



PROLIFERATION OF GHOST GUNS IN CALIFORNIA

by Chad McElroy '26

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Since the founding of our nation, Americans have maintained and exercised their right to bear arms in various forms. Before Remington began large-scale manufacturing in 1816 and Smith & Wesson in 1852, Americans privately manufactured their own rifles, pistols, and other weapons, and despite the rise of the civilian firearms market, some Americans continue to do so. Today, some of these weapons are commonly referred to as “ghost guns.”

What makes a “ghost gun” different from a traditional firearm? A ghost gun, as defined by the United States Department of Justice, is a privately made firearm (PMF) that is not marked with a federally approved serial number. These guns can legally be made from scratch, from individually manufactured parts intended to be made into firearms, or from cannibalized operational firearms parts assembled into a complete firearm. Ghost guns are uniquely categorized because they lack a serial number that traditionally would be engraved into the weapon by its manufacturer.

Ghost guns come in many shapes and forms, but the most common fall into two general categories: 3D-printed guns and “80% lowers.” The Regional Gun Violence Consortium defines 3D-printed firearms as guns that have been assembled primarily from 3D printed parts

acquired through commercially available files. Research by Conor O’Shaughnessy discusses an example called “The Liberator,” a single shot .38 caliber pistol created in 2012 and the first 3D-printed pistol to be widely distributed across the Internet. In contrast, “80% lowers” utilize a commercially sold, unfinished frame or receiver that is modified until completion by the user, and then assembled into a completed pistol or rifle using other assorted parts. Often, these parts are sold in kits containing other essential firearm components in addition to the tools needed to construct the complete pistol or rifle.

These kits produce the most common variation of ghost guns. The Los Angeles Police Department reported that in 2021 over 90% of all ghost guns it recovered were assembled from premade kits. Some companies go a step further. For example, Defense Distributed sells the “Ghost Gunner 3” Computerized Numerical Control (CNC) milling machine that is capable of printing 80% complete rifle lower frames at home, negating the need for external and potentially regulatable purchases.

The Gun Control Act of 1968 (GCA) requires that anyone manufacturing, importing, or dealing firearms obtain a Federal Firearms License (FFL) from the United

States Department of Justice. One of the goals of this policy is to curtail the trade of unserialized firearms. Federal law stipulates that FFL dealers must maintain records of every firearm they import or sell, identifying each firearm through its official serialization. The GCA also requires all firearms traded within the United States to have a federally recognized serial number in correspondence to a manufacturer or licensed dealer. However, with the rise of commercially viable means of privately constructing firearms, the line between what legally constitutes a firearm and what is simply a firearm component is blurred.

The definition of a firearm in the GCA and subsequent federal law is “any weapon (including a starter gun) which will or is designed to or may readily be converted to expel a projectile by the action of an explosive.” Included within this definition of firearm is “the frame or receiver of any such weapon.” A “frame or receiver” is not explicitly defined within the GCA, however, leaving open the door for a market of unregulatable partially complete firearms parts.

