

Date of Hearing: April 23, 2024

ASSEMBLY COMMITTEE ON PRIVACY AND CONSUMER PROTECTION

Rebecca Bauer-Kahan, Chair

AB 2681 (Weber) – As Amended April 11, 2024

PROPOSED CONSENT

SUBJECT: Weapons: robotic devices

SYNOPSIS

Along with all of the other advances in technology in recent years, there has been a rapid proliferation of robotic devices and drones. As with all technology, as it advances it often becomes more affordable leading to more widespread use. There are a number of policy considerations related to the proliferation of these devices; this bill is addressing one of the most dangerous uses – the potential for the weaponization of robots and drones both by law enforcement and by individuals.

Specifically, this bill makes it illegal for a person to manufacture, modify, sell, transfer, or operate a robotic device or drone that has been equipped with a weapon in the state except in very limited circumstances when used by one of the following:

- 1. A defense industrial company working under contract with the U.S. Department of Defense.*
- 2. A developer whose sole purpose is developing or testing technology that is intended to detect, prevent, or disarm a weaponized device.*
- 3. The U.S. Department of Defense.*
- 4. A government official who, in carrying out their duties, uses a weaponized device to dispose of explosives or in cases where there is an imminent, deadly threat to human life.*

This bill is sponsored by robotics developer, Boston Dynamics, who, together with five other robotics companies issued an open letter warning of the dangers related to the weaponization of uncrewed drones and other robotic devices and calling on policy makers and others in the industry to halt the weaponization of “advanced-mobility general-purpose robots.”

This bill passed the Public Safety Committee on their consent calendar.

SUMMARY: Makes it unlawful for a person to manufacture, modify, sell, transfer, or operate a robotic device or uncrewed aircraft equipped or mounted with a weapon. Specifically, **this bill:**

- 1) Provides that a person who knowingly manufactures, modifies, sells, transfers, or operates a robotic device must pay a fine of between \$1,000 and \$5,000, in addition to any other penalty imposed by law.
- 2) Exempts from the prohibition on weaponized robotic devices:

- a) A defense industrial company with respect to robotic devices that are within the scope of its contract with the United States Department of Defense.
 - b) A robotic device developer, manufacturer, or producer who modifies or operates a robotic device equipped or mounted with a weapon for the sole purpose of developing or testing technology that is intended to detect, prevent, or mitigate the unauthorized weaponization of a robotic device.
 - c) The United States Department of Defense, and any of its departments, agencies, or units.
- 3) Provides that government officials, when acting in the public performance of their duties, are not prohibited from operating a weaponized robotic device or one equipped with disrupter technology when used to dispose of explosives or suspected explosives or for the destruction of property in cases where there is an imminent, deadly threat to human life.
 - 4) Defines “robotic device” as a mechanical device capable of locomotion, navigation, flight, or movement and that operates at a distance from its operator or supervisor based on commands or in response to sensor data, or a combination of those, including mobile robots, uncrewed ground vehicles and uncrewed aircraft.
 - 5) Defines “weapon” as a device designed to threaten or cause death, incapacitation, or physical injury to a person, including, but not limited to, stun guns, firearms, machine guns, chemical agents or irritants, kinetic impact projectiles, weaponized lasers, and explosive devices.
 - 6) Defines “defense industrial company” as a company that has a contract with the United States Department of Defense to design, manufacture, develop, modify, upgrade, or produce a robotic device, and includes any employees or agents authorized by that defense industrial company to engage in activities relating to such a contract on its behalf.

EXISTING LAW:

- 1) Defines the following terms:
 - a) “Unmanned aircraft” means an aircraft that is operated without the possibility of direct human intervention from within or on the aircraft. (Gov. Code § 853.5(a).)
 - b) “Unmanned aircraft system” means an unmanned aircraft and associated elements, including but not limited to, communication links and the components that control the uncrewed aircraft, which are required for the pilot in command to operate safely and efficiently in the national airspace system. (Gov. Code § 853.5(b).)
- 2) Defines “weaponized aircraft, vessels, or vehicles of any kind” as “military equipment” requiring the approval of a local governing body before law enforcement may seek, use, or acquire such equipment. (Gov. Code, §§ 7070 (c)(6) & 7071 (a)(1).)
- 3) Provides that a person who knowingly and intentionally operates an unmanned aircraft system on or above the grounds of a state prison, a jail, or a juvenile hall, camp, or ranch is guilty of an infraction, punishable by a fine of \$500. (Gov. Code, § 4577 (a).)
- 4) Makes it a misdemeanor to use an unmanned aircraft system to look through a hole or opening into the interior of specified areas in which the occupant has a reasonable

expectation of privacy with the intent to invade the privacy of a person inside. (Pen. Code, § 647 (j)(1).)

