

# **Ghost Guns: Past, Present, and Future**



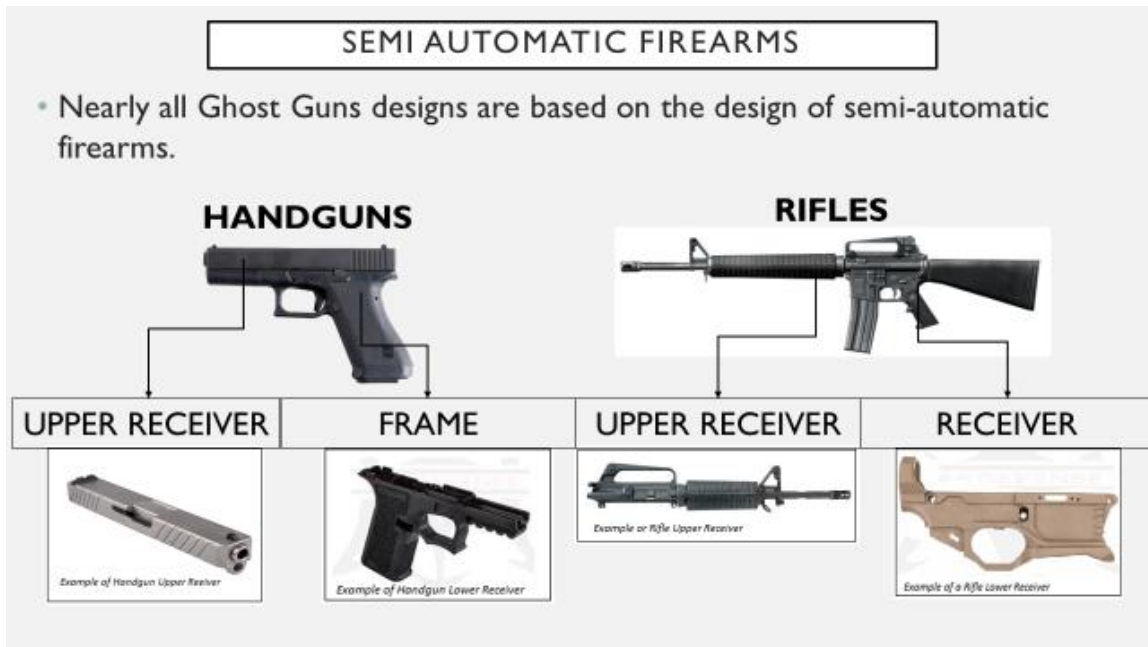
**NYPD Intelligence Division**

**Major Case Field Intelligence Team**

**Commanding Officer: Inspector Courtney Nilan**



Personally Made or Privately Manufactured Firearms, also known as *PMF's*, are firearm that are assembled by an individual. Federal law (1968 Gun Control Act) permits individuals to build these firearms for personal use only. The 1968 Gun Control act also designates the Lower Receiver known as the *Frame* for handguns and the *Receiver* for rifles as a firearm itself, and is the only part of a firearm that is regulated and requires serialization. The term *Frame or Receiver* refers to Lower Receivers in general when speaking about Ghost Guns or PMF's. Under new laws passed in New York State in 2021 that are now in effect, un-serialized PMF's are what are called *Ghost Guns*.



# Ghost Guns built with Unfinished Frame or Receivers

## US FEDERAL RULES

- The **Lower Receiver** is the part of a firearm which integrates and houses the internal action or fire control components.
- The Federal Government considers a Lower Receiver a firearm.
- A Lower Receiver **MUST** be serialized to be sold.
- If a Lower Receiver is *unfinished* it is **NOT** considered a firearm, and is not required to be serialized.



## UNFINISHED LOWER RECEIVER AND GHOST GUN DEFINITION

- An **Unfinished or 80% Lower Receiver** is an object that is nearly a Lower Receiver and does not yet require serialization per US Federal Law and ATF rules.
- A **Ghost Gun** is a firearm manufactured from a Lower Receiver that has not been serialized, or using a unique non-commercial design.
- Either path can be taken to manufacture a firearm without any identifying markings and no record of it.

\*All other parts of a firearm are unregulated

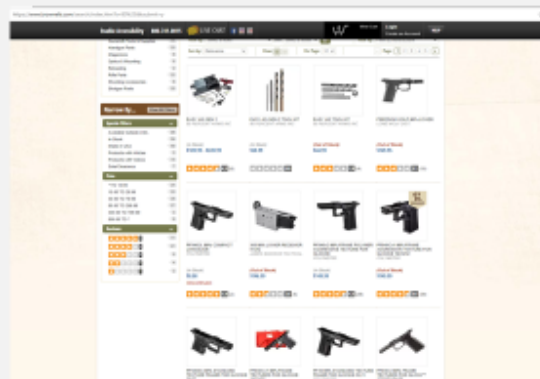
Unfinished Frames or Receivers along with all of the parts that one would need to complete them can be purchased in several ways.

