



## CASE STUDY

**Mat Honan, Senior Writer**  
**WIRED Magazine—Gadget Lab**

# Lost! 250GB of Irreplaceable Data After “Epic Hack” and Remote Wipe of Three Digital Devices

## Data Loss Situation

After two hackers remotely wiped his MacBook Air, iPad and iPod, Wired.com’s senior writer, Mat Honan, lost more than a year’s worth of documents, emails and irreplaceable pictures of his family, his child’s first year and deceased relatives. The occasional data backups he had been performing were useless as he tried to piece together his digital life.

“I considered trying to recover the data myself,” Honan admitted. “But after just a little bit of research, I decided I wasn’t about to try.” The MacBook Air uses solid state drive (SSD) storage technology, which offers faster performance in less physical space than traditional hard drives, but has unique recovery challenges. “My data was too valuable to entrust it to, well—an idiot like me,” said Honan. After careful consideration, and recommendations from several well-respected technology gurus, Honan selected DriveSavers to recover his digital life.

## Data Recovery Solution

Unlike traditional hard disk drives (HDDs), which store data magnetically on platters, SSDs store data electronically in cells, within pages, on chips. Data retention spans are shorter, which present imaging challenges, and SSD self-maintenance storage performance routines, like TRIM and garbage collection, can result in the automatic destruction of data. The SSD in Honan’s MacBook Air featured encryption technology, which can produce only a partial or corrupt image in the case of physical failure, or prevent imaging if the controller or firmware fails.

On top of these common SSD recovery complexities, the hackers had wiped (overwritten with a repeating pattern) the data stored on Honan’s device. He was able to stop the remote wipe in progress by powering down immediately after booting up his MacBook, but the process had already removed several gigabytes of data and directory structure. It was the perfect storm of data loss events.

## We Can Save It!

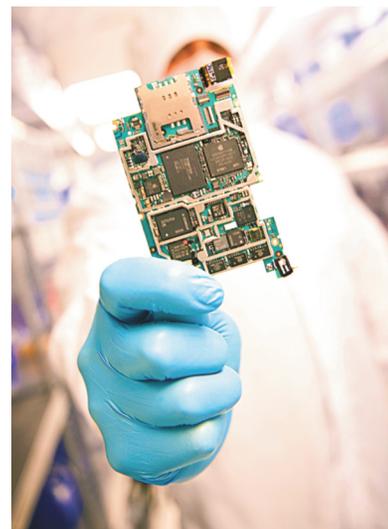
DriveSavers SSD and NAND engineers have completed hundreds of thousands of successful recoveries on these complex devices. Through unprecedented alliances with the leaders in SSD and NAND data storage technology and a trusted exchange of field failure analysis, DriveSavers has developed specialized and proprietary recovery tools for each OEM-specific device.

After a re-creation of the wipe and numerous attempts, DriveSavers recovered thousands of emails, documents, movies and the one thing Honan cared most about—his photo library. “I went immediately to the folder that bore the date my daughter was born. Everything was there. I nearly cried.”



*“Most of the shots that I had taken over the past 20 months since I last backed up were lost forever. And there they were again, recovered. Reborn. All my photos. All the home movies I’ve shot. Every one of them. It was gorgeous.”*

—Mat Honan, Senior Writer  
WIRED Magazine



*DriveSavers engineers have developed tools and technology to recover lost data from SSD and Flash devices caused by controller issues, error correction code variables, encryption and encoding variations, proprietary data organization, flash memory chip failure and customized wear-leveling algorithms.*

# DriveSavers Solid State Drive Data Recovery Services

By design, current generation SSD processors feature ever-evolving technologies and high-level encryption protocols to provide even greater data protection than leading brands of enterprise HDDs. However, these complex and highly proprietary features can create some data recovery challenges when an unexpected failure occurs. While some data loss scenarios may be unrecoverable, DriveSavers has taken a leading edge in solid state drive recovery success rates, thanks to our close relationships with controller manufacturers and our continued investments in SSD data recovery research and development.

## No Other Data Recovery Company in the Industry Can Make These Statements:

- DriveSavers helped pioneer the data recovery industry in 1985. In step with advancing data storage technology, our engineers developed cutting-edge recovery tools and techniques to overcome data loss on every new type of storage device and operating system introduced. Today, we are the worldwide leader in fast, reliable and certified secure data recovery.
- DriveSavers has developed unprecedented technical relationships with Intel, SandForce/LSI, Samsung, Kingston, OWC, OCZ and many other storage device manufacturers. The strategic alliances with these industry leaders enabled a trusted exchange of field failure analysis, allowing the DriveSavers R&D Team to develop specialized recovery tools for each OEM's specific device.
- Despite the complexities of today's advanced storage technologies, our SSD and NAND engineers can overcome data loss caused by controller issues, error correction code variables, encryption and encoding variations, proprietary data organization, flash memory chip failure, customized wear-leveling algorithms, and more.

As a result, DriveSavers has taken a leading edge in SSD and NAND flash-based storage device recoveries, including mSATA, RAID and PCI-e formats, successfully completing more of them than any other data recovery service provider in the industry. No other data recovery company in the industry can make this claim.



Contact a DriveSavers Data Recovery Advisor:

- 800.440.1904
- [www.drivesaversdatarecovery.com](http://www.drivesaversdatarecovery.com)
- GSA Schedule #GS-35F-01215



## How to Protect Your Valuable Data

- Back up your SSD just like every other storage device. It too can fail and lose data.
- Make sure SSD firmware is up to date from the manufacturer.
- Download OEM specific software tools to maintain your SSD.
- Do not optimize or defragment your SSD. It has built-in media and file system management.
- If TRIM is enabled on your SSD, data may not be recoverable if Trash or Recycle Bin is emptied.
- Do not run commercial data recovery software or repair utilities on a failed SSD as they may aggravate the data loss.
- Make sure to keep encryption or security software up to date.
- Scan all incoming data for viruses.
- Invest in a redundant backup system or RAID storage system.
- Regularly test and verify the backups. Assess and update the backup strategy periodically.
- Make copies of all critical data files and keep at least one verified copy of data off site.
- If a server fails, document its configuration settings. This will save time if physical disaster destroys the storage device, the operating system fails or you make new changes that don't work as expected.
- Do not attempt recovery yourself on severely traumatized drives. Because of the broad range and complexities of today's operating systems—use of utility software can potentially cause data loss.
- Configure another computer or server to temporarily replace the problem unit, restore available backups onto the new unit and reconfigure it as necessary to begin productive work.
- Contact DriveSavers for data recovery advice.