- 5) Provides that it is unlawful for any person to operate an unmanned aircraft system in pest control unless the pilot operating the unmanned aircraft system holds a valid manned pest control aircraft pilot's certificate or a valid unmanned pest control aircraft pilot's certificate issued by the director and is certified or otherwise authorized by the Federal Aviation Administration to operate an unmanned aircraft system approved by the Federal Aviation Administration to conduct pest control. (Food & Agr., § 11901 (b).)

FISCAL EFFECT: As currently in print, this bill is keyed fiscal.

COMMENTS:

1) **Purpose of this bill.** Along with all of the other advances in technology in recent years, there has been a rapid proliferation of robotic devices and uncrewed drones. As with all technology, as it advances it often becomes more affordable leading to more widespread use. There are a number of policy considerations related to the proliferation of these devices; this bill is addressing one of the most dangerous uses – the potential for the weaponization of robots and drones both by law enforcement and by individuals.

2) **Author's statement.** According to the author:

AB 2681 is a common-sense public safety measure placing guardrails around the use of weaponized robots. This measure will prohibit the manufacture, sale, and operation of robotic devices or drones that are equipped with a weapon. In the past several years, cheap robotics and drones have proliferated, as has the dangerous misuse and weaponization of these technologies. This is damaging and antithetical to the goals of many robotics companies focused on assistance and support of many industries. As robotics technology advances and the industry expands, the prohibitions in AB 2681 will protect the public and bring stability and predictability to this innovative emerging market in our state. It is time for California to lead the nation in protecting the safety of our communities.

3) **An Open Letter to the Robotics Industry.** The sponsors of this legislation, Boston Dynamics, along with five other robotics companies, published an open letter in October 2022 warning of the dangers related to the weaponization of uncrewed drones and other robotic devices. The letter was prompted by a number of YouTube videos showing men attaching firearms, flame throwers, grenades, and other deadly weapons to robots they had purchased.¹ The core of the letter states:

As with any new technology offering new capabilities, the emergence of advanced mobile robots offers the possibility of misuse. Untrustworthy people could use them to invade civil rights or to threaten, harm, or intimidate others. One area of particular concern is weaponization. We believe that adding weapons to robots that are remotely or autonomously operated, widely available to the public, and capable of navigating to previously inaccessible locations where people live and work, raises new risks of harm and serious ethical issues.

¹ Examples can be viewed here <https://www.youtube.com/watch?v=OrliFQ0qyAM> and here <https://www.youtube.com/watch?v=etjzk4w3xHs&t=290s>.

Weaponized applications of these newly-capable robots will also harm public trust in the technology in ways that damage the tremendous benefits they will bring to society. For these reasons, we do not support the weaponization of our advanced-mobility general-purpose robots. For those of us who have spoken on this issue in the past, and those engaging for the first time, we now feel renewed urgency in light of the increasing public concern in recent months caused by a small number of people who have visibly publicized their makeshift efforts to weaponize commercially available robots.

The letter closes with the companies pledging to “not weaponize our advanced-mobility general-purpose robots or the software we develop that enables advanced robotics and we will not support others to do so. When possible, we will carefully review our customers’ intended applications to avoid potential weaponization. We also pledge to explore the development of technological features that could mitigate or reduce these risks.”²

4) **Law enforcement use of robots and drones in California.** Law enforcement’s use of robotic technology is not new. In 2016, the Dallas police department used a robot armed with explosives to kill a sniper who was targeting police officers.³ More recently, the New York Police Departments deployed a “fully autonomous” security robot to patrol the Times Square subway station. Essentially, the technology was armed with four cameras and used for surveillance purposes, which alarmed privacy advocates who questioned whether or not the cameras were equipped with facial recognition technology. After six-months, the robot was removed from use and had proven largely ineffective.⁴ Other more traditional uses of robotic devices include using them to examine and detonate explosive devices, allowing police officers to remain at a safe distance.