1. From Online Firearm Part Retailers and secondary markets such as EBay or Gun Broker
2. In person at gun shows which are held in states with less strict gun laws
3. Through the traditional Iron Pipeline



### 80% LOWER RECEIVERS FOR SALE ONLINE

- These Online Firearm Parts Retailers sell 80 % Lower Receivers for handguns and rifles, along with a huge variety of other parts and accessories.
- Those parts and accessories can be combined with modified 80% Lower Receivers to complete Ghost Guns.



## Ghost Handguns built with Unfinished Frame or Receivers

### GHOST HANDGUN TYPES

- To date 80% Lower Receivers are commercially available for three handgun models.



GLOCK TYPE



SIG SAUER TYPES



1911/2011 TYPE

- Of the 436 Ghost Guns recovered by the NYPD in 2022, 361 were Glock model handguns (82.8%).

## Glock Type Ghost Handguns

### GLOCK TYPE GHOST GUN

There are 6 documented brands of commercially available 80% Glock Type Lower Receivers:

- The P80 is produced by [www.Polymer80.com](http://www.Polymer80.com)
- 93.7% of Glock type Ghost Handguns recovered in 2021 were manufactured with a P80 brand Lower Receiver



- The SS80 is produced by [www.Glockstore.com](http://www.Glockstore.com)



- The *Strike 80C* produced by [www.StrikeIndustries.com](http://www.StrikeIndustries.com)



- The *GST-9* produced by [www.80PecentArms.com](http://www.80PecentArms.com)



- The *Freedom Wolf* produced and sold by [www.LoneWolfDist.com](http://www.LoneWolfDist.com)



- The *Geisler* produced by [www.GeislerDefense.com](http://www.GeislerDefense.com)



Below are pictures of the packaging that each of the commercially available Frames are sold in.

### GLOCK TYPE GHOST GUN

- Packaging each of the Glock type 80% Lower Receivers currently comes in.



Commercially available Frame or Receivers are sometimes sold with assembly jigs.



Certain types of tools have become very popular amongst individuals who build Glock type Ghosts from Unfinished Frames.





## Sig Sauer Type Ghost Handguns

There are several models of Sig Sauer type handguns that Unfinished Frames are manufactured for.

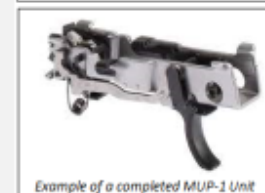
### SIG SAUER TYPE GHOST GUN

- The Sig Sauer P320 semi-automatic is a semi-automatic handgun.
- All of the internal mechanism for the Lower Receiver are in one removable unit. This unit is called the Fire Control Unit.
- Because of the design of the P320 only the Fire Control Unit requires serialization.
- There is a gap in the Lower Receiver that the serial number can be seen through.



### SIG SAUER TYPE GHOST GUN

- The Online Firearm Parts retailer JSDSupply.com now produces a metal frame in 80% form which can be converted into a Fire Control Unit.
- JSD Supply also sells all of the Lower Receiver parts required for a functional Fire Control Unit.
- JSD Supply markets and sells this frame as its Modular Universal Pistol Unit (MUP-1). This completed unit can function as a Fire Control Unit and create a Ghost Sig Sauer P320.



## SIG SAUER TYPE GHOST GUN

FCU Unit with a serial number

MUP-I without a serial number











## SIG SAUER TYPE GHOST GUN

- The retailer **MatrixPrecisionParts.com** sell metal Sig Sauer Model 80% Lower Receivers and jigs that can be used to modify them.

CART (0)

### 220, 226, AND 229 FRAMES, TOOLS, AND JIGS

 <b>226 80% FRAME</b> from \$295.00	 <b>229 80% FRAME WITH 226 MAGWELL</b> from \$295.00	 <b>229 80% FRAME</b> from \$290.00	 <b>228 80% FRAME</b> from \$290.00
 <b>MATRIX PRECISION RAIL CUTTER FOR 1911, 2011, SIG SAUER</b>	 <b>DRILL JIG FOR P220 FRAME</b> \$75.00	 <b>DRILL JIG FOR P226 OR P229 FRAMES</b> \$70.00	 <b>220 10MM DRILL FOR HAMMER STRUT</b> \$6.00

## 1911/2011 Type Ghost Handguns

### 1911/2011 TYPE GHOST GUN

- 1911 or 2011 type Ghost handgun is also built with an all metal 80% Lower Receivers.
- This Lower Receiver required more work to complete than the Glock type Ghost handgun.