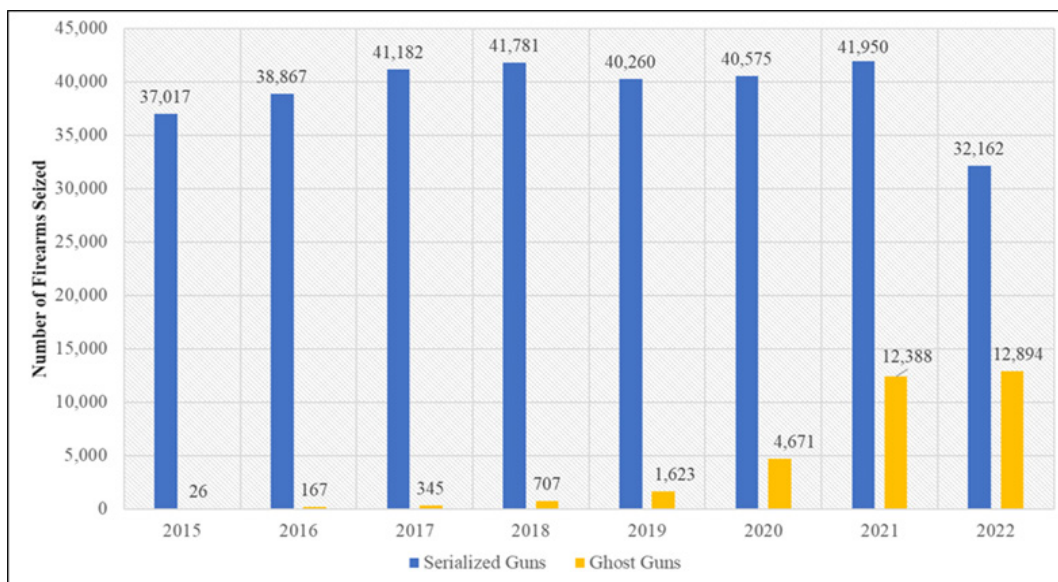
Recently, the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF) published Final Ruling 2021-05F to define what constitutes a firearm frame or receiver, with the goal of clarifying what may be considered a regulated firearm. The definition specifies these parts as anything that encloses the weapon’s applicable firing mechanism. Additionally, the definition of “frame” or “receiver” includes a partially complete frame or receiver, commercially available part kits, and frames or receivers that are designed to or may readily be completed or otherwise converted to function as a frame or receiver. This expands the definition to include “80%” part kits that contain (1) the frame or receiver and (2) the parts needed to complete them. However, the new ATF rule does not define the manufacturing

level to which a frame or receiver is completed, allowing for incomplete yet easily modifiable firearm parts to continue to be sold without serialization. For example, Polymer80 is a Nevada-based online firearm part kit distributor that sells incomplete rifle lowers. In accordance with the law, these lowers do not contain a part “jig” to guide how to complete the part, but do include accessories such as a bolt-catch pin. These elements can be assembled with other commercially available parts into a working rifle. Notably, the Polymer80 webpage notes that the company will not ship AR receivers to the District of Columbia and fourteen states, including California.

California was one of the first states to take action against ghost guns and privately made firearms. In 2016, Governor Jerry Brown signed Assembly Bill 857, which requires anyone assembling or selling privately made firearms to apply for a federally identifiable serial number. This rule went into effect in January 2018. The law also prohibits ownership or sale of an unserialized firearm after January 2019. AB 857 includes the frame or receiver of any firearm under the term ‘firearm,’ yet like the GCA, the law does not clarify the definition of a frame or receiver.