Among the devices that have received the most attention in the last several years are robotic police dogs, like the one developed and sold by the sponsors of this bill. At one time, the Los Angeles Police Department decided to purchase one and raised \$280,000 through their foundation to fund the purchase. The Boston Dynamics robot, Spot, was hailed as an upgrade to the slower and less agile robots currently used by law enforcement. Spot can climb stairs, open doors, and transmit 360-degree live video. Critics raised the alarm over police departments acquiring ever more sophisticated technology including robotic devices, drones, and other automated devices because they pose a threat to people’s privacy and safety.⁵

As noted in the Public Safety Committee analysis of this bill, the San Francisco County Board of Supervisors approved a measure that would have allowed the San Francisco Police Department (SFPD) to deploy weaponized robots capable of killing people. The SFPD said “they had no plans to arm the robots with guns but wanted the ability to put explosives on them in

² Full letter available here <https://bostondynamics.com/news/general-purpose-robots-should-not-be-weaponized/>.

³ Sidner, Sara and Mallory Simon. “How robot, explosives took out Dallas sniper in unprecedented way,” *CNN* (Jul. 12, 2016) <https://www.cnn.com/2016/07/12/us/dallas-police-robot-c4-explosives/index.html>.

⁴ Rubenstein, Dana and Hurubie Meko. “Goodbye for Now to the Robot That (Sort Of) Patrolled New York’s Subway,” *The New York Times* (Feb. 2, 2024) <https://www.nytimes.com/2024/02/02/nyregion/nypd-subway-robot-retires.html>.

⁵ Jany, Libor and Gregory Yee. “See Spot spy? A new generation of police robots faces backlash,” *Los Angeles Times* (Dec. 21, 2022) <https://www.latimes.com/california/story/2022-12-21/lapd-testing-robot-dog-amid-debate-over-arming-police-robots>.

extraordinary circumstances.”⁶ The Oakland Police Department, as well, requested the authority to use robots armed with shotguns under certain circumstances, but abandoned the idea after public outcry.⁷

The question of whether law enforcement should be able to use robots or drones capable of deadly force has received increasing attention in recent years. Currently, law enforcement in California is allowed to use weaponized robots or drones, although they need to obtain permission to do so from their local governing body. This bill would allow law enforcement to operate a weaponized robotic device or one equipped with disrupter technology only when used to dispose of explosives or suspected explosives or for the destruction of property in cases where there is an imminent, deadly threat to human life. However, they would be prohibited from deploying a weaponized robotic device in all other circumstances.

5) **Analysis.** Explicitly outlawing the use of weaponized robotic devices and uncrewed drones is an important first step in regulating these devices as they become more affordable and easy to acquire, both by law enforcement agencies and consumers. However, larger public policy questions related to privacy and cybersecurity risks remain.

As Oakland Privacy clearly outlines in their support letter for this bill:

Drones also pose a threat to privacy and public safety, and carry significant cybersecurity and national security risk. In 2020, the U.S. Government Accountability Office (GAO) raised concerns about drone privacy, stating: “...[the problems of] protecting the physical privacy of individuals on the ground from surveillance by UAS, and protecting data that UAS collect about those individuals—stem from a combination of drones’ small size, their virtually universal use of cameras and other sensors, their ability to fly at ground level and hover in place, and their ability to be remotely piloted.”

Drones are made by various manufacturers with different software and communications capabilities. With potentially thousands of devices deployed, it will be challenging to ensure safe operations and interactions with people. In fact, the FAA has delayed their remote ID requirement - a basic regulation for safety and security - due to the difficulty with compliance.

Drones are proving themselves to be a nightmare for privacy and security. Drone maker DJI has more than 70 percent market share and such market concentration makes them even more of a security risk than the fact that DJI is a product of China with ties to the CCP. In fact, a security researcher was able to access highly sensitive customer data on DJI’s servers, including passport and driver’s license information, photos, and flight logs from military and government workers accounts. Furthermore, many federal agencies have found DJI to be a national security risk and have restricted their use. [Citations omitted.]

