For Discussion
on 9 April 2021

Legislative Council Panel on Security

Strengthening the Public's Emergency Preparedness and Evacuation Awareness, and Promoting a Wider Use of Stand-alone Fire Detectors

Purpose

This paper briefs Members on –

(a) the Fire Services Department's (FSD) efforts in strengthening the public's emergency preparedness and evacuation awareness; and

(b) the proposal of promoting a wider use of stand-alone fire detectors for enhancing fire safety.

Community Emergency Preparedness Education and Promotion

2. The Government has attached great importance to the promotion of fire safety and emergency preparedness with an aim to raise public awareness on these two aspects. To this end, FSD has long been endeavouring to strengthen the community emergency preparedness through educational and promotional activities. Apart from using traditional means (for example, through television, radio and promotional leaflets) to conduct educational and promotional work, FSD has also exerted extra efforts to reach out to different age and community groups through other different channels, such as –

(a) Promotion on social media platforms

FSD has made great use of online platforms and social media, such as its website and official Facebook page, in disseminating information

regarding fire safety and emergency preparedness. The Facebook page promotes the "Three Basic Skills on Emergency Preparedness", with a series of educational video clips uploaded to there, YouTube channel as well as at FSD's website disseminating three categories of emergency preparedness skills under the said theme –

(i) On "extinguish and prevent fire" – To educate the public on the proper use and maintenance of different fire service installations and equipment;

(ii) On "self-help and help others" – A range of life-saving skills such as bleeding control, burn management, cardiopulmonary resuscitation (CPR) and the use of automated external defibrillators (AED) are introduced; and

(iii) On "escape and evacuate" – To offer advice on how to identify safe escape routes and suitable emergency shelters in the event of fires or other emergencies.

FSD has also launched "the Hong Kong Fire Services Department Mobile Application" which provides the public with access to the latest FSD information through their smartphones or tablets anytime and anywhere.

Apart from the above, through the virtual character "Anyone", FSD has been publicising the messages on community emergency preparedness via its Facebook page and YouTube channel in a light-hearted manner to bring out the important message that "Anyone" can save lives as long as he or she dares to do what is advised.

(b) Public education facilities

(i) <u>Fire and Ambulance Services Education Centre cum Museum</u>
Locating at the Fire and Ambulance Services Academy, the Fire and Ambulance Services Education Centre cum Museum offers a wide range of interactive and multimedia information facilities, and a number of different exhibition and experience areas, as means to

educate the public on basic fire safety and ambulance knowledge, contingency methods/what to do in case of fire and public first aid skills, with a view to heightening their awareness of emergency preparedness.

(ii) Emergency Preparedness Education Bus and Fire Safety Education Bus

The Emergency Preparedness Education Bus and the Fire Safety Education Bus promote the "Three Basic Skills on Emergency Preparedness" and evacuation techniques respectively to the public. The two buses are equipped with various facilities (for example a virtual reality fire-escape interactive game system, multi-media and interactive fire suppression simulation system, simulated domestic scenario, etc.), allowing visitors to learn how to stay calm in case of fire and use different evacuation skills in view of the actual situation, etc.. The two buses also allow visitors to learn how to choose and use appropriate fire extinguishers to put out different types of fire and how to use hose reel in a simulation mode, etc..

(iii) Ambulance Service Education Vehicle

The Ambulance Service Education Vehicle attends publicity and educational events at primary and secondary schools, community centres, private and public housing estates, fire stations, ambulance depots, etc. It conveys the messages of "Use the ambulance service properly", "Give way to ambulances" and "Your help can save a life" via CPR and AED simulations and different multimedia interactive games in the vehicle.

(c) Community emergency preparedness talks and other programmes on promoting fire safety and ambulance service

FSD has been delivering community emergency preparedness talks to different government departments, companies and organisations, including schools, building management companies, owners' corporations, centres for the elderly, consulates and ethnic minority organisations, etc. Contents of the talks are all-inclusive, including "Three Basic Skills on Emergency Preparedness" and specific safety

guidelines, such as course of actions in tropical cyclone, traffic accidents, hiking accidents and so on. Besides, FSD has always been organising different types of community and campus promotional and educational activities (e.g. Fire Safety Ambassador Scheme, Fire Safety Education in Kindergartens Programme, School Outreaching Programme – Proper Use of Ambulance Service Public Education Programme, "Press to shock – Save a life" AED Courses, etc.) with an aim to raise public awareness on fire safety and emergency preparedness.