1911 Type Handgun



2011 Type Handgun



## Ghost Rifles

Unfinished Receivers are sold for many types and models of rifles, which include but are not limited to:

- AR-15 (Intermediate rounds)
- AR-10 (Shoots a .308 and 6.5 Creedmoor rounds)
- AR-9 (Shoots a 9mm round)
- AK-47 (Shoots a 7.62x39mm cartridge)
- MAC Types (Mac 10 & Mac 11)

GHOST RIFLE MODELS

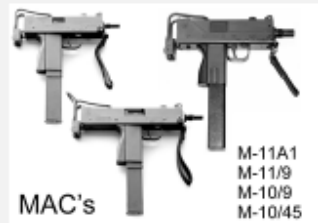
- To date 80% Lower Receivers are commercially available for several Rifle models. The most popular of which are:



AR TYPES



AK-47 TYPES



MAC TYPES

GHOST RIFLES



80% AR Rifle Receiver



80% AK-47 Rifle Receiver



80% MAC Rifle Receiver  
Blank and Weld Parts Kit

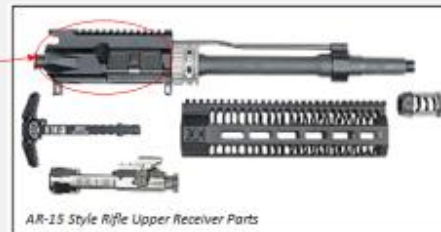
## GHOST RIFLES

- By far the most common rifles that 80% Lower Receivers are sold for are AR type rifles.
- Most are made of metal and have no brand name on them
- Metal 80% Lower Receivers require more work and different tools to be completed.
- Firearm retailers sell AR 80% Lower Receivers with and without an assembly jig and drill bits.



## GHOST RIFLES

- If not yet fully assembled, Police Officers may encounter the parts to assemble a Ghost Rifle in the course of their work.
- Below are pictures of those Rifle parts.



## LOWER RECEIVER MILLING MACHINE

- Additionally, there is an online based company (GhostGunner.net) which produces an automated milling machine known as the “Ghost Gunner.”
- This machine is designed to modify 80% Handgun or Rifle Lower Receivers to 100% condition.
- It has recently retailed for \$2500.



## Ghost Guns built with Privately Manufactured Frames or Receivers

### PRIVATELY MANUFACTURED LOWER RECEIVERS

- Lower Receivers can also be privately manufactured by individuals using the latest home 3D printing and CNC technology



# The Ghost Gunner and Zero Percent Lower Receivers

## CODY WILSON & DEFENSE DISTRIBUTED

### Cody Wilson's quest to make 3D printable guns available to everyone just came very close to reality



'This is a question about the future of information and the regulation of the internet'

CBC Radio - Posted: Aug 03, 2018 6:01 PM ET | Last Updated: August 9, 2018



## GHOST GUNS BUILT WITH 0% LOWER RECEIVERS

- An AR-15 can also be built with a Lower Receiver made from a *0% Lower Receiver*
- Companies JSD Supply, I776 Company, and White Wolf also now sell the Ghost Gunner-3

The screenshot shows the Ghost Gunner website. The main product featured is the 'AR-00: 0% RECEIVER', described as 'The world's first zero percent receiver, only available on Ghost Gunner 3'. Below this, there is a 'Purchase Your Zero Percent Receiver' section with five product cards:

- Buffer Tower Starter Kit**: \$200.00
- Zero Percent Buffer Tower Block**: \$110.00
- AR-15 Lower Receiver Block**: \$125.00
- Zero Percent Lower Build Kit**: \$85.00
- Zero Percent Starter Kit**: \$170.00

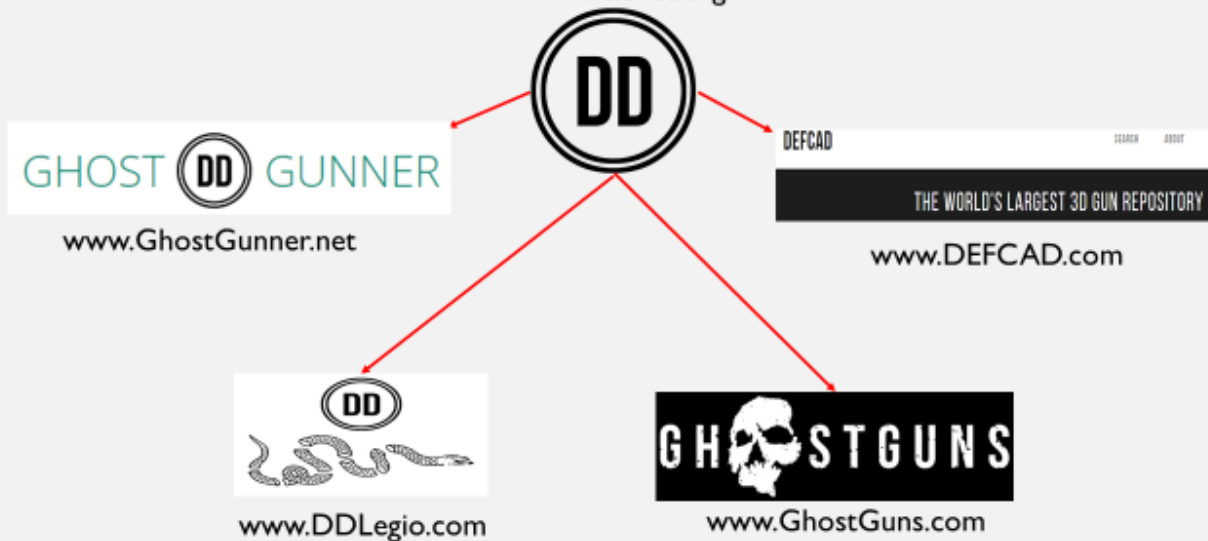
## THE ZERO PERCENT PISTOL

- Cody Wilsons Company has now developed a Zero Percent Block and Ghost Gunner coding that can mill out a Fire Control Unit that is compatible with a 3D Printed Glock Frame that his company has also designed a digital blueprint for

