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Military Technology: Antithesis Research Paper

We live in a world where technology is swiftly extending into all branches of society. Many industries have seen a blast of technological innovation this past decade, especially within the military. The more reliant on technology the military becomes, the more controversy bubbles within society. Although there is no clear-cut answer on whether or not we should be continuously developing military technology, it is certain that the technology itself does not cause harm to society. In fact, military technology has allowed for safer, and reinforced protective measures, ultimately benefiting the greater population.

Military organizations tend to seek excellence in all of their departments, especially when it comes to defense. Logically, militaries aim to protect the citizens they're serving. Thankfully, new technology has led to innovation within the defense sector across the globe. Since its creation, Israel has faced terrorism from the surrounding countries, and have had an influx of missile attacks coming in from the Gaza strip. It was becoming harder and harder for the government to protect its citizens from the incoming terrorist attacks. In March 2011, Rafael Advanced Defense Systems, an Israeli defense technology company, deployed a new system in southern Israel with the goal of protecting Israel's citizens from terror attacks. The name of the system is *Kippat Barzel*, or in English, the Iron Dome. The Iron Dome is a mobile, all-weather air defense system which intercepts and destroys short-range rockets, artillery shells, and mortars fired from distances up to 45 miles. The dome is a three-piece system of interceptor batteries that shoot rockets out of the sky. A radar tracks the rocket as it is fired across the border into Israel, and then advanced software predicts the rocket's trajectory. The information it provides is used to guide interceptor missiles, which are fired from the ground to blow the rocket into harmless pieces in the sky. According to a report in *The Jerusalem Post*, as of March 2012, one year after the deployment, the Iron Dome had intercepted 90% of rockets launched from Gaza that would have landed in populated areas. By October 2014, the Iron Dome had intercepted over 1,200 rockets. This past summer, Palestinians in the Gaza strip fired 4,594 steel artillery rockets into Israel during a wave of terror attacks. The Iron dome intercepted all but 70 of the rockets, and *Aviation Week* only reported that a single civilian was killed from the rockets. According to data recorded by *B'tselem*, there were 731 Israeli civilian casualties between the start of the Second intifada (2000) and Operation Cast Lead, otherwise known as the Gaza war, through 2009. Within the same conflict between Israel and Palestine, Israel was able to reduce civilian casualties down to within a few years. This can be credited to Israel's advances in military technology, ultimately benefiting society, and keeping Israeli citizens safe.

Israel has not only developed a defense system to help counter the incoming terror attacks, but it also installed an early-warning radar system to give civilians proper warning before a bomb hits called *Tzeva Adom* ("Red Color", or Code Red). The system is installed throughout southern Israel, primarily in locations highly susceptible to terror attacks from the Gaza strip (i.e. Sderot, Ashkelon, Netivot, Ofakim, Be'er Sheva, Gedera, Kiryat Gat, etc.) The radar is able to detect mortars, Qassam and al-Quds rockets, Katyusha rockets, Grad rockets, and Fajr-5 rockets. Every building in Israel has a bomb shelter inside, and the radar system act as a

civil defense notification system which tells the residents they have 15 seconds to get to a bomb shelter. The radar technology behind the *Tzeva Adom* system within itself is incredible, even more so the new *Tzeva Adom* mobile application now available on iOS and Android platforms. The app allows users to select a specific location for which they will receive Code Red push notifications and customized alarms for. Zohar Friedman from the *Jerusalem Post* writes: “This app will prove especially helpful for jittery Israelis who may find themselves mistaking other sirens – such as ambulance and police sirens that have been ringing with increased frequency lately – for an air raid siren. This is also especially helpful for those who are hearing impaired, wearing headphones, or for whatever reason miss the admittedly powerful siren.” According to CNN, in July 2014 during Operation Protective Edge, the Code Red mobile app was the most downloaded app in all of Israel. Code Red notifications have extended to social media as well, Twitter users are able to follow a user and receive live updates as to when *Tzeva Adom* sounds anywhere throughout the country. Israel’s *Tzeva Adom* early-warning radar system is a version of the more commonly used civil defense siren also known as an air-raid siren, or tornado siren. The sirens were initially designed to alert civilians about air raids in World War II. They were then adapted to warn of nuclear attack and destructive weather patterns such as tornadoes. The sound of an air-raid siren is distinguishable from that used by emergency vehicles by use of two simultaneous tones, with pitches in a 5:6 frequency ratio, an untampered minor third.

Militaries around the world all face a similar complication: how can they minimize civilian casualties, and focus their attacks on militants and military bases? Civilian casualties across the globe have decreased due to technological innovations in recent times. According to a report in *The Times of Israel*, in 2013, Iran’s defense minister Hossein Dehghan announced that Iranian missiles can now strike within two meters (approximately 2.9 yards) of their targets, compared to 200 meters (approximately 219 yards) previously. “The inaccuracy of (our) ballistic long-range missiles in hitting targets is so minimal that we can pinpoint targets. The accuracy of surface-to-surface missiles is now two meters, while at some stage in the past it was 200 meters. We strive to reach zero inaccuracy,” Dehghan said.

CNN recently released a report claiming that “civilian casualties have plummeted as a result of drone strikes” in response to a U.S. drone attacking and killing 19 suspected Taliban militants in Pakistan. The report highlights three years of data that The New America Foundation has collected about drone attacks. The New America Foundation collected data from reputable sources such as the *New York Times*, Reuters, and Pakistani media outlets such as the *Express Tribune* and *Dawn*. According to the data generated by averaging the high and low casualty estimates of militant and civilian deaths published in a wide range of outlets, the estimated civilian death rate from U.S. drone strikes in Pakistan has declined. In 2008, the civilian death rate was at its peak of almost 50%. When the data was published in 2012, for the first time ever, the estimated civilian death rate is close to zero.

As countries develop further and further, technology advances, allowing for military developments such as the Iron Dome, the Code Red early-warning radar system, the air-raid siren, and more accurate missiles and drones that all focus on keeping civilians safer, collectively benefiting society. As the years go by, significant progress is made in the field of technology, which as we’ve seen by looking at a few examples, will contribute to society by ensuring safety and defense among innocent civilians.

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