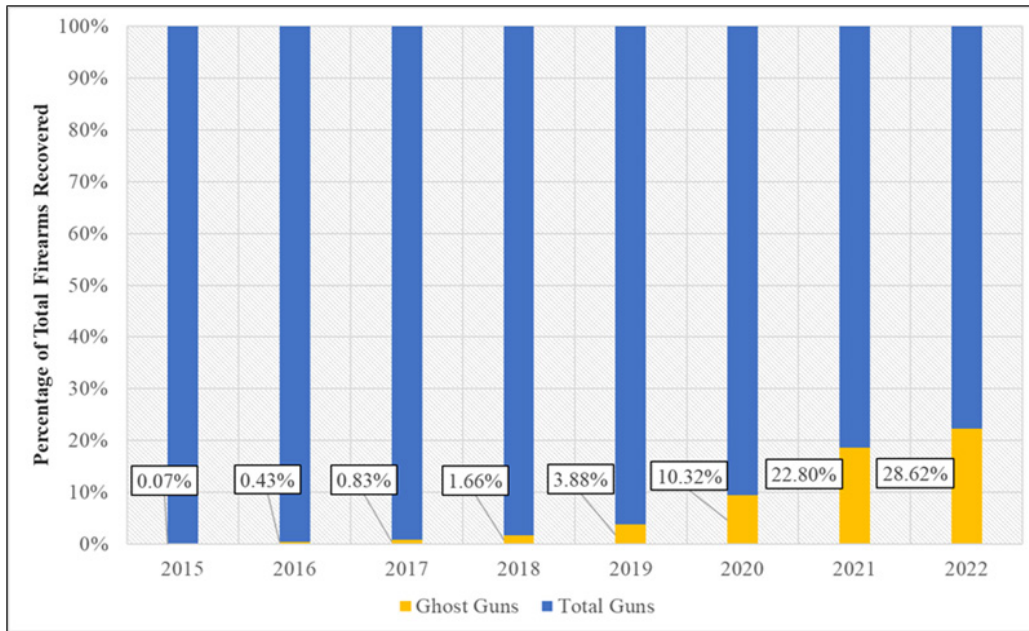
In June 2022, Governor Gavin Newsom signed into law Assembly Bill 1621, which requires that the components often used in privately manufactured firearms receive a serial number by January of 2024. In an effort to close the loophole created by the ambiguous definitions of firearm frames and receivers, the law expanded the term ‘firearm precursor part’ to include “any forging, casting, printing, extrusion, machined body or similar article that has reached a stage in manufacture where it may readily be completed, assembled or converted to be used as the frame or receiver of a functional firearm, or that is marketed or sold to the

Ghost Guns Seized vs Serialized Firearms in California



Source: “Armed and Prohibited Persons System Report 2022,” California Department of Justice, April 3, 2022; “Firearms Trace Data: California -2021,” Bureau of Alcohol, Tobacco, Firearms, and Explosives, September 15, 2022.

Ghost Guns as a Portion of Total Firearms Seized in California



Sources: "Armed and Prohibited Persons System Report 2022," California Department of Justice; "Firearms Trace Data: California-2021," Bureau of Alcohol, Tobacco, Firearms, and Explosives; "Crime Guns in California," California Department of Justice.

public to become or be used as the frame or receiver of a functional firearm once completed, assembled or converted."

Other California laws also have sought to regulate the manufacturing and sale of ghost guns. Senate Bill 1327 (2022) prohibited the sale of any unserialized, unfinished frame or receiver if federal law requires that it be serialized, even if it is not defined as a firearm under federal law. AB 2156 (2022) tightened firearm regulations in three ways, requiring that anyone seeking to manufacture a firearm or precursor part must hold a firearm manufacturing license from both the state and the federal government, that anyone manufacturing a firearm or precursor via a 3D printer must be licensed by the state, and that a citizen may only produce up to three firearms for personal use before needing to obtain a state license. Most recently, in September 2023, Governor Newsom signed a new bill taking aim at ghost guns. AB 1089 requires anyone using a 3D printer or CNC milling machine to manufacture firearms to be state licensed (eliminating the three-gun allowance) and adds these devices to the legal definition of firearm related products. Additionally, AB1089 prohibits the sale of 3D printers and CNC machines specifically designed to manufacture firearms, while also establishing civil liability on the part of ghost gun-related instruction distributors, should a firearm produced with those instructions cause personal injury or property damage.

Ghost gun legislation in other states and on the federal level is evolving. Everytown Research has noted that as of 2023, ghost guns are regulated in 13 states: California, Oregon, Washington, Nevada, Hawaii, Colorado, Illinois, Maryland, New Jersey, New York, Delaware, Connecticut,

and Rhode Island. In late June, a U.S. District Court judge in Fort Worth, Texas struck down the 2021 ATF updated rule on privately made firearms, holding that the agency had exceeded its jurisdictional authority. However, two months later the Supreme Court temporarily reinstated the ATF regulation by a 5-4 vote, allowing the law to stay in effect as the federal government appeals the lower court ruling.