The screenshot shows the Ghost Gunner website interface. At the top, there is a phone number 800-880-8257, the logo 'GHOST GUNNER', and a price of \$0.00. A navigation menu includes Products, Dealers, Downloads, Help, Jobs, Media, and Log In. The main content area features the product title 'G0: ZERO PERCENT PISTOL' in red, followed by the subtitle '9mm G19-Style Metal 0% Handgun'. Below this is a short description: 'Stronger, more reliable and easier to build, the G0 is the best zero percent handgun available. Buy, mill and print yours today.' Two buttons are present: 'ORDER NOW' in red and 'LEARN MORE' in black. To the right is a 3D rendered image of the handgun's fire control unit.

## CODY WILSON & DEFENSE DISTRIBUTED

www.DefDist.org

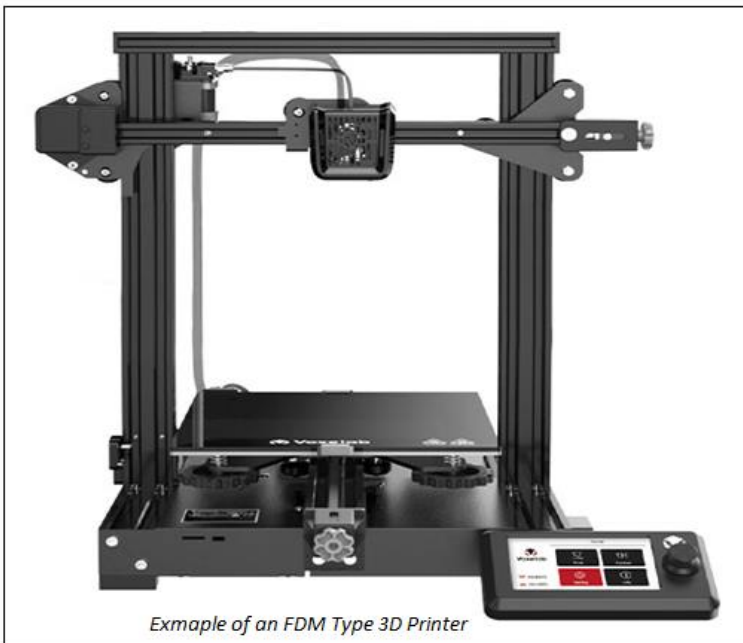




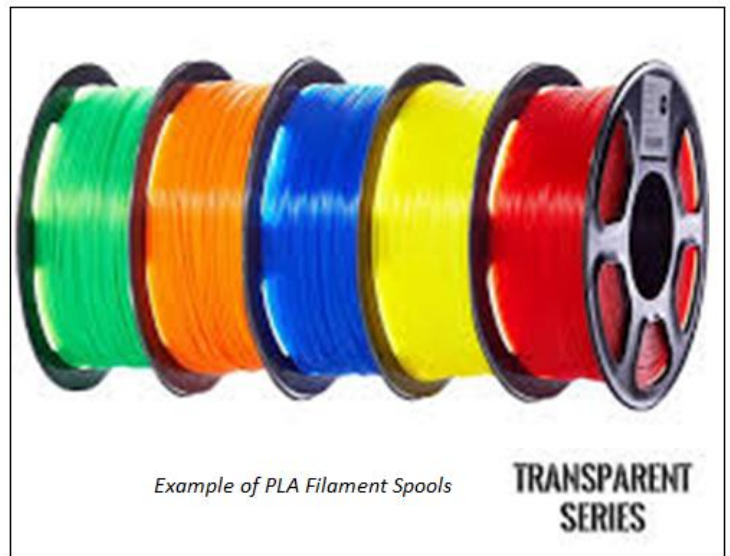
# 3D Printing and the manufacture of Lower Receivers used to build Ghost Guns

## 3D PRINTING

- **3D printing** is a manufacturing process that produces three dimensional physical objects from a digital model by laying and bonding thin layers of material in succession.
- There are different types of 3D printing such a SLA (Stereolithography) or FDM (Fused Deposition Modeling)
- Many models of FDM type 3D printers are now small enough, and simple enough to be operated at home.
- Some models retail for as little as \$200 and can be purchased on popular websites such as EBay, Amazon and Micro Center.
- FDM 3D printers can print objects from several types of material. The most popular is polymer-based material called Polylactic Acid (PLA) that comes in spools, and in a variety of colors.



