

Re: Hard Drive Destruct System?

Source: <http://www.derkeiler.com/Newsgroups/comp.security.misc/2004-11/0235.html>

From: Walter Roberson (roberson_at_ibd.nrc-cnrc.gc.ca)

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In article <1d54b7e4.0411251822.729ae8cc@posting.google.com>, mike3 <mike4ty4@yahoo.com> wrote:

:Would this make a good mechanism to securely destroy a hard drive?

:1. Crash the heads into the platters with the drive at top speed

Without opening the drive to do so? You'd have to subject them to a shock in excess of 25g's: drives aren't sensitive beasts anymore.

:2. Seek them from one edge of the platters to the other back and forth

:to \

: ensure good grinding

You'd have to –keep– the heads on the platters while you did that.

Might be a bit tricky if the drive heads essentially float on a Bernoulli Effect or diamagnetic levitation rather than being mechanically positioned. Keep in mind too that a modern drive is multiple platters with heads on both sides of the platters: you can't count on gravity to keep the heads grinding against the platters.

:3. Pump a concentrated hydrogen/oxygen mix into the hard drive platter

:chamber

: while the heads are grinding away.

:Would the heat from the grinding be enough to ignite the H₂/O₂ mix

<http://www.hydrogensafety.info/articles/04-feb-04.asp>

indicates that "hydrogen is a group B gas with an auto-ignition temperature of 520C to 585C depending on the information source".

In a table slightly further down, it indicates that the flame temperature is 2318 Kelvin (fairly similar to propane.) That is provided, of course, that one is burning the hydrogen rather than exploding it. To burn the hydrogen, the concentration "in air" must be between 4.0% and 18%, or else 59% and 75%.

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:and

:ensure that data can't be recovered? Would this mechanism be good
:enough to keep copies of a large company's trade secrets from a
:competing large company?

Well, 2318 K is well above the Curie temperature of Iron (1043 K)
and –way– above the Curie temperature of Neodymium magnets (320 C)

http://www.sv.vt.edu/classes/MSE2094_NoteBook/96ClassProj/examples/neodym.html

Thus if you could keep the hydrogen burning instead of exploding, you
could do a dandy job of weakening the magnetism of the recorded information.
You'd have to be careful, though, because ferrous materials become
paramagnetic above their Curie temperature. For best effect, you should
probably put the whole thing in a large magnetic field so as to realign
the platters before recooling below the Curie temperature.

Still, I somehow can't help feeling that your proposal would –somehow–
be unsatisfactory in protecting trade secrets when there is a large
amount of money at stake. I would suggest that the company hire one of
the military–grade disk destruction specialists, which usually involves
physically grinding the drive into tiny pieces.

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I predict that you will not trust this prediction.