Meanwhile, some municipalities have taken action to limit the sale and proliferation of ghost guns. Most recently, the City of Los Angeles won a \$5 million settlement with ghost gun manufacturer Polymer80, forcing the company to conform to both state and federal ghost gun regulations. As reported by the Los Angeles Times, Polymer80 is now prohibited from selling in California firearm parts kits that lack federal serialization, as required by AB 857, and must additionally perform background checks as part of standard purchases.

Ghost guns are increasingly becoming an issue for federal law enforcement. Research by Garen Wintemute suggests that criminals can take advantage of the ease of manufacturing and the unserialized condition of ghost guns to trade and use firearms without the knowledge of federal authorities. The unserialized nature of ghost guns makes it extremely difficult, if not impossible, to trace them to their producers. A congressional letter sent to the Department of Justice revealed that between January 1, 2016, and March 4, 2021, the ATF attempted to trace almost 23,946 recovered ghost guns, but could only complete 151 traces, a success rate of 0.63%. This contrasts with the 456,571 serialized firearms recovered by the ATF in 2021, with 361,587 being traced back to states and vendors – roughly an 80% success rate.

In California, criminals are more frequently using ghost guns. In June 2020, a member of the ‘Boogaloo Boys’ gang used a privately made, suppressed, and fully automatic ghost gun to kill one Oakland police officer and wound another. In February 2023, the *Los Angeles Times* reported that a convicted felon used a privately manufactured semi-automatic rifle to kill a Selma Police Department Officer in Fresno. Ghost gun confiscations are on the rise throughout the state, as the San Francisco Police Department noted that in 2021 44% of firearms recovered in homicide investigations were ghost guns. Research by Garen Wintemute found that in that same year, 30% of all firearms the ATF recovered in California trafficking investigations were unserialized. Most notably, the California Department of Justice recently published the 2023 Crime Guns in California Survey, which reported that privately made firearms accounted for 9.55% of all guns used in crimes.

Statewide Analysis

Ghost guns are being seized at increasing rates, especially in comparison to traditional firearms. As noted in Figure 1, until 2019, only 1,245 ghost guns were seized throughout the state. However, since 2019, authorities have seized 31,576 such firearms, a 2,436% increase. Ghost guns are also becoming more common among the total number of firearms seized within the state. As shown in Figure 2, the 167 ghost guns seized across the state in 2016 accounted for less than 1% of total guns seized. However, in 2020, that percentage jumped to nearly 10%, and in 2022, ghost guns accounted for roughly 28% of the total guns recovered in California.

AB 857 required that firearm owners seeking to own or build their own guns apply for a serial number via Unique Serial Number Application (USNA). Data compiled by the California Department of Justice shows that while

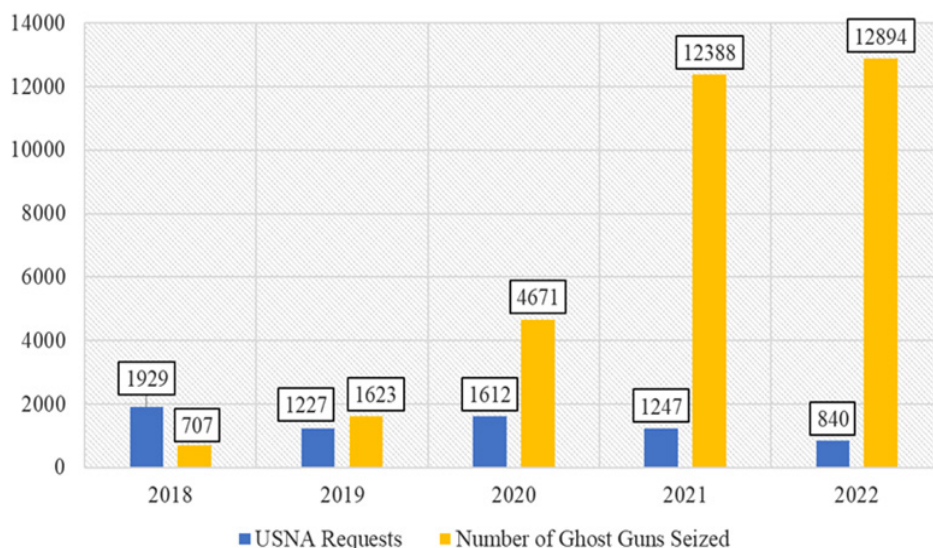
the number of USNA applications remained roughly steady from 2018 to 2021, the total number of ghost guns seized within the state of California rose dramatically during that period. As indicated in Figure 3, 1,929 USNAs were requested in 2018, and 707 ghost guns were recovered. However, by 2020, only 1,612 serial number applications were submitted, but authorities recovered 4,671 ghost guns state-wide. In 2022, the difference between the two numbers became stark, with only 840 applications filed, compared to 12,894 ghost guns recovered. The number of USNAs has not kept pace with the number of ghost guns being found within the state, suggesting that people are illegally manufacturing and owning ghost guns at an increasingly high rate.