Exmample of an FDM Type 3D Printer



Example of PLA Filament Spools

TRANSPARENT  
SERIES

## TYPES OF FILAMENT FOR 3D PRINTING

### **PLA/PLA+/PRO (Polylactic Acid)**

- Affordable (Pro/+ Versions Stronger)

### **ABS (Acrylonitrile Butadiene Styrene)**

- Affordable and commonly used in LEGOS

### **Polycarbonate**

- Strong and Heat Resistant Material

### **Nylon and Nylon Carbon Fiber**

- Tough, High heat, impact and abrasion resistant

### **PETG (Polyethylene Terephthalate Glycol modified)**

- Water resistant, strong, and slightly flexible

### **TPU (Thermoplastic Polyurethane Material)**

- Flexible Material

## BRANDS OF FDM 3D PRINTERS

CREALITY

**PRUSA**  
**RESEARCH**  
by JOSEF PRUSA

**ANYCUBIC**

**Bambu Lab**

**FLASHFORGE**

Just several of the many Companies that sell FDM type 3D Printers

A Chinese based company called **Creality** is by far the most popular in the Online 3D Gun Community

**They sell several cheap and easy to use models including:**

Ender 3

Ender 3 V2

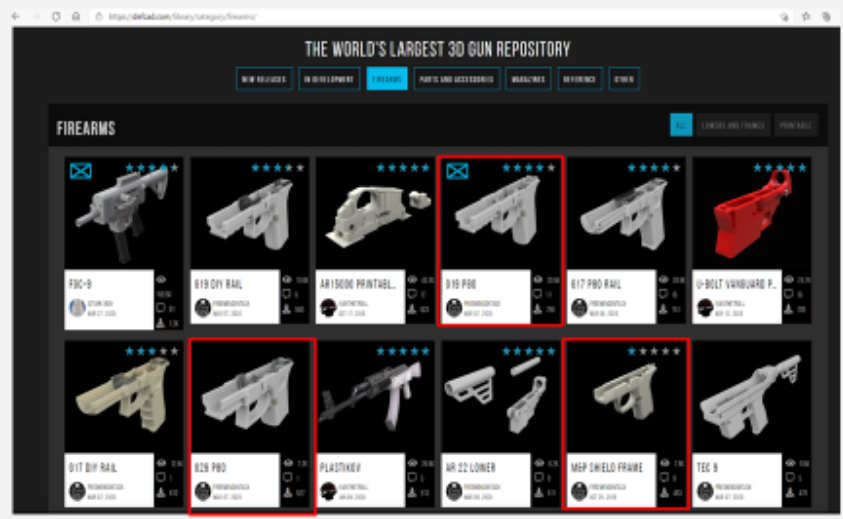
Ender 3 S1/S1 Pro

Ender 5

Ender 5 S1

## 3D PRINTED LOWER RECEIVERS AND GHOST GUNS

- There are numerous websites where the digital files needed to print a Lower Receiver or other gun parts are crowdsourced and shared.
- [DefCad.com](http://DefCad.com) is one such site.
- These blue prints are called STL files.

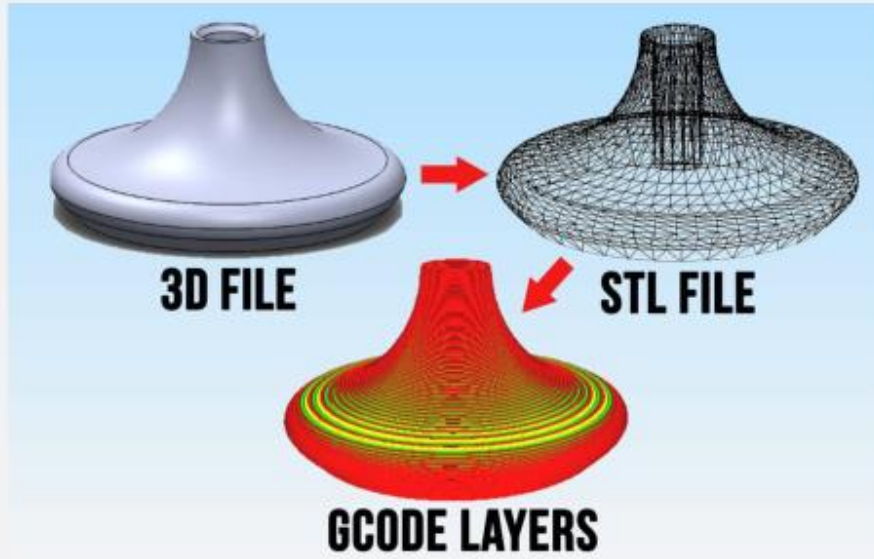


## STL FILES “3D DIGITAL BLUEPRINTS” FOR FIREARM PARTS AND ACCESSORIES

- STL stands for Standard Tessellation/Triangle Language
- The STL files (.stl file extension) are the most common format that firearm related 3D digital blueprints are available online



