The Chaotic "H4ck3r" Subculture

by Jim Dee, Senior Manager, Communications & Internet Services

The person referenced in this quote is, of course, Edward Lorenz, known for the "Butterfly Effect" as well as for the Lorenz Attractor, a surprisingly beautiful graphical representation of an extremely complex system. "It traced a strange, distinctive shape," writes Gleick, "a kind of double spiral in three dimensions ... [signaling] pure disorder, since no point or pattern of points ever recurred. Yet it also signaled a new kind of order."

I know, I know. You're asking yourself, "Where's he going with this?" A valid question. After all, if I start getting into any more substantive science, I'll have to start publishing in A&WMA's *Journal* instead of *EM*, right? So, on with the Internet-related material!

What I'm trying to evoke here is the notion of order within chaos. With the scourge of high-profile Internet site hacking incidents leading the techno-news recently, the focus has been almost exclusively on the victims—the sites themselves. For some reason, no one wants to know about the subculture of computer hackers who are perpetrating these crimes. But that's been a great media oversight; in fact, some of it is rather interesting from scientific, sociological, and literary standpoints, as some relatively ordered systems exist within the hacker community!

"When he looked at clouds, he thought he saw a kind of structure in them. Once he had feared that studying the science of weather would be like prying a jack-in-the-box apart with a screwdriver. Now he wondered whether science would be able to penetrate the magic at all." –James Gleick, in *Chaos.*

Network security, of course, has been a ubiquitous concern for quite some time; every company, for instance, has a firewall and knows why it's there. But hacking became mainstream news when major Web sites (e.g., eBay, Yahoo!, and Amazon) recently fell victim to attacks. I recall reading with amusement that the majority of these crimes were a particular variety of "denial of service" attacks that the hacker subculture calls "smurfing."

Anyone who was unfortunate enough to have watched cartoons (or had kids that did) in the 1980s is probably familiar with the "Smurfs." According to the cartoon's official Web site (available at, predictably, *http://www.smurf.com*), Hanna & Barbera produced "no fewer than 256 episodes ... which are currently showing in roughly 30 countries." (A detailed enquiry into Smurf-dom may be best left for another Internet column—hopefully in another publication altogether!)

According to some Internet jargon sites, the term "Smurf" acquired its original Internet meaning several years ago within the Usenet newsgroups. A "smurf," according to an entry in *The Jargon File*, was an "irreverent, silly, and cute" newsgroup regular. (The Jargon File—"a comprehensive compendium of hacker slang illuminating many aspects of hackish tradition, folklore, and humor"—may be found at *http://www.tuxedo.org/~esr/jargon/html/index.html*.) That particular entry notes that this word was used as either praise or insult, depending on who issued the comment.

So it's interesting that many of these kids never really changed; they were brought up staring at CRTs watching cartoons, made a painless transition from the television to the Apple IIe and the 286, and proceeded to inform the fundamental techno-lexicon with familiar terms from their not-so-distant youth.

YAHOO . . . EBAY . . . A&WMA!

Many people may be surprised to learn that our association of more than 10,000

members shares a common problem with some of the world's premier Internet sites: hackers! Judging from the few times that A&WMA has fallen victim to these people, one must conclude that hackers abound. Who would set their diabolical sights on an environmental association, after all?

Actually, the hackers probably enjoy tinkering with the smaller sites a bit more. About all anyone can do to an eBay or an Amazon.com is to flood the servers with useless information, thus incapacitating them (i.e., "smurfing" them). But many smaller sites can fall victim to more serious incidents.

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Th3r3'5 4nOth3r
 trOubl3 4bOut
   th30r135:
th3r3'5 4lw4y5 4
 hOl3 1n th3m
50m3wh3r35,
 5ur3, 1f yOu
 lOOk kl053
 3nOugh.
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Consider A&WMA's most recent brush with the criminal element: Last year, someone managed to actually change the text of one of the members-only pages. Instead of a logon page, members were greeted with a lengthy, boring message about Brazilian fringe politics, and a final message (quoted exactly as it appeared): "PEOPLE THAT THING THEY ARE BETTER THAN OTHER SHOULD THING LITTLE BIT ABOUT THEMSELFS."

I don't know what's worse—getting hacked, or having to read that botched attempt at whatever Confucian axiom he or she was trying to paraphrase. Things like this aren't cause for alarm, though. In our case (as is true for most other Web site administrators), we simply reached for a backup tape, tweaked some of the firewall settings, and went about our business as usual.

THE ORDER EMERGES

I did keep a copy of the hacked Web page, though. Upon further inspection—comparing our hacked example with some others posted on the Web—some of the interesting "order" that I had mentioned before began to emerge. For one, most hackers tend to sign their work. They include their code names, "shout-outs" (i.e., greetings) to their cohorts, and signature messages.

The biggest "for instance," however, would be their writing style. It's quite fascinating, really—and generally adheres to a few simple rules, with some minor dialectical idiosyncrasies here and there. But here's the basic coding system:

- Replace all As with 4s
- Replace all Es with 3s
- Replace all Os with 0s
- Replace all Is with 1s
- Replace all Ss with 5s

For example, if Mark Twain were here, he'd probably recall his thoughts on theories like this one, as he did in *Tom Sawyer Abroad*: "There's another trouble about theories: there's always a hole in them somewheres, sure, if you look close enough."

Translated into hacker-speak, that would be:

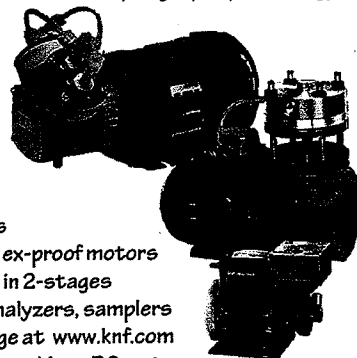"Th3r3'5 4nOth3r trOubl3 4bOut th30r135: th3r3'5 4lw4y5 4 hOl3 1n th3m 50m3wh3r35, 5ur3, 1f yOu lOOk kl053 3nOugh."

The dialects for this encoding method include replacing Ss with Zs at the end of words, Cs with Ks in certain places and, most interesting, sequences of "ate" with the numeral "8." This latter one is doubly interesting, as the word "ate" gets replaced with a numeric homophone. What could be more *ordered* than that?! As I remarked to a friend recently, these rules are generally followed, but certainly people who disregard the law in general don't particularly care about following an editorial style guide. Still, someone please alert the hacker community: Their chaotic antics are becoming … well … predictable! ♦