Local-Level Analysis

Since 2020, the Los Angeles Police Department has recovered large numbers of ghost guns, and these weapons have become a greater share of all firearms recovered. The LAPD reported that it seized 813 ghost guns in 2020; in 2021, the number rose to 1,921 guns—an increase of 136%—before dipping in 2022 to 1,706. In 2020, ghost guns represented 13% of total guns seized by the LAPD, while in 2022 they were nearly 23% of all firearms recovered. These figures suggest that ghost guns are being used or possessed illegally with increasing frequency in Los Angeles.

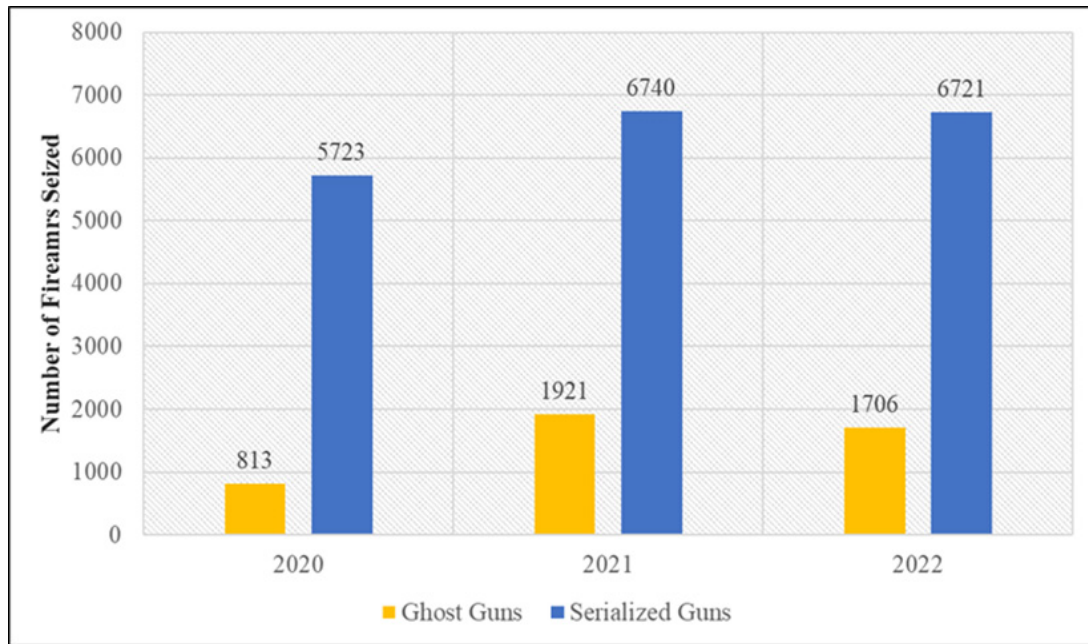
San Francisco is seeing a similar trend. From 2016 to 2018 authorities in that city seized only 73 ghost guns. In the following three years (2019-2021), however, the San Francisco Police Department seized a total of 551 ghost guns. As shown in Figure 5, ghost guns accounted for only 4% of total guns recovered in San Francisco in 2018, but that percentage rose to 16% in 2020 and to 21% in 2021. As in Los Angeles, the number of ghost guns seized in San

