

# The Pole Line

A publication of The Telephone Museum

The Hackers are coming, the Hackers are coming!

## THE FIRST HACKERS: Phone Phreaks vs. Ma Bell 1955-1970

featuring Phil Lapsley  
author of "Exploding The Phone"

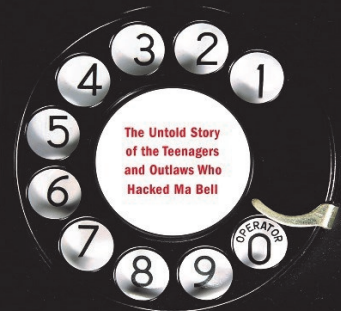
The Telephone Museum  
June 18, 2016 1-4pm  
[www.thetelephonomuseum.org](http://www.thetelephonomuseum.org)

\$10/adult \$5/child members free  
includes admission to all museum exhibits.  
event contact: [ttm.switchboard@gmail.com](mailto:ttm.switchboard@gmail.com)



## EXPLODING THE PHONE

"A fantastically fun romp."  
—The Seattle Times



**PHIL LAPSLEY**  
FOREWORD BY STEVE WOZNIAK

This June, The Telephone Museum is hosting its largest event yet. Remember Telephone Fair? Think bigger, and better! This year's exhibit titled *The First Hackers: Phone Phreaks vs. Ma Bell* is going to be a true museum quality exhibit located in our new Visitors Center.

*The First Hackers* illustrates the history of telecommunications, and the methods developed by the Bell System and others in the industry, to control and operate the telephone network. Inspired in part by the Phil Lapsley book *Exploding the Phone*, *The First Hackers* shows how the first phone hackers learned how to manipulate control of the telephone network to their own ends, often resulting in fraudulent and other illegal activities - frequently in the form of placing toll calls for free. *The First Hackers* shows how an established system built over the years based on ideals akin to "the honor system" came under increasing attack in the changing society of the late 1960's and 70's that caused convulsions in one of the largest corporations of the time - American Telephone & Telegraph Company. The whole industry would grapple over a period of years to redesign the entire system to be "hacker proof" on "the fly" without any interruption to service in the process as a result.

Individuals with experience as well as those curious in the methods and practices of early phone hacking are challenged to come and demonstrate their skills and equipment at a number of interactive stations in the exhibit. Visitors can try their hand at "dialing" calls by "blowing" 2600Hz and/or "blue boxing" calls. Also part of the phreaking experience will be stations for the loop around in our #5 Crossbar switch - connect with another visitor or lurk and see who else calls in! So make your plans now to bring your blue box and your Cap't Crunch whistle to Ellsworth on June 18th.

The Telephone Museum is also proud to announce that Phil Lapsley, author of *Exploding the Phone*, will be our guest speaker at the grand opening of *The First Hackers* on Saturday, June 18th. In addition, arrangements have been made with Phil and the publisher to have a book signing. If you already are a fan of the book, bring yours -- if you don't already have the book, there will be no better time and place to buy it than at The Telephone Museum on June 18th!

There will be a reception for Phil Lapsley Friday evening the 17th for guests — \$20 per person, so please RSVP [ttm.switchboard@gmail.com](mailto:ttm.switchboard@gmail.com) now, or contact Sandra Galley at (978) 973-0356.

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## Hello World, Bradford Maine Calling

For years we operated the only crossbar central office exchange on the east coast; our No.3 Crossbar Switching System from Bradford. Like most other collections, both private and in museums, it's calling area was pretty much limited to property on which the collection is located. We've had lines off the switch extended around the building, and at least one out of the building in the Frenchboro central office. Before that we had trunks between the No.3 and the Frenchboro CX-100, so limited calls could pass between the two offices. Out pulsing calls from No.3 into the CX-100 have been a staple of many tours over the years.

A little over a year ago things began to change. First was the conversion of our C\*NET Internