The Death Envelope:

A Medieval Solution to a 21st Century Problem

Matt Yoder

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Who am I?

- Matt Yoder, acronym@acrønym.com
- Mostly a guy who believes in the concept, and wants to spread the word.
- Made a promise to a friend, that if I couldn't find a good resource, I'd make it.
- I've given the topic a lot of thought.
- Undeniably a lover of fine pens and paper, and a pencrafter.

Today's Goals

1. What is a death envelope, and what problem does it solve?
2. Who should have one, or ask for one?
3. What should be in a death envelope?
4. Security options for a death envelope.
5. Varied forms of solutions.

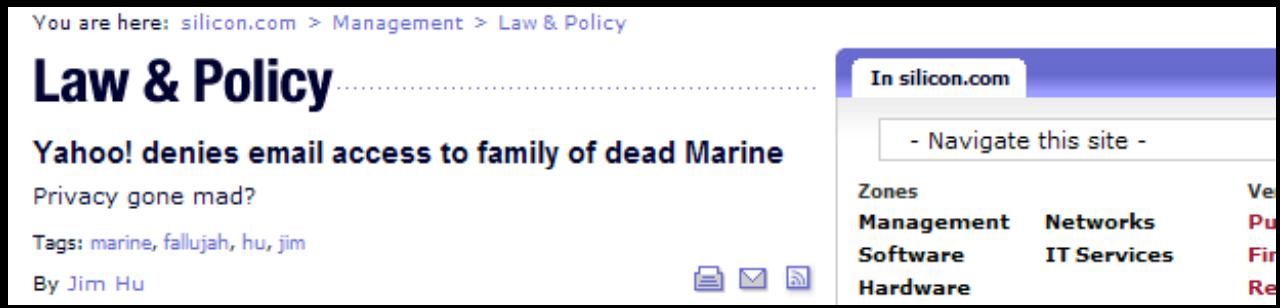
What is a “Death Envelope”?

- In today’s high-tech society, far too much important information is stored purely in individuals’ brains.
- A record of this information should exist, in case of one’s incapacitation or extinction.
- This record must be highly-secured, and tamper-resistant, and –evident.

How Big a Problem is it?

- High-tech users have lots of passwords.
- First poll I found shows an average of 40 passwords, 15 of which can be considered “sensitive”.

Source: http://www.securitymetrics.org/content/Wiki.jsp?page=Welcome_blogentry_050208_1



Source: http://management.silicon.com/government/0,39024677,39126737,00.htm

Who Should Have a Death Envelope?

- In short, anyone with information they wish to be available after their death.
- An argument could be made that anyone with a computer will have some reason for a Death Envelope
- Specifically:
  - Those with high-risk jobs or activities. Police, Fire, Military. Skydivers, extreme sport enthusiasts.
  - Those with high-risk information. Systems and Network Administrators, etc.

Who Should *Ask* for a Death Envelope?

- Managers/employers of Systems and Network administrators.
  - How much downtime is needed if a root password, or Enterprise Administrator password is lost?
- The spouses/families of those with high-risk jobs or hobbies.

Some thoughts on what should be in your envelope

- Anything stored only in your brain that people need access to if you're dead, or disabled, in a persistent vegetative state, etc….

Some more thoughts on what should be in your envelope

- Root/administrative passwords
- Online account username/password combos
  - Webmail
  - Domain name administration
  - Offsite information repositories (dhp.com, Sealand, etc.)
  - Financial institutions
- Financial “secrets”
  - ATM Card PIN

Death Envelope vs. Traditional Aftercare

- Aftercare: Potentially reference material, lower risk if invaded
  - Bank accounts, real estate information, pension, retirement funds
- Death Envelope: You don't want it referenced

Handwriting vs. Computer

- Handwriting Advantages
  - If the Feds can sniff this, you're truly screwed anyway.
  - Easy to create/update anywhere, with the simplest of tools.
- Computer Advantages
  - Consistency
  - Variety of very useful fonts

Handwriting Tricks

- Slashed zeroes
- Underline numerics
- Slow down: shape your letters, don’t scribble them
- Graph paper, forces one to slow down, and can indicate spaces in passphrases.