USNA Requests vs Ghost Gun Seizures in California



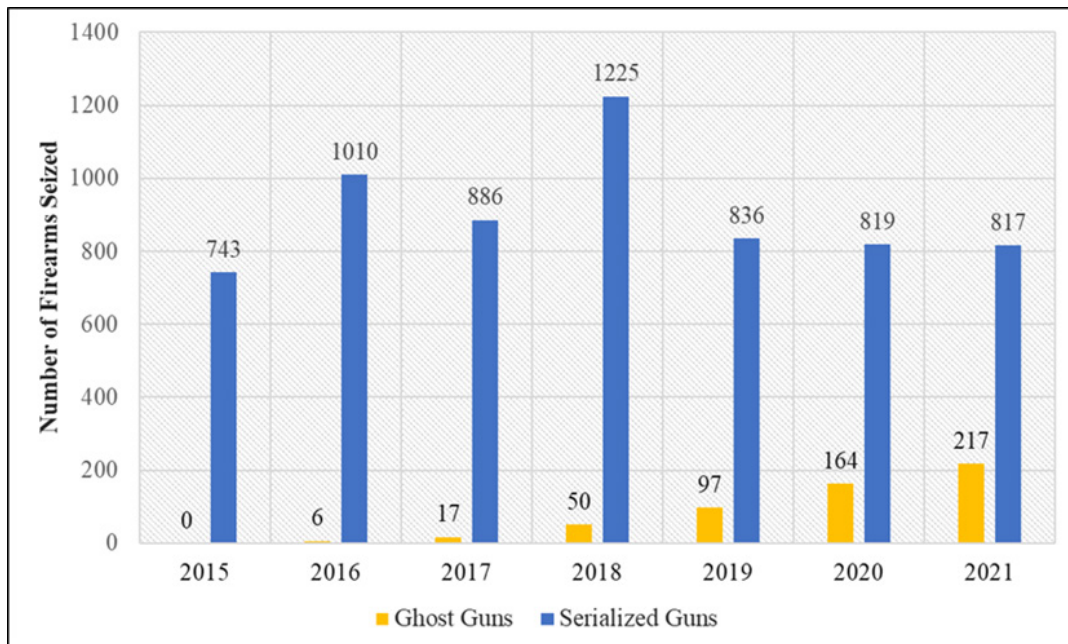
Source: “Armed and Prohibited Persons System Report 2022,” California Department of Justice.

Ghost Guns vs Serialized Firearms, Los Angeles



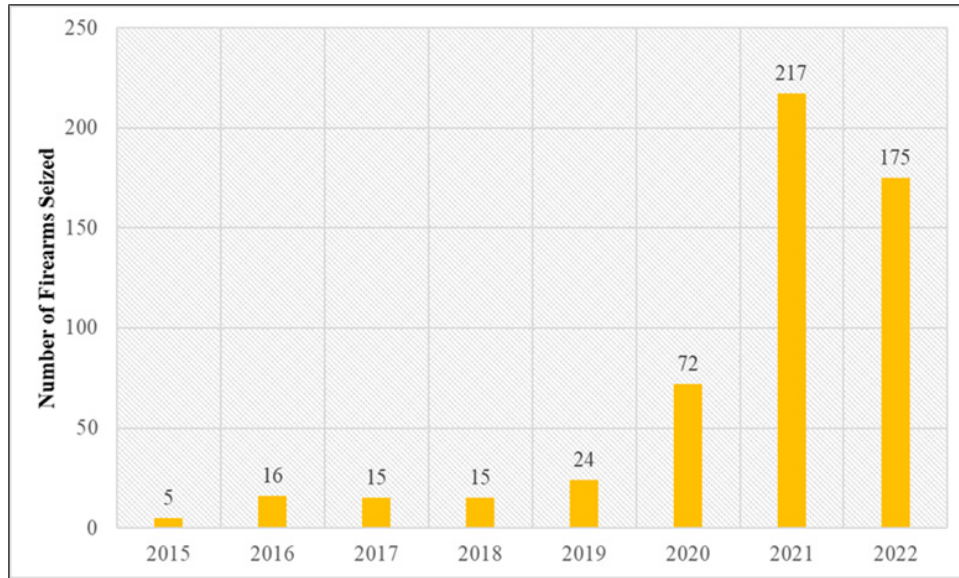
Source: "Homicide Report 2022," Los Angeles Police Department, March 23, 2023

