



## Amber ALERT

# 3D Printed Firearms

**23rd August 2023**

**Reference 0724**

This Amber Alert is issued by the United Kingdom's National Crime Agency (NCA). It is based on assessed intelligence and warns of dangers and threats from serious organised criminality. It is devised with the aim of bringing about preventative or remedial action.

We recommend you use this Alert to complement existing knowledge and support ongoing improvements to your business processes and procedures.

# 3D Printed Firearms

## Overview

This alert is intended to inform industry partners who form part of the printing community of the threat that can arise from 3D printed firearms and make them aware of the potential misuse of their services by individuals with a criminal intent. The information in the report has been extracted from open source, Law enforcement and National Ballistics Intelligence Service reports.

The alert covers:

- What is a 3D printed firearm?
- What are the issues with 3D printed firearms?
- Potential threat from criminal misuse of industry 3D printing in particular "prototype printing"
- What is the law in the UK around 3D printed firearms?
- How can the industry report concerns to the NCA?

## Information Report

### What is a 3D printed firearm?

A 3D printed firearm is manufactured wholly or in part using 3D printing technology, using detailed design specifications (CAD blueprints). Parts of the firearm can be printed on a range of printers costing from as little as £100 and when put together can form a fully functioning firearm.

The most common type of 3D printed firearm is hybrid, made up of mostly plastic parts that have been manufactured using the 3D printer (frame, trigger, hammer etc.) along with some metal components (barrel, firing pin, bolt etc.) These metal elements are either manufactured from readily available material or bought as ready-made components which in some cases are not regulated under UK legislation<sup>1</sup>. The 3D printed and metal parts are assembled to create the completed functioning firearm.

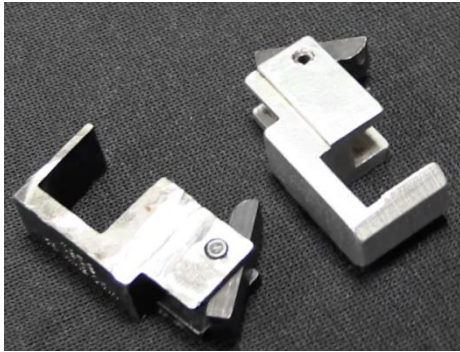
The viability of 3D printed firearms has improved significantly since their first appearance in 2013. Due to advancements in technology, these are now cheaper and easier to produce and appear to be both durable and reusable.

New designs and updates to existing designs are regularly posted and shared online within user forums. One of the most popular models of 3D printed firearm is the semi-automatic FGC-9.

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<sup>1</sup> <https://www.legislation.gov.uk/ukpga/1968/27/section/57/2013-04-01>

It is also possible to 3D print ancillary parts for modifying standard firearms, such as devices to convert a firearm to automatic fire (see below for images)



## **What are the issues with 3D printed firearms?**

Firearms possession is strictly controlled in the UK under the Firearms Act 1968<sup>2</sup>, with the vast majority of firearms being required by law to be held on a licence or certificate, with the application and ongoing management of the licence controlled by the police. This ensures safeguards and risk management processes are implemented which help to protect the public from the misuse of firearms.

As 3D printed firearms are firearms in UK legislation, their possession, trade and manufacture is illegal under the Firearms Act 1968 without appropriate licences. Only a registered firearms dealer can legally manufacture a firearm in the UK.

The NCA National Strategic Assessment 2023<sup>3</sup> states there has been an increase in the number of recovered homemade firearms with 3D printed components (such as hybrid firearms). This shows that individuals who hadn't previously considered manufacturing a 3D printed firearm may attempt to do so.

3D printed firearms are considered a threat to public safety due to;

- Being accessible to those who would not be permitted lawful possession of firearms in line with the licensing regime
- Being relatively cheap and easy to manufacture and acquire by those with criminal or extremist intentions
- Lack of traceability as not lawfully manufactured and registered (i.e. no serial numbers or audit trail)
- Lack of quality control and safety checks present in commercial manufacturing including proof testing to ensure the firearm is safe to use

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<sup>2</sup> <https://www.legislation.gov.uk/ukpga/1968/27/section/1>

<sup>3</sup> <https://www.nationalcrimeagency.gov.uk/nsa-firearms>

## “Prototype Printing”

Currently, most 3D printed firearms are created at home using readily available printers from manufacturers such as Creality, Prusa and AnyCubic. Many factors can impact on the quality of the print increasing the risk of an unsafe firearm when assembled. Individuals may seek an alternative by using the legitimate process of “Prototype printing”, by commissioning 3D printed parts, created on industrial printers, potentially using higher grade materials including metal alloys. There is potential for an individual with criminal intent to request high quality firearm component parts to be printed by companies offering this service. They could then construct the 3D printed firearm at home resulting in a more reliable and durable firearm.

High quality parts are vital to contain the pressure of an ammunition round being fired. The intended use of these parts aren't always obvious and so we want to raise awareness to the possibility of individuals using the prototype service in order to create component parts for 3D printed firearms.

For example, a tube printed in metal to exact specifications could be intended for use as a barrel.

There are a number of indicators a company can look out for which would highlight potential criminality, such as;

- Items that have a clear shape of a firearm
- Firearm component such as barrels
- A bullet cartridge or similar shaped projectile
- A reluctance to divulge the end purpose of the item or the reasons for production in high quality material

As an example, the FGC-9 requires some parts to be manufactured in metal (images below). As these parts are unlikely to be produced in a home workshop a prototype printing service may be utilised.



FGC-9 Buffer Tube Adapter  
- Aluminium



FGC-9 Ejector  
Aluminium



FGC-9 Mag Catch  
Aluminium



FGC-9 MK-II Feed  
Ramp - Aluminium

## **What is the law in the UK around 3D printed firearms?**

The manufacture, purchase, sale and possession of 3D printed firearms, ammunition or component parts is fully captured by the provisions in **Section 57(1) of the Firearms Act 1968**.

The expression "firearm" in the 1968 Act is defined as a lethal barrelled weapon of any description or component part of such weapon, from which any shot, bullet or other missile can be discharged.

3D printed firearms are potentially lethally barrelled weapons and must be viewed as such in law.

3D printed firearms are subject to strict control in the following respects:

- Under section 1 of the 1968 Act, it is an offence for an individual to possess, purchase or acquire any component part of a firearm without a certificate
- Under section 3 of the 1968 Act, it is an offence for a person to manufacture or possess for sale a component part of a firearm acting by way of trade or business
- Under section 5 of the 1968 Act, it is an offence for a person to possess, purchase, acquire, manufacture, sell, transfer, possess for sale or transfer a component part of a prohibited weapon without the authority of the Secretary of State for the Home Department.

## **How can the industry report concerns to the NCA?**

The NCA has a dedicated inbox for INTERKNOW, their project aimed at reducing the threat from 3D printed firearms, which can be contacted at [INTERKNOW@nca.gov.uk](mailto:INTERKNOW@nca.gov.uk).

**Please note that this mailbox is not manned 24/7 and so a response may not be immediate.**

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