Handwriting Tricks

elvis/root : Pas5wØrD!

hal/root: b1cyc13bui1t42

MyPassword is... vs. My password is...

SSL passphrase:

Welcome to my dream.

Computer/Font Tricks

- OCR Fonts (Good for humans, too)

  OCR A Extended: PASSWORD/p4s5w0rd2z
- Monotype Fonts

  Lucida Sans Typewriter

  password vs. p assw ord
- Most fonts have a slashed zero hidden somewhere. On the PC it's Alt+0216 (large: Ø) or Alt+0248 (small: ø)

  P4S5WØRD

  12345678910Ø

Bonus Paper Tricks

- Invisible Inks (UV reactive, chemically reactive, temperature reactive)
- A signature across the seal point of the envelope, in water-soluble ink
- For a long-term envelope, consider acid-free paper, and extremely permanent, tamper-resistant inks.
  - Fisher “Cellulock” Checkguard technology
  - Noodler’s “Eternal” Inks.
  - … Multiple others?

The Human Factor

- Trust, but with due diligence.
- All parties should understand the importance
- It is 100% appropriate to ask to inspect a Death Envelope.
- “When to open my envelope” should be clearly outlined, possibly even in Will/Living Will.
- Ask someone for an envelope carefully.

Trust

- If someone is holding your envelope, make it clear up front that you'll want to inspect it regularly, and it's not an insult.
- Obviously, be sure that you trust this person with your most crucial, high-risk information.

Inspecting your envelope

- Photos of the seal, other signature points, for comparison
- UV illumination may reveal chemical assault not obvious to the naked eye.

Other Thoughts on Storage

- Safety Deposit Box
  - Make sure the right people are allowed to access it without you
  - You still need to check access logs, and inspect your envelope
- Locked box
  - Key can be held by another person
  - Can be “sealed” as well as locked, strong tape and a wax seal

How Often Should I Update?

- Ideal world: As often as information contained within an envelope changes.
- Realistically, this will vary extensively by individual.
  - My recommendation is to mentally examine your envelope at *least* monthly, if not weekly, to decide if important information has changed, and warrants an update.

A “Hybrid” Envelope?

- USB Key
  - Plaintext file
  - Encrypted file
  - Application specific encrypted database. (Password managers and the like.)
- Can still experience the tamper-detection benefits of a physical envelope.

Hybrid Advantages

- Larger amount of information
- Lower risk of confusion, between human eyes and print on paper.
- Possibility of multiple envelopes, one with USB key, one with “Master Passphrase.”

Hybrid Disadvantages

- More attention to tamper-detection may be required.
- Possible obsolescence of media.
- Possible media failure.
  - *Both of these last two should not be a concern, if one is updating their envelope appropriately.*

Paper Alternatives

- Plastics, for durability and water resistance.
  - Yupo®
  - Teslin®
  - Tyvek®
- Limestone/Resin papers (mostly designed for inkjets)
  - ViaStone®
  - XTerrane®
  - Terraskin®
- Others, largely to reduce tree use.
  - Hemp
  - Kenaf
  - Bier Paper (60% Beer mash and recycled bottle labels)
  - Elephant Dung
  - Coffee harvest residue
  - Banana harvest residue

Why a Wax Seal?

- 5000 years proof-of-concept testing
- Sealing wax is very specifically designed for adhesion and tamper detection.
- Every seal is as unique as a fingerprint

vs.

(Duh!)

but:

vs.

Why a Wax Seal?

- Without a paper Death Envelope, what other excuse is there to make a custom cDc or Løpht Heavy Industries wax seal? Available through www.wax-works.com (no affiliation…)

One more thing….

http://www.deathenvelope.com

Launches upon my return from Defcon

matt@deathenvelope.com

Questions?