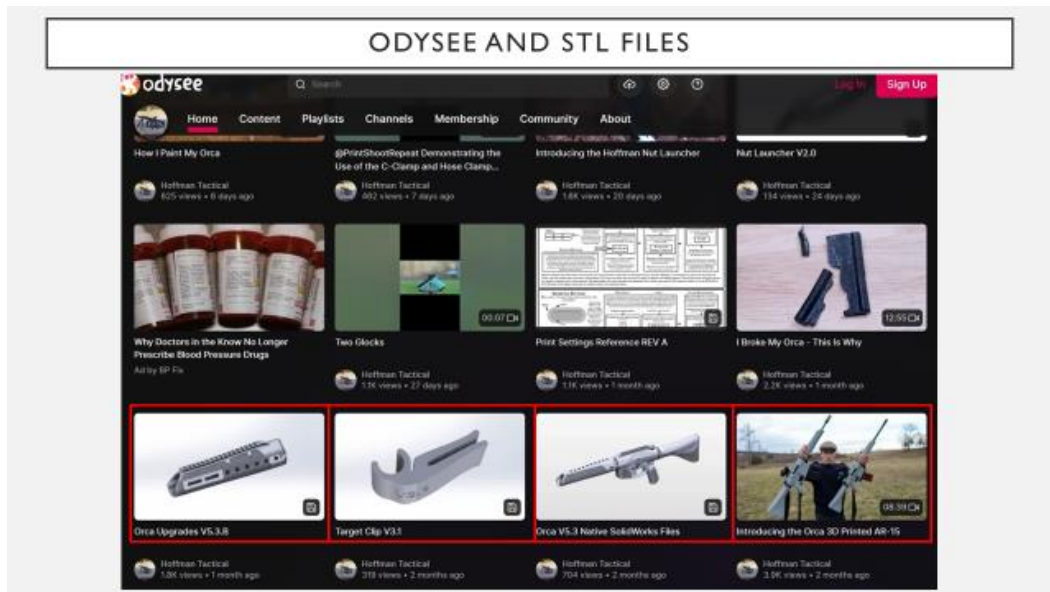
STL FILES "3D DIGITAL BLUEPRINTS" FOR FIREARM PARTS AND ACCESSORIES



POPULAR SLICING SOFTWARE



There are numerous video sharing websites such as YouTube, Odysee, Rumble, and Utreon that have become popular amongst Ghost Gun designed and builders, which host videos on how to design and construct firearms built from 3D printed Frames or Receivers. YouTube which is owned by Alphabet Inc., is beginning to become more restrictive in the types of videos related to this topic that it will allow to be posted on its website and app. Odysee is unique among these video sharing websites in that you can directly download files such as STL files directly from the websites. Odysee is built on the LBRY blockchain technology. The links for the files can sometimes appear next to the icons for a video about a model of firearm that can be constructed from those STL files.





## GHOST GUNS BUILT WITH 3D PRINTED LOWER RECEIVERS

- There are many Firearms that 3D printed Lower Receivers are now designed for and the number is steadily growing
- Like with commercial Ghost Guns the GlockType Handgun is the one most popular to produce with 3D printed Frames/Lower Receivers
- Two of the most popular models of Glock type 3D printed Frame/Lower Receiver:  
The FMDA (Free Men Don't Ask)  
The PY2A (Print Your 2A)



- The STL Files for the FMDA Frames will sometimes be noted as DD19.2 or DD(Glock Model).2
- The DD stands for Deterrence Dispensed



## GHOST GUNS BUILT WITH 3D PRINTED LOWER RECEIVERS

- Because of the Unique design of the of these Lower Receivers, the rail system required to fit them is different then for a P80 or other commercially available 80% Lower Receivers
- Versions of the FMDA rails are sold on eBay, and both designed are sold by numerous commercial companies including: (AvesRails.com, RipTideRails.com, PrintYour2A.com)



## GHOST GUNS BUILT WITH 3D PRINTED LOWER RECEIVERS

- Rail design for some of the popular 3D printed Lower Receivers vs the traditional Polymer80 design for most commercially available 80% Lower Receivers



**3 PIECE RAIL SYSTEM FOR POPULAR 3D PRINTED GLOCK TYPE LOWER RECEIVERS**  
**KEYWORDS: FMDA, PY2A, AVES, RIPTIDE, DIY RAILS**



**TRADITIONAL 2 PIECE POLYMER80 DESIGNED RAIL SYSTEM FOR COMMERCIAL 80% GLOCK TYPE LOWER RECEIVERS**

## GHOST GUNS BUILT WITH 3D PRINTED LOWER RECEIVERS



- Note: STL/G-Code files will also be needed to complete the printing of a 3D printed Lower Receiver or Privately Designed Firearm.



## Privately Designed and Manufactured Firearms

In addition to using 3D printing to construct Frames and Receivers for commercially designed models of firearms, individuals and groups have begun to design unique firearms that in some cases require parts from several different commercially available firearm models.

### PRIVATELY DESIGNED AND MANUFACTURED FIREARMS

- Below is a picture of the FGC-9, which is a personally designed and manufactured firearm.
- This is an example of a Ghost Gun that has been designed and manufactured largely from parts that can be made on a 3D Printer.



