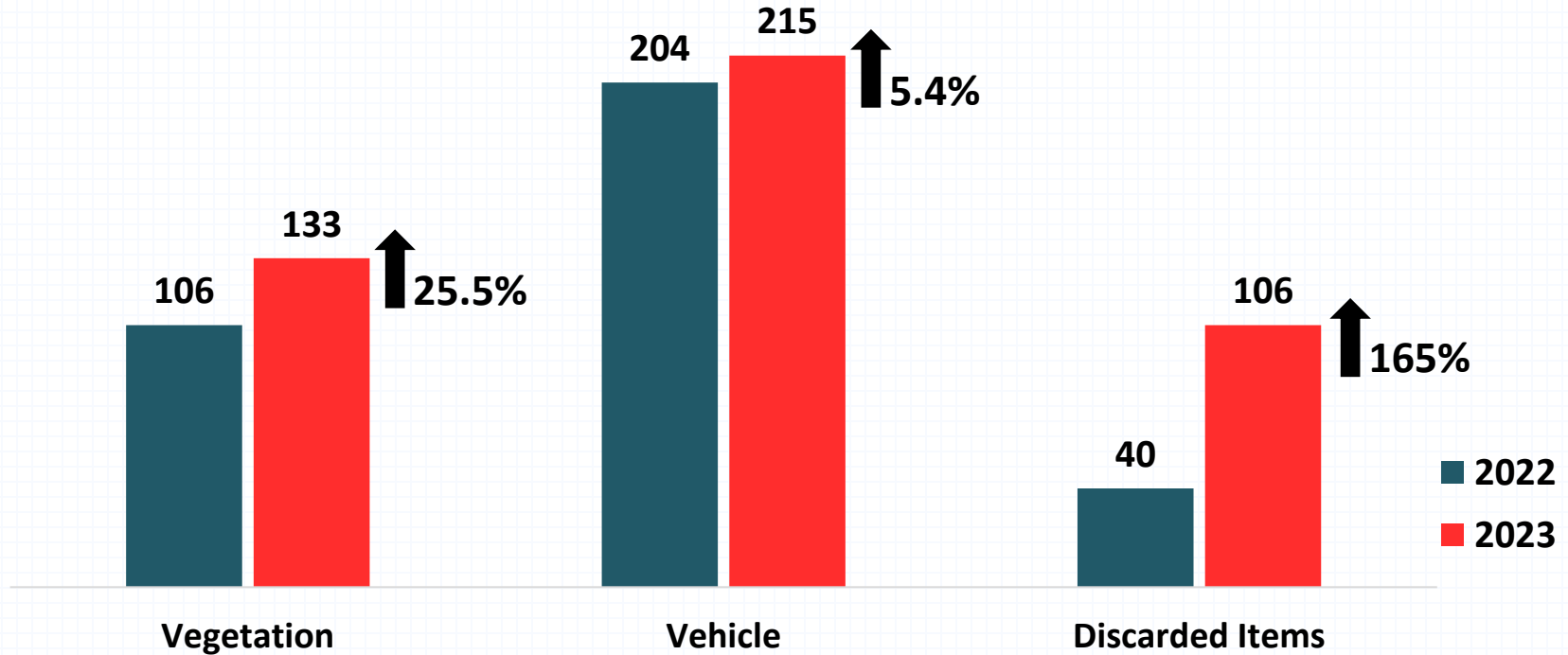
Types of Fires of Concerns in Residential Buildings



Breakdown of Fires at Non-Residential Buildings



Breakdown of Fires at Non-Building Premises





Unattended Cooking Fires

Image Generated by AI(ChatGPT 4.o)



Unattended Cooking Fires

- What is unattended cooking?
 - ✓ Unattended cooking refers to the act of leaving cooking unsupervised
 - ✓ Whether briefly or for an extended period of time
- What happens?
 - ✓ Overheated contents of cooking equipment



Unattended Cooking Fires

- What to do?
 - ✓ Do not use water!
 - ✓ Turn off gas/electrical supply
 - ✓ Fire safety provisions
- How to prevent?
 - ✓ Be attentive
 - ✓ Keep nearby combustibles away
 - ✓ Area cleanliness
 - ✓ Fire suppression systems



Unattended Cooking Fires

- Installed sprinkler system
- Mistake by the cook
- Fire suppression system prevented any escalation of fire and damage



Electrical Fires

Image Generated by AI (ChatGPT 4.o)



Electrical Fires

- What is an electrical fire?
 - ✓ Fire caused by electrical equipment or wiring
- What happened?
 - ✓ Variety of factors related to electrical systems
 - ✓ Faulty appliances, overloaded circuits, damaged wiring resulting in short-circuit, or improper use of electrical devices



Electrical Fires

- What to do?
 - ✓ Do not panic, switch off the main power supply
 - ✓ Your safety is important, evacuate!
- How to prevent?
 - ✓ Do not overload power outlets
 - ✓ Do not use faulty electrical equipment
 - ✓ Switch off power outlets when not in use
 - ✓ Electrical equipment with safety marks