Allowing private individuals, businesses, and government entities to use robotic devices and uncrewed drones that are equipped with video cameras and, perhaps, facial recognition technology remains a significant risk to Californians’ right to privacy.

⁶ The Associated Press. *San Francisco supervisors bar police robots from using deadly force for now*, (Dec. 6, 2022) <https://www.npr.org/2022/12/06/1141129944/san-francisco-deadly-robots-police>.

⁷ Biddle, Sam. “Oakland Cops Hope to Arm Robots with Lethal Shotguns,” *The Intercept* (Oct. 17 2022) <https://theintercept.com/2022/10/17/police-robot-gun-oakland/>

While this bill this is an important public safety bill, the proliferation of robotic devices raises larger policy considerations related to the invasive nature of technology that would benefit from additional attention. With the proliferation of surveillance and tracking technology, including recreational drones equipped with cameras, in home and public surveillance cameras, automated license plate recognition tools, not to mention the ability to track someone using the smartphones that are virtually universal, at what point has surveillance gone too far? Should Californians simply accept the complete loss of privacy as people move through their lives in public and private spaces?

Much like the focus that is being placed on the impact of social media, advancement in artificial technology, and the collection and sale of personal information for profit, constant surveillance by private individuals, businesses, and government has a profound impact on Californians' lives. Rather than considering the risks of one device or technological advancement at a time, at some point, it might behoove the Legislature, and this Committee in particular, to explore the larger surveillance policy questions, including the dangers associated with the unchecked proliferation of surveillance tools and their impact on Californians' privacy rights, especially for those who are at risk of abuse.

6) **Related legislation.** AB 2014 (S. Nguyen, 2024) would allow law enforcement agencies to receive military surplus uncrewed drones for surveillance purposes, without first seeking the approval of their local governing body. That bill is awaiting hearing in the Public Safety Committee.

AB 79 (Weber, 2023) would have provided that knowingly manufacturing, modifying, selling, transferring, or operating a weaponized drone or robot is punishable by a fine of between \$1,000 and \$5,000 dollars. The hearing on AB 79 was canceled at the request of the author.

AB 740 (Gabriel and Petrie-Norris, 2023) would have required the California Department of Technology to issue regulations establishing cybersecurity and privacy requirements for data collected by drones operated by state and local government entities. That bill passed this Committee and died in the Accountability and Administrative Review Committee without a hearing.

AB 48 (Gonzalez, Chap. 404, Stats. 2021), prohibits the use of kinetic energy projectiles or chemical agents, as defined, by any law enforcement agency to disperse any assembly, protest, or demonstration, except in compliance with specified standards.

AB 392 (S. Weber, Chap. 170, Stats. 2019), limits the use of deadly force by a peace officer to those situations where it is necessary to defend against a threat of imminent serious bodily injury or death to the officer or to another person.

SB 807 (Gains, Chap. 834, Stats. 2016), granted civil immunity to local public entities, public employees, and unpaid volunteers and private entities acting within the scope of delegated authority granted by a local public entity that damage an unmanned aircraft system (UAS) in the course of providing emergency services.

ARGUMENTS IN SUPPORT:

Writing in support, the Association of Uncrewed Vehicle Systems International argues:

When we envision large scale commercial and civil adoption of drones and robots, weapons are not a part of that picture outside of a limited scope of companies, users, and use cases. We and our members regularly work with the Department of Defense and our service members to provide them with specialized technologies to keep them and others safe. Given this experience, we uniquely understand the varying needs these technologies serve, as well as the need to appropriately establish guard rails and guidelines for their responsible use. By working together as a group, California can pave the way towards safe adoption of these lifesaving technologies to protect citizens and structures in the State.

REGISTERED SUPPORT / OPPOSITION:**Support**

Boston Dynamics, INC. (sponsor)
Association for Uncrewed Vehicle Systems International
Dronedeploy
Oakland Privacy
Silicon Valley Robotics

Opposition

None on file.

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