3. FSD will continue to put in efforts on educational and promotional work through different channels, so as to enhance the public's emergency response capability.

Promotion on a Wider Use of Stand-alone Fire Detectors

4. On top of strengthening the public's emergency preparedness, it is considered that strengthening the evacuation awareness is no less important in saving life. According to FSD's analysis, almost 90% of building fires occurred in domestic premises. The fatality rate could have been reduced if residents were able to evacuate before they became unable to save themselves due to the effects of exposure to smoke, heat, or toxic effluent, particularly in circumstances where the residents fell asleep in their premises when the fires occurred. Early detection of fire and an early warning to people in building for timely evacuation are therefore of paramount importance to save their lives in case of a fire.

Stand-alone fire detectors

5. A stand-alone fire detector is a self-contained battery-operated device that incorporates a fire detector and an alarm, serving the purpose of detecting a fire and giving audible alarm warning or other form of warning[1] to people in building during the incipient stage of fire. With prompt notification, people in building can have more time for evacuation.

[1] Some stand-alone fire detectors can give sound, vibration and visual alarm at the same time, targeting persons with visual or hearing impairments.

6. In order to evaluate the performance and functionality of stand-alone fire detectors available in the market, FSD has conducted tests in simulated domestic fire scenarios on 22 different models which conform to various international/national standards of the Mainland, the United Kingdom and the United States. Testing results show that all these devices perform satisfactorily in giving timely alarm warning.

7. A stand-alone fire detector adopting the modern technology normally has a lifespan of around 10 years. It is normally fitted to a mounting plate, which can be easily attached to the surface of a ceiling by adhesive tapes or screws. Its installation is simple and does not require any specific skill. It usually comes with a test button for checking whether it works normally, and a low battery warning buzz to alert users to the need for battery replacement. Owners can carry out periodic tests themselves by following the instructions in the user manual. No specific maintenance skill is required. Details of the operation, installation and maintenance of a stand-alone fire detector are elaborated at **Annex**.

Mainland and Overseas experience

8. In the Mainland, adoption of stand-alone fire detectors is regarded as a fire protection measure, and the installation of stand-alone fire detectors in different premises has been encouraged. Overseas countries, such as Singapore, the United States and the United Kingdom, have also been stepping up efforts to promote a wider use of stand-alone fire detectors in residential premises. According to a report issued by the National Fire Protection Association (NFPA)[2] in January 2019, the risk of dying in reported home structure fires is 54% lower in homes with working smoke alarms (a kind of fire detector) than in homes with no alarm or none that works.

9. Having regard to the effectiveness of stand-alone fire detectors in reducing fire losses, very simple installation and maintenance, as well as

[2] NFPA is a US-based global non-profit organisation devoted to eliminating death, injury, property and economic loss due to fire, electrical and related hazards. It publishes more than 300 codes and standards intended to minimise the possibility and effects of fire and other risks. The codes and standards published by the association have been widely adopted in North America and the Middle East.

their rising importance in domestic fire protection, FSD is of the view that promoting a wider use of stand-alone fire detectors of the public's own volition in buildings and premises, particularly in home, could effectively reduce fire losses.

The extant regulatory control – the Fire Service (Installations and Equipment) Regulations

10. Under the extant regulatory regime, a stand-alone fire detector is a kind of fire service installations or equipment (FSI) under section 2 of the Fire Services Ordinance (Cap. 95) (the Ordinance)[3]. Hence, a registered contractor has to be engaged for the installation, maintenance, inspection or repair of a stand-alone fire detector as stipulated in the Fire Service (Installations and Equipment) Regulations (Cap. 95B)(FS(IE)R)[4]. Besides, an owner of a stand-alone fire detector is required to keep such device in efficient working order at all times and have it inspected by a registered contractor at least once in every 12 months[5].

11. The above statutory obligations, and the cost involved in engaging registered contractors for fulfilling those obligations[6], lower the public's initiative to install stand-alone fire detectors in buildings or homes of their own volition.

Proposal

12. With a view to promoting a wider use of stand-alone fire detectors in buildings and premises, particularly in homes, for enhancing fire safety

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[3] According to section 2 of the Ordinance, FSI means any installation or equipment manufactured, used or designed to be used for the purposes of, among others, giving warning of a fire.