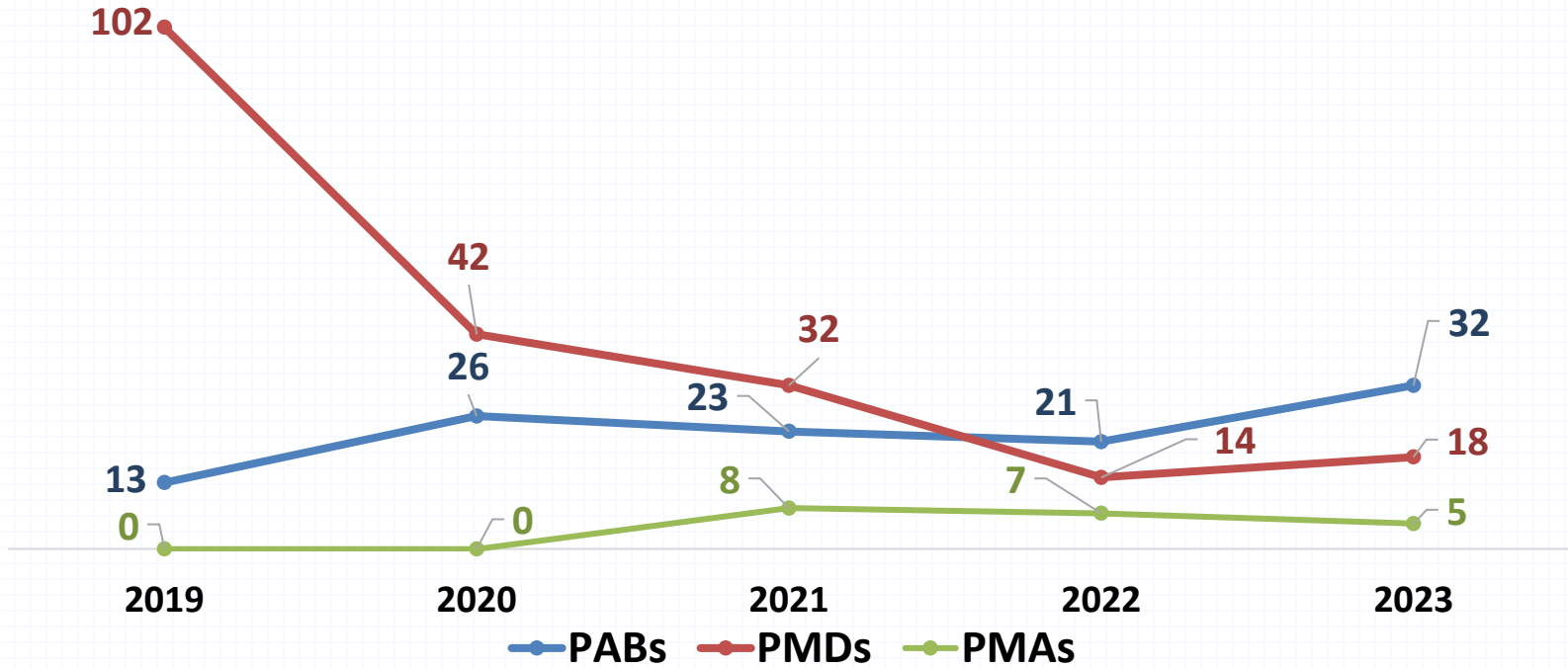


AMD Fires

Image Generated by AI (ChatGPT 4.o)



PAB, PMD and PMA Fires Over The Last 5 Years



Electrical Fires – Active Mobility Devices

- What happened?
 - Thermal Runaway
 - ✓ Self-perpetuating in terms of heat generation, leading to rapid and uncontrolled temperature increase
 - ✓ In the context of batteries, thermal runaway typically occurs due to factors like internal short circuits, overcharging, or external heating, leading to rapid self-heating



Electrical Fires – Active Mobility Devices

- How to prevent?
 - ✓ Use OEM chargers
 - ✓ Do not charge longer than necessary
 - ✓ Do not modify your device or batteries
 - ✓ Replace faulty batteries
 - ✓ Periodically replace batteries





Industrial Fires

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Industrial Fires

- What is Electrostatic discharge (ESD)?
 - ✓ Liquid transfer operations are common in workplaces
 - ✓ The transfer or loading of flammable liquids may generate and accumulate electric charges posing an ESD hazard
 - ✓ Ignite flammable vapour within flammability limits



Industrial Fires

- How to prevent ESD?
 - ✓ Grounding(person/equipment)
 - ✓ Using of ESD safe tools
 - ✓ Educate and train personnel
 - ✓ Other considerations
 - Humidity
 - Use of materials that accumulate static charges (i.e.: Plastic,Rubber)
 - Inherent properties of material/product



Industrial Fires

- What is Spontaneous Combustion?
 - ✓ The ignition of a material resulting from a natural heat-producing process that occurs within the material itself, without the application of an external heat source.
 - ✓ This ignition can happen when the material reaches a critical temperature and combines with oxygen in the air.



Industrial Fires

- How to prevent Spontaneous Combustion?
 - ✓ Conduct Risk Assessment & practice mitigation measures
 - ✓ Proper storage and disposal of materials that are prone to such reactions
 - ✓ Other Considerations
 - Ensuring fire fighting provisions are well maintained
 - Proper containment and segregation of materials



Industrial Fires

- What to do before an Industrial Fire?
 - ✓ Maintenance of Company Emergency Response Team, fire fighting provisions and Emergency Response Plan
 - ✓ Clear and updated plans
 - ✓ Regular refresher training for CERT
- What to do during the Fire?
 - ✓ Mitigate incident during incipient stage
 - ✓ Continue to support SCDF



Quote

*“**Fire safety** isn't just a checklist; it's a commitment to protect lives. It's about vigilance, **preparedness**, and a collective responsibility to ensure that every action we take contributes to a **safer** environment for the people that we protect.”*

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Thank You

