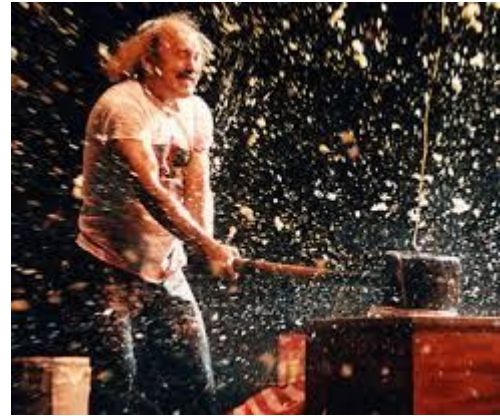




USB Gallagher

Nicholas Starke



Who was Gallagher?



whoami

Nicholas Starke - Penetration Tester at ^Lift Security

Nicholas Starke - Vulnerability/Advisory Coordinator at Node Security Project

Nicholas Starke - Security Researcher

Nicholas Starke - Twitter Celebrity (<https://twitter.com/nstarke>)

USB Kill - What is it?

- USB Thumb-drive like device
- Charges capacitors on USB Power
- Discharge capacitors on USB Data
- Happens multiple times a second



Technical Specifications

Killer Specifications:

Input voltage: 4.5 - 5.5 VDC

Output voltage: -215 VDC

Pulse Frequency: 8 - 12 times / second

Pulse current: $\geq 180\text{A}$

CE & FCC Approved, allowing you to test in **complete safety**.

Source: <https://www.usbkill.com/usb-killer/13-usb-killer-v3.html>

End Result

After plugging this device (A) into the USB port of another device (B), device (B) is no longer functional *in most cases*.

There is no documentation on what devices are vulnerable and which are not, other than:

<https://github.com/usbskill/community/wiki>

We're going to avoid this today



Pricing

“Anonymous” Edition:

54.95 Euros =~ \$60 USD

“Standard” Edition:

49.95 Euros =~ \$53 USD

Shipping:

5 Euros =~ \$7 USD



OR Build Your Own!

- <https://www.youtube.com/watch?v=82-MDymVkps>
- <https://www.youtube.com/watch?v=ux3SkJ6PMmA>
- <https://www.youtube.com/watch?v=YrzJvZmeWNU>



Use Cases

Marketing website (usbkill.com) claims this to be a “tool” for pen testers

What legitimate use cases exist within penetration testing for this device?



None

...



Disclaimer

The following two slides should not be construed as any sort of legal advice. If you have questions on the following two slides, consult an attorney!



What does Iowa Law Say?

716.3 CRIMINAL MISCHIEF IN THE FIRST DEGREE.

Criminal mischief is criminal mischief in the first degree if the cost of replacing, repairing, or restoring the property so damaged, defaced, altered, or destroyed is more than ten thousand dollars, or if such acts are intended to or do in fact cause a substantial interruption or impairment of service rendered to the public by a gas, electric, steam or waterworks corporation, telephone or telegraph corporation, common carrier, or a public utility operated by a municipality. Criminal mischief in the first degree is a class "C" felony.

Section History: Early Form

[C51, § 2680; R60, § 4320; C73, § 3979; C97, § 4807; S13, § 4807;
C24, 27, 31, 35, 39, § **13120**; C46, 50, 54, 58, 62, 66, 71, 73,
75, 77, § 716.7; C79, 81, § 716.3]

Section History: Recent Form

92 Acts, ch 1060, § 8
Referred to in § 717A.3

What does Federal Law say?

1666. Destruction Of Government Property -- 18 U.S.C. § 1361

Section 1361 protects "any property" of the United States or an agency or department thereof, or any property being manufactured or constructed for the United States or an agency or department thereof, from willful depredation or attempted depredation.

"Depredation" has been characterized as the act of plundering, robbing, pillaging or laying waste. *United States v. Jenkins*, 554 F.2d 783, 786 (6th Cir. 1977); *cf. Deal v. United States*, 274 U.S. 277, 283 (1927) ("depredation" defined in context of postal statute). This section prohibits actual physical damage or destruction of both real and personal property, but mere adverse possession of that property without physical harm is insufficient to violate the law. *United States v. Jenkins, supra*, 554 F.2d at 785. Section 1361 is a specific intent crime, *see United States v. Jones*, 607 F.2d 269, 273-74 (9th Cir. 1979), *cert. denied*, 444 U.S. 1085 (1980), and the government must prove that the defendant acted willfully; that is intentionally, with knowledge that he/she is violating a law. *United States v. Simpson*, 460 F.2d 515, 518 (9th Cir. 1972); *United States v. Moylan*, 417 F.2d 1002, 1004 (4th Cir. 1969), *cert. denied*, 397 U.S. 910 (1970). The government is not required to prove that defendant knew the property belonged to the government, because government ownership is "merely a 'jurisdictional fact'." *United States v. LaPorta*, 46 F.3d 152, 158 (2d Cir. 1994), *quoting United States v. Feola*, 420 U.S. 671 (1975). In fact, title or possession by the United States is not a necessary element of this offense, if the property in question was being made for the United States. The government must present evidence establishing value of damage. *United States v. Seaman*, 18 F.3d 649, 651 (9th Cir. 1994). The penalties for violations of this section are tied to the extent of the property damage. As amended on September 13, 1994, if the damage exceeds \$100, the defendant is subject to a fine of up to \$250,000, ten years imprisonment, or both. *See Violent Crime Control and Law Enforcement Act of 1994*, Pub. L. 103-322, § 330016, 108 Stat. 1796, 2146-47 (1994). When property damage does not exceed \$100, the offense is a misdemeanor punishable by a fine of up to \$100,000, one year imprisonment, or both. *See 18 U.S.C. §§ 3559(a), 3571.*

Sources

- Iowa:

<https://coolice.legis.iowa.gov/Cool-ICE/default.asp?category=billinfo&service=iowaCode&input=716.6>

- Federal:

<https://www.justice.gov/usam/criminal-resource-manual-1666-destruction-government-property-18-usc-1361>

How is this different than other hacking tools?

Designed to do permanent, unrecoverable damage to physical property



Is this a tool?

Without (m)any use cases, is this still a tool?

Tool - a thing used in an occupation or pursuit.

Source: Merriam Webster



Or is it a toy?

Toy - an object, especially a gadget or machine, regarded as providing amusement for an adult

Source: Merriam Webster



Or is it a Weapon?

Weapon - a thing designed or used for inflicting bodily harm or **physical damage**.

Source: Merriam Webster



Do 2A Protections Extend to USB Killer?

Does the Right to Bear Arms extend to “cyber weapons” such as USB Kill?



Demo Time!



Questions?

Thanks for listening!