[4] Regulations 6(1) and 7(1) of FS(IE)R provide that no FSI shall be installed, maintained, inspected or repaired by any person other than a registered contractor.

[5] Regulation 8 of FS(IE)R stipulates that the owner of any FSI which is installed in any premises shall keep such FSI in efficient working order at all times and have such FSI inspected by a registered contractor at least once in every 12 months.

[6] Under the existing regulatory regime, the owner of a stand-alone fire detector needs to shoulder the costs of purchasing it, engaging a registered contractor for its installation and issuance of a Certificate of Fire Service Installations and Equipment upon completion of installation (costing about $1,000 altogether). Moreover, the owner has to pay $500 for engaging a registered contractor to inspect the stand-alone fire detector at least once a year. Such expenditure may not be proportionate in the eyes of the public, as compared to the retail price of a stand-alone fire detector (ranging from $200 to $800 per device).

and reducing fire losses, we propose to amend FS(IE)R to exempt stand-alone fire detectors from the application of regulations 6(1), 7(1) and 8 of FS(IE)R, to the effect that if owners/occupants of any buildings/premises **install stand-alone fire detectors of their own volition**, they are not required to engage registered contractor for the installation, maintenance, inspection or repair. Besides, they will be exempted from the statutory duty of keeping the stand-alone fire detectors in efficient working order at all times and having them inspected by registered contractor at least once in every 12 months.

13. Nevertheless, as to stand-alone fire detectors that are required by or pursuant to law to be installed, they will continue to be regulated by relevant statutory requirements (i.e. to be installed, maintained, inspected or repaired by registered contractor); and the owners have to continue to comply with relevant statutory duty (i.e. to keep such detectors in efficient working order at all times and to have them inspected by registered contractor at least once in every 12 months)[7].

Promotion and Publicity

14. FSD will launch promotional activities educating the public on the benefits and use of the device through the social media and traditional media. It will also publish guidelines on selection of appropriate stand-alone fire detectors which meet established international/national standards of the Mainland, the United Kingdom, the United States and Australia[8].

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[7] In general, a fire detection system instead of stand-alone fire detectors should be installed in buildings or premises for compliance with relevant laws and licensing requirements, or the Codes of Practice for Minimum Fire Service Installations and Equipment and Inspection, Testing and Maintenance of Installations and Equipment issued by FSD. Installation of stand-alone fire detectors may be required as part of the licensing requirements under certain statutory regimes (for example, guesthouses (i.e. holiday flats) regulated by the Hotel and Guesthouse Accommodation Ordinance (Cap. 349), and the Drug Treatment and Rehabilitation Centres regulated by the Drug Dependent Persons Treatment and Rehabilitation Centres (Licensing) Ordinance (Cap. 566)) or as a mandatory stop-gap measure for mitigating the risk imposed on buildings, premises and their occupants during the suspension or inoperative period of FSI. Stand-alone fire detectors installed under the above circumstances should continue to be subject to the requirements of regulations 6(1), 7(1) and 8 of FS(IE)R.

[8] These standards are generally adopted worldwide, regulating the construction, components, performance, manufacturing and production, marking, etc. of stand-alone fire detectors. These standards also provide a general benchmark on the reliability of the stand-alone fire detectors in the market.

FSD will also provide guidelines on how to maintain the effectiveness of detectors by the owners themselves.

15. FSD will liaise with relevant trade representatives advising them to import/sell stand-alone fire detectors which meet the above-mentioned standards. If FSD receives any report involving false description of the above-mentioned detectors (e.g. failure to comply with the standard claimed by the manufacturer/supplier), it will refer the case to the relevant enforcement authorities for follow-up.

Consultation

16. FSD consulted the key stakeholder, Registered Fire Service Installation Contractors of Hong Kong Association (FSICA), in October 2018 and December 2020. FSICA is in support of the proposal. Given that the legislative amendments involve only stand-alone fire detectors which will be installed of one's volition, the impact on the FSI trade is small. FSD also conducted 10 briefing sessions on the proposal from December 2020 to March 2021, which were attended by FSICA, the Hong Kong Institution of Engineers, the Hong Kong Federation of Insurers and construction industry. In addition, FSD uploaded an information note regarding the use and benefits of stand-alone fire detector and the related legislative proposal to its website in March 2021 for public information.