## PRIVATELY DESIGNED AND MANUFACTURED FIREARMS

- Below is an example of a 3D designed and printed firearm (FGC-9) which has been made to look like a Nerf brand toy gun.



## PRIVATELY DESIGNED AND MANUFACTURED FIREARMS

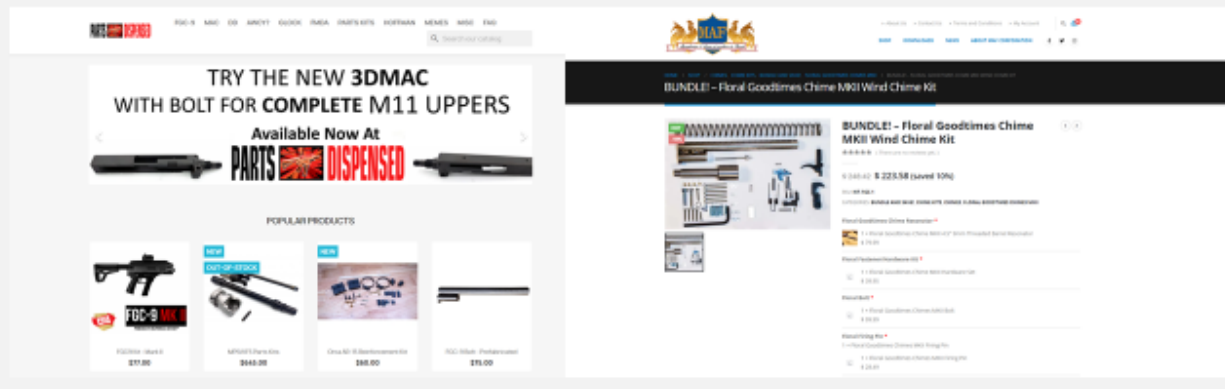


- This picture is an example of a completed Mac Daddy. It combines MAC-11, AR-15 parts, and uses a Glock magazine.

In addition to the firearm parts, these firearms can sometimes require unique sizes of screws, washers, nuts and other parts to construct a firearm based on one of these designs. There are webpages that have pieced together all of the firearm components and all of the unique non-firearm parts for many of these firearm designs and sell them as complete kits. None of those parts are regulated under federal law.

## PRIVATELY DESIGNED AND MANUFACTURED FIREARMS

- There are numerous Privately Designed Firearms which require unique combinat of parts from multiple firearm models, or in some cases parts that are unique to a particular privately designed firearm.
- A number of online retailers have begun to assemble all of these unique parts and sell them in one kit.

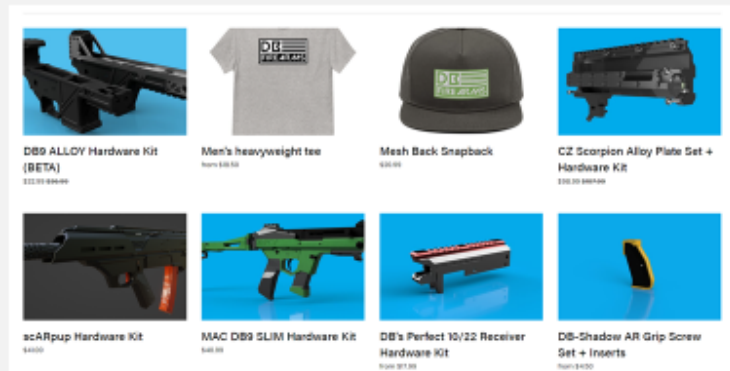


## PRIVATELY DESIGNED AND MANUFACTURED FIREARMS

- Some of those retailers are:
- [www.GhostGuns.com](http://www.GhostGuns.com)
- [www.Parts-Dispensed.com](http://www.Parts-Dispensed.com)
- [www.FGCKits.com](http://www.FGCKits.com)
- [www.1776SupplyCo.com](http://www.1776SupplyCo.com)
- [www.maf-arms.com](http://www.maf-arms.com)

## PRIVATELY DESIGNED AND MANUFACTURED FIREARMS

- There are numerous Privately Designed Firearms which require unique sizes and numbers of non firearm parts such as screws, nuts, springs and washers in order to complete the build of the firearm.
- A number of online retailers have begun to assemble all of these unique parts and sell them in one kit.



## PRIVATELY DESIGNED AND MANUFACTURED FIREARMS

- Some of those websites include:
- [www.DBDesignWorks.com](http://www.DBDesignWorks.com) AKA DB Firearms
- [www.Parts-Dispensed.com](http://www.Parts-Dispensed.com)
- [www.InvaderZip.com](http://www.InvaderZip.com)

## PRIVATELY DESIGNED AND MANUFACTURED FIREARMS



## Abe's killing haunts Japan with questions on homemade guns

By YURI KAGEYAMA July 10, 2022



## Other Firearm Parts and Accessories that can be Manufactured with 3D Printing

### 3D PRINTED MAGAZINES

- Firearm magazine, including High Capacity Magazines can also be 3D Printed.
- In addition to a 3-D printer, one would only need the proper spring.
- Firearm magazine springs can be found on multiple websites including Ebay.



