I Began Hacking in 1958 and Then Survived Rock’n’Roll

How Stevie Wonder, Bob Marley, Jimi Hendrix & Liza Minnelli prepared Me For Incident Response and Security

Winn Schwartau, FRSA
Security Guy Since 1983

www.WinnsSchwartau.Com
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My Dad. NBC. 1946.
Oscilloscope and Radar Dev. WWII
My Mom. 1943.

NBC Mastering Engineer
My First DefCon
My Analogue Education
Winn As Young TV Repairman
My Electronics Store
Vacuum Tube Computer
1950s
My Home Phones 1950s:
Some party line; Some 4-digit direct dial
1958: Phone Upgrade. My Mom Gets Pissed. Phone calls were **EXPENSIVE**!
1958: So She Locked My Phone.
1958: How did I Make Phone Calls, Anyway?
1961

Build no-license radio transceiver

Popular Electronics
December 1961

35 CENTS

All About Analog Computers
Best in Turntable Kits
Toy Electronic Machine Gun
Ultrasonic Cleaners

Electrons for Christmas

CALCULO Analog Computer

Produced by the Science Materials Center & Division of the Library of Science
DIY – 1950-60s
with Dickie Stallman
96th St. Columbus Ave., Manhattan
1962: Pay Phones
1962: Hack
Make Long Distance Calls for Free

• Goal
  • Free Local Calls
  • LD Phone Calls
  • Goof Calls
1962 Tools Used

- First Section
- Second Section
- Third Section
High School Computer
Going Pro at 16: (1968)  
My First Studio Gig
My First Sessions
My First Lathe
1969-1970: Complex Systems
IMSAI 1972
Applause!
1972: At the Studio

The Hack:
Using AT&T's leased equipment, we would run audio/music to the switchboard for internal distribution, tie lines to other locations, and even to California. Free.
1972: Power Company Bills:
We Were Broke: How Did We Hack Them?
1975: They Wanted to build a Studio for Free.
1975 Tools: AT&T Old Equipment Was Perfect!
1970s: Dumpster Diving AT&T
Find Great Repurposable Stuff!
Decade Counters for Studio Switching
Replaced This with These: Free
1978: My First Home Computer (That Worked At All)
My Wife. AES Convention 1980. First Computerized Audio
Automation

**NEW** Proprietary, Transformerless Microphone Preamplifier is available at no extra cost in all 32C series consoles. Opening up a new world of sonic experience, it’s a difference you can hear. Contact your Harrison distributor for a demonstration. For those who would prefer the traditional transformer mic preamp continues to be available.

**NEW** 432C Master Recording Console. 48 I/O module positions with VCA grouping and AUTOSET are ideal for mixing from two locked 24 track recorders. 48 I/O modules also allow effective split operation. Based on one group of modules and monitor on another group. Master modules may be placed in the center for easy access.

**NEW** 4432C Master Recording Console. A compact, light weight Harrison made especially for remote recording and any other weight or space sensitive application. Utilizing the standard 32C series modules, the Harrison 4432C does not include wood trim or patch bays. It comes with all normal patch points terminated in quick connect splice blocks for easy connection of all external patching. All "normalized" patch points are loaded with jumpers on splice blocks so that full patching need not be installed for operation. A new compact aluminum chassis and all-cabinet wiring keeps weight reasonably low for a full 44 X 32 console. The 4432C is ideal for studio applications where it is desired to customize patching and cabability.

**NEW** High Resolution LED meters are now standard at no extra cost in the Harrison 32C series console. The Harrison high resolution meters have both true ASV VU Ballistics and true DIN FPM Ballistics available at the push of a button. In addition, each meter includes instantaneous peak detectors to indicate overload of the recording medium. The Harrison high resolution meters have no digital clock or high voltage to interfere with sensitive audio circuits. The 36-segment bar display gives a highly accurate and reliable 'read-out' display.

**NEW** AUTOSET Automation Programmer. A new, multi purpose system under software control, AUTOSET can store up to four separate and independent dynamic mixes on each channel of an audio recorder. An integral 8 digit display can store up to 532 snapshot or preset mixes. Most important, it's simple to operate. Even a guest mixer can use AUTOSET with only a couple of minutes instruction and an experienced operator can virtually perform miracles. Demonstrations can be arranged. Call today.