Way Forward

17. To take forward the proposal at paragraph 12, we plan to table the amendment regulation at the Legislative Council for negative vetting in the second quarter of 2021 for implementation of the proposal in the second half of 2021.

Security Bureau
Fire Services Department
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Annex

Operation, Installation & Maintenance of Stand-alone Battery-operated Fire Detectors (stand-alone fire detector)

(a) Operation

Stand-alone fire detector is a self-operable device which mainly consists of smoke/heat sensor, alarm sounder, battery and test button without other ancillaries. It is different from fire detectors the installation of which is statutorily required. Fire detectors, which are statutorily required to be installed in buildings and licensed premises, such as commercial buildings, industrial buildings, restaurants and homes for the aged, are normally connected with various components and circuitry forming part of a fire detection system of a building/premise.

A stand-alone fire detector is a palm-sized device that gives sufficient sound level to alert building occupants upon its actuation[1] *(Figure 1)*. Depending on the types, they can detect smoke, heat or products of combustion during the incipient stage of fires and give alert accordingly.

Figure 1 - Typical stand-alone fire detector

[1] Some stand-alone fire detectors can give sound, vibration and visual alarm at the same time, targeting persons with visual or hearing impairments.

(b) Installation & Maintenance

Installation of stand-alone fire detectors is **simple and does not need any specific skill**. It is normally fitted to a mounting plate (*Figure 2*), which can be easily attached to the surface of a ceiling by adhesive tapes or screws. It also usually comes with a **test button** for checking whether it works normally, and a **low battery warning buzz** to alert users to the need for battery replacement. Stand-alone fire detectors are commonly available in retail and online platforms and manufactured with service life of 10 years. **No specific maintenance skill** is required. Users may carry out periodic tests themselves by following the instructions in the user manual that comes with the device upon purchase, or the guidelines to be published by the Fire Services Department.

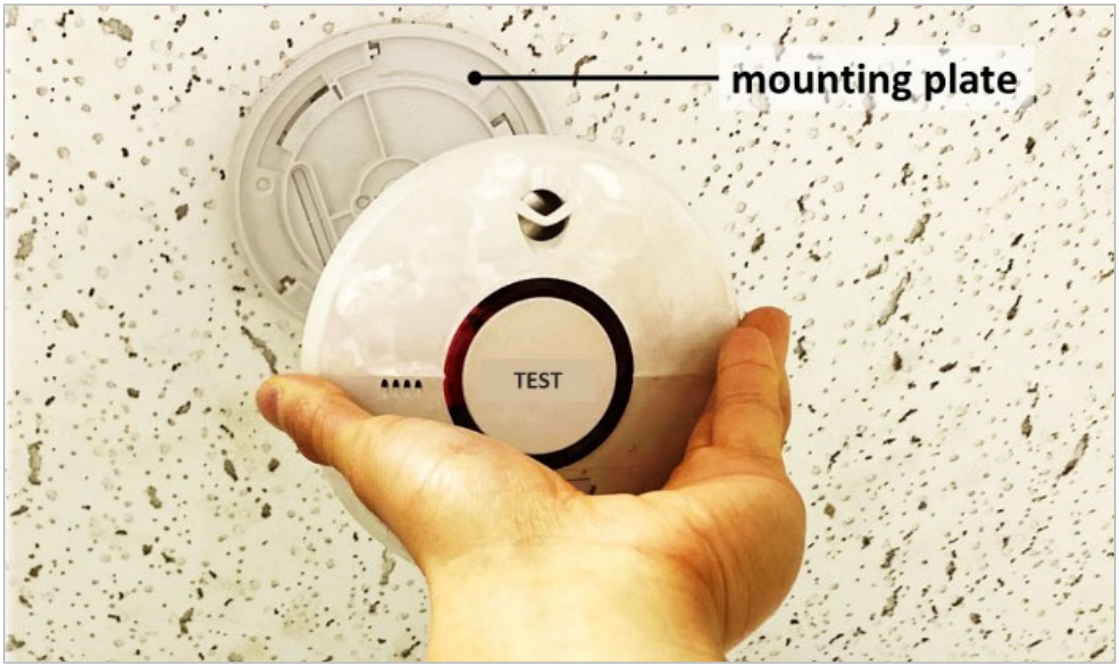

Figure 2 – A stand-alone fire detector being mounted onto mounting plate