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A FIRE caused by a balloon launched from Gaza. (Reuters)

Let loose with lasers

National effort needed to develop effective system against airborne incendiary devices

• By IRIT JUWILER and JACOB GAVAN

Our security forces have had impressive success intercepting Qassam and other rockets from the Gaza Strip and contending with the tunnel threat, but a solution to the incendiary balloons and the drones has yet to be developed. Gaza found a simple, low-cost method of sending kites and balloons with attached incendiary materials, explosives and munitions that are even more dangerous, which burn fields, destroy plants and animal life and endanger civilians and soldiers.

Up until to now, tens of thousands of acres have been burned; heavy damage for a small country such as ours. This week we were informed that more incendiary balloons were sent from Gaza.

Current kinetic defense systems, including the Iron Dome system, are ineffective against the incendiary balloons, and a national effort is needed to find an effective and ethical solution to address this threat.

Laser systems can be an ideal solution for eliminating the threat of balloons and drones, and in the future even precision missiles. The balloons or kites sent across the border are carried by the wind at a speed significantly slower than the speed of sound. The speed of the laser beam on the other hand is much faster, almost equal to the speed of light.

Thus the incendiary balloons can be shot down while still in enemy territory, within a short period of time, with high certainty and high precision, without harming the children who have been sent to fly the balloons.

In addition to being a more effective and precise weapon, the economic cost of using lasers (in other words, the consumption of electrical energy), is very low compared to the high cost of bullets.

In the past, Israel was a pioneer in developing laser weapons against Qassams and missiles. The NAUTILUS Project was launched jointly with the US Defense Department and companies such as Rafael, Elbit and Israel Aerospace Industries in 1996, with the aim of developing and manufacturing chemical laser cannons. Trial results were encouraging, however the technology was not fully developed at the time and the project was discontinued in 2005. Kinetic weapon systems were developed instead: the Iron Dome, David's Sling and the Hetz (Arrow) systems, which although operative, are costly and slow.

In light of current increased manufacturing of high-speed and precise missiles in large quantities, and threats from Iran and the Hezbollah, there is an urgent need to return to the development and production of laser-weapon systems, which have advanced in the interim.

In any case, Iron Dome and the other existing systems will remain vital, as there is no substitute for them in the meantime. What's more, they will continue to provide protection when the effectiveness of laser systems decreases under bad weather and atmospheric conditions and on rainy and cloudy days.

Nonetheless, there is an urgent need to develop and produce powerful laser cannons and to combine them with existing kinetic systems.

The State of Israel must get to work and invest in these efforts. Similar to the national technological effort to eliminate the threat of the tunnels, there is now an existential need for a national effort to design, develop and produce energy weapon systems of the fiber laser, chemical laser and microwave type. These will operate in combination with existing kinetic systems against the threat of a barrage of rapid and even supersonic missiles.

These efforts must be carried out in cooperation with the US government and leading security companies in this field. This is the current, immediate need, and should be one of the national undertakings of the next government, in order to ensure the life of the people living in Zion and to prevent large-scale destruction and countless casualties.

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