Ghost Guns vs Serialized Firearms, San Francisco



Source: "Oakland, S.F. see spike in untraceable ghost guns: 'Anybody can get these,'" Megan Cassidy, *San Francisco Chronicle*, April 30, 2021; "High number of firearm recoveries underscores America's worsening gun violence epidemic," Priya Krishnakumar, CNN, January 20, 2022.

Ghost Guns Seized in Orange County



Source: Orange County Sheriff's Department, public records request by Chad McElroy, received November 21, 2022.

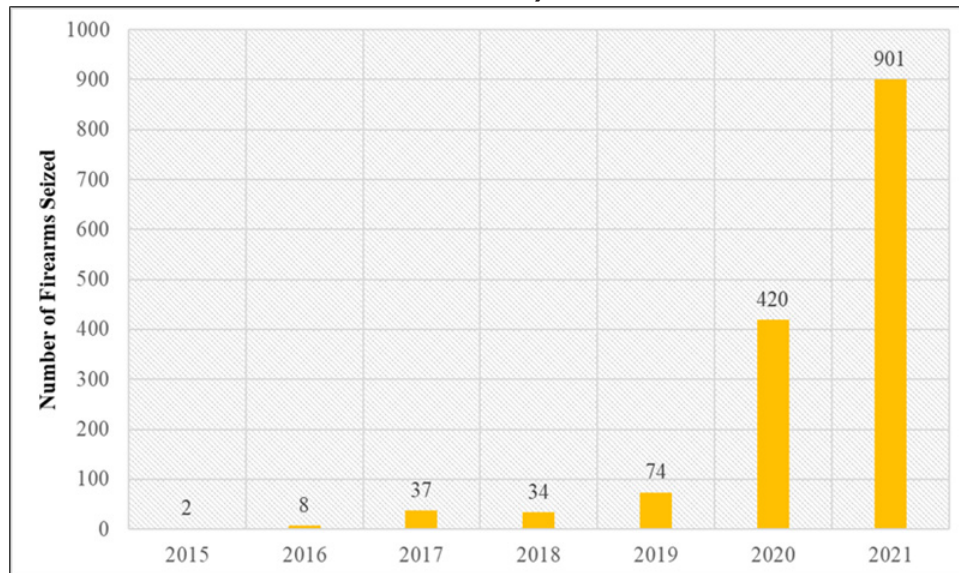
Francisco has risen dramatically. These sharp increases coincide with the criminalization of unserialized firearms by AB 857, which went into effect in 2019.

The Orange County Sheriff's Department has also reported a noticeable increase in ghost gun seizures after the implementation of AB 857. Between 2015 and 2018, the department seized only 51 ghost guns. Between 2019 and 2022, however, the department confiscated 488, with noticeable increases of 200% between 2019 and 2020, and 201% from 2020 to 2021. In 2022, the number of ghost guns seized by Orange County fell to 175, a decrease of about 20% from the peak in 2021.

Ghost gun seizures have spiked in San Bernardino County, as well, following the implementation of AB 857. From 2015 to 2018, only 81 ghost guns were recovered in San Bernardino. The number of recoveries rose sharply each year since then with 74 seized in 2019, 420 in 2020, and 901 in 2021, resulting in a notable increase of 468% between 2019 and 2020 and an increase of 115% the following year. Ghost gun proliferation in San Bernardino appears to follow the trends observed in other California jurisdictions.

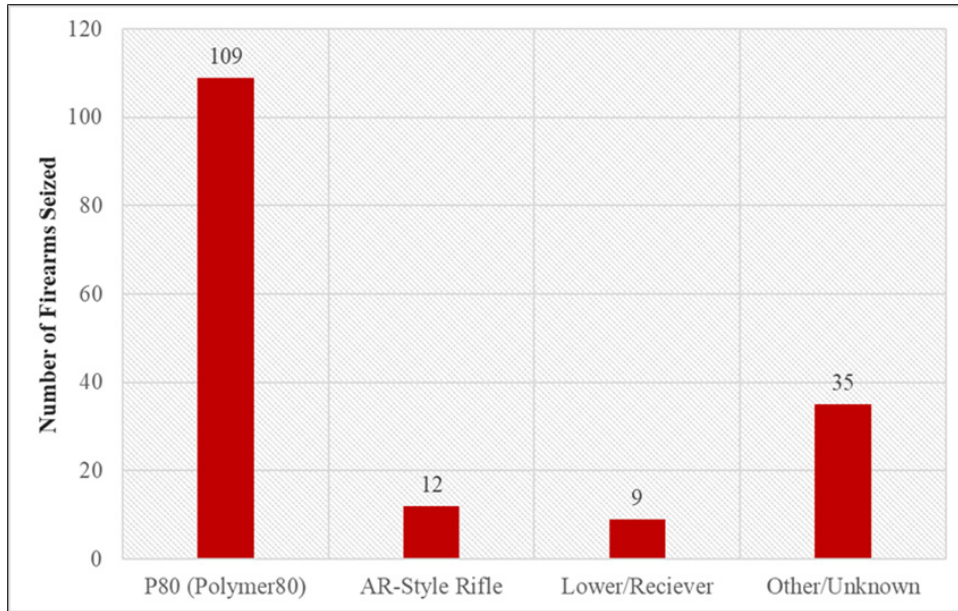
Finally, statistics provided by the Riverside Sheriff's Department tell a similar story. While the department seized only six ghost guns prior to 2020, between 2020

Ghost Guns Seized in San Bernardino County



Source: San Bernardino County Sheriff's Department, public records request by Chad McElroy, received December 13, 2022.

Make/Model of Ghost Guns Seized by Riverside County between 2015 and 2022



Source: Riverside Sheriff's Department, public records request by Chad McElroy, received November 29, 2022.

and 2021 it recovered more than 92 ghost guns, and in 2022 it seized 105. Interestingly, the data provided by Riverside County also recorded the make and model of the firearms seized by authorities. One hundred and nine of the 165 ghost guns the department seized were P80-style handguns, which equaled 66% of all ghost guns confiscated. P80s are sold online either in completed form or as separate parts assembled into the firearm by the company Polymer80. AR-style rifles accounted for only 7% of the ghost guns seized, and individual 80% lowers or receivers accounted for 5%.

The passage and implementation of California Assembly Bill 857 has not succeeded in preventing or slowing the proliferation of ghost guns in California. Applications for unique serial numbers as required by the law have decreased over time, while the numbers of ghost guns in the state continue to rise. The trend continues locally, with Los Angeles, Orange County, as well as San Francisco noting dramatic increases in ghost guns in the time since the law was passed. The Inland Empire is not spared from this trend, as data provided by San Bernardino and Riverside Counties demonstrate steadily increasing ghost gun seizures. It remains to be seen if new bills such as AB 1621, SB 1327, or AB 1089 will have an effect on ghost gun proliferation in the state. ♦

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