HARRISON PRODUCTS ARE AVAILABLE THROUGH THE FOLLOWING DISTRIBUTORS:

- Factory
  - Western Systems, Inc.
  - 5110 W. Main St., Nashville, Tennessee 37209
  - Phone: 429-4366
  - Dave Harrison
  - Tom Piper
  - Dave Riddle

- Eastern U.S.
  - Audio Supply Co.
  - PO Box 280
  - Nashville, Tennessee 37202
  - Phone: 262-2200
  - Tom Why

- International
  - Audio Systems, International
  - 128 N. Highland Avenue
  - Los Angeles, California 90036
  - Phone: 945-533-595-436
  - Paul Ford

- Western U.S.
  - Electro Media Systems, Inc.
  - 3935 Beverly Boulevard
  - Suite 28
  - Los Angeles, California 90066
  - Phone: 439-63-4564
  - Don Gwynne
My Remote Live Studio: NYC 1980
Incident Response Was a Way of Life
My younger self taught me, “There is always a way!”

# The Show Must ALWAYS Go On
(Some EPIC Fails and Incident Response)

# Stevie Wonder
# Liza Minnelli
# Charlie Daniels
# Studio R-1
# Lennon
# Rod Stewart
Stevie Wonder & Bob Marley 1975
“Holiday Jamaica, Mon” (Free!)
Stevie Wonder Pt. I
USA Chaos: Lost 727
Stevie Wonder Pt. III
Whaddya Do?
Restoring Power:
Only 2 of Us Arrested
Stevie Wonder
Security Take-Aways

- Let the crazy guy try something crazy. What do you have to lose when 100,000 people start to riot?
- Power is GOD!
- Cyber is Physical.
- Fast Incident Response is Critical!
- Have a Backup. DR Plan. Exercise it. Again.
  - Plan for double faults.
  - Think Confocal Infrastructural Vulnerability
- When the IT hits the fan...ask for forgiveness, not permission.
When the **IT Doesn’t Sync
Live!
Auto Sync (Right!)
Manual Sync
Only 8 Years Later...with Better Technology... Uh huh!
Liza Minnelli et al, Sync Failures: Security Take-Aways

- **Sync**
  - Policy, AD, AS, Mobile, Backup, DR, etc.
  - Compliance, Policy, Testing?
  - Cross NWs
  - Time/Date-Event Stamps (time changes globally!)

- **Can U Go Manual Synchronization Mode?**
  - Develop test & override
  - Develop skills
  - Have the manual tools in a kit
  - Test the process
  - Regularly
Supposed to Be This
But Was Actually...
Charlie Daniels: Security Take-Aways

- Plan for the Unimaginable
  - Worst Case
  - Trust No One
- Architect for Graceful Degradation
  - A Graceful Small Backup is Better Than None
- Develop “What Can Go Wronggggggggg List”
  - Risk/Cost Analysis
  - Plan for Require Skills
- Rehearse FAILURE Modes
  - Mentally for those impossible situations
  - Do it again
The Reality of Remotes = The Reality of Networks & Security

“You know, it’s always something.”

Murphy has a tent city here.

One backup is not enough.

Always, always, have Plan-B and Plan-C ready to go!

Test it all.

Overstaff.
Studio R-1:

If there's one thing you always look forward to, it's a weekend party. You munch on chips and dip. You chug-a-lug your beer. You bugaloo till two.

But sometimes you overdo it. You wake up feeling less than your best. When you do, reach for Alka-Seltzer. The moment you drink it, those tiny bubbles start to speed relief through your system. With specially buffered aspirin to soothe your throbbing head. And antacids to calm your upset stomach.

You'll be thankful you have Alka-Seltzer on hand. Because when morning comes, the only sound your aching head can bear to hear is a gentle plop plop, fizz fizz.

Alka-Seltzer
Oh, what a relief it is!
Supposed to Be...
What We Had To Do...
Studio R-1
Security Take-Aways

- Time is Money: In the studio or the network!
- Reliable, tested, fixed systems can fail, too!
- Disaster Recovery
- Graceful Degradation Part 2
- Have a backup... Always!
- Test the recovery process, not just the backup process.
- Get very creative when the IT hits the fan.
Other Lessons in Systemic Collapse

# 1979:
Live From the Lone Star Café
Hank Williams Jr.

# 1969:
Bill Haley and the Comets
MSG NYC

# 1977: BT Express
NYC Blackout
In the Studio, during a TV show, or on Live Sets... you never knew what was going to go wrong. 

But it did.

- Massive Complex Networks
- Hard to Visualize in One Go
- It’s a Way of Thinking
  - Some call it Strategic
- Easier to Spot Potentials for Failure
- Complexity Breeds Insecurity
Complexity Breeds Fail
Turn All The Knobs

If your UI even vaguely resembles an airplane cockpit, you’re doing it wrong.

John Gruber
Turn All The V-Knobs
Final Incident Response Rant

# Add Some Crazy
# Teach Failure
# Architect for Failure
# Think Strategically
# Learn Systems
# Inter-Disciplinary Skills
# More Hands-On Engineering
# Practice Incident Response & Recovery Processes
Comments, Q & A?

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