## 3D PRINTED GLOCK COMPATIBLE SLIDE

- Members of the Online Design Group Deterrence Dispensed AKA The Gatalog ([www.TheGataLog.com](http://www.TheGataLog.com)) are now working on a design for a partially 3D printed Glock compatible slide.



Below is an example of a Glock type Ghost Handgun built with a Polymer80 Unfinished Frame that has had a 3D printed Glock Switch installed into it.

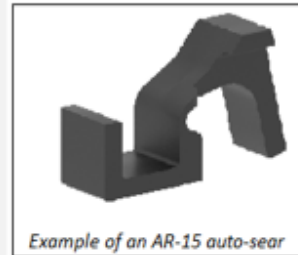


## IMPORT OF AUTO SEARS

- Several collaborative investigations have also shown that Glock compatible metal auto-sears (aka Glock Switches) are often shipped from Asia and marked as something other than an auto-sear
- Any local Law Enforcement Agency that is seeing an increase in Glock Switch recoveries should consider collaborating with their local CBP/HSI Office



*Glock Switch broken down into 3 pieces*



*Example of an AR-15 auto-sear*

## IMPORT OF SOLVENT TRAP SILENCERS

- It has become increasingly popular to convert fuel oil filters and gun solvent traps in silencers. By drilling a hole of the correct dimension or using a fuel filter thread adaptor these items can be converted into a fully functional firearm silencer.
- These items can be purchased online and are often shipped from overseas.



IDENTIFY HOW GHOST GUNS PARTS ARE BEING OBTAINED



ESTABLISH YOUR COLLABORATIVE INVESTIGATIVE TEAM

Local Law Enforcement Investigators



District Attorney's and Local Prosecutors



Outside Partner Agencies





## GHOST GUN INVESTIGATIONS IN THE FUTURE



- The Future of successful proactive Ghost Gun investigation developed in these ways will involve combining elements from both models
- This will include Postal Data gather from Online Firearm Parts Retailers who sell Parts Kits and Hardware Kits for Unique 3D Printed Firearm Designs
- This will also include data from sources such as Amazon, Micro Center, and data from traditional investigative methods into one data pool to identify potential targets
- This will also include obtaining data pertaining to sales from Financial Data/D-Orders/Email Search Warrants as some of these retailers are likely to be difficult

## POST ARREST INVESTIGATIVE WORK

- Post arrest work for a Ghost Gun investigation can be just as important as the work put in before the arrest
- The digital footprint generated by Ghost Gun targets leaves opportunities for follow up investigations
- This can include:

Analysis of records recovered during the warrant (**Evidence of Firearm Sales from the Data**)

Search Warrants for Electronic Devices and analysis of the data (**Analysts**)

The analysis is also important for successful prosecutions (**Parts purchases and 3D Files**)

Proffers to identify local Ghost Gun builders and seller(s)

Targeted interviews of persons arrested for possessing Ghost Guns to generate new leads (**Sometimes obtaining a Search Warrant for their phones or other devices**)

## GUN SHOW OPERATIONS

- Individuals can also attend Gun Shows in states with more lax laws and bring the parts back into states where they can be built and sold locally as street guns
- The NYPD and NY State Police have begun conducting operations at Gun Shows in adjoining state(s) in order to combat this issue as part of the Governors Ghost Gun Initiative



## GHOST GUNS AND CRYPTO CURRENCY

- In more recent investigations the Ghost Gun Team has begun to observe overlap between individuals who are building 3D Printed Ghost Guns and the utilization of Crypto Currency
- Some retailers including GhostGuns.com, JSDDSupply.com, and GhostGunner.net will now accept payment for various products in Bitcoin or other crypto currencies



## REPACKAGING COMPANIES (INCOMING)



Original Sender



Sent to Repackaging Company  
or Drop Box



Held by Repackaging Company  
for Pickup



Resent by Packaging Company  
to Recipient

## REPACKAGING COMPANIES (OUTGOING)



Original Sender



Sent to Repackaging Company



Sent Overseas

## AGENCY EDUCATION

- Many Police Officers, Investigators and Prosecutors do not know what a Ghost Gun is, how to properly identify one, and the applicable local charges
- Local Investigators may not recognize signs of a Ghost Gun manufacturer
- This can lead to arrest mischarging and good faith errors in court room testimony
- This can be largely rectified with a 1 hour in-service training, and handout reference materials



## TRACKING DATA

- Tracking Ghost Gun recoveries can help identify clusters in neighborhoods where there is a local builder (**take a more in depth look at shipping data in that area**)
- Police executives often require and demand firearm recovery data for a variety of reasons



## BE ON THE LOOKOUT

- Items to be on the lookout for during the execution of the warrants



Storage Locker Keys



## CONTACT INFORMATION

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