The Death Envelope:

A Medieval Solution to a 21st Century Problem

Matt Yoder

August 8-10, 2008, Las Vegas, Nevada
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?
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://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: Pa5w0rd!

hal/root: b1cyC13bui142

MyPassword is ... VS. My password is...

SSL passphrase:
Welcome to my dream.

Matt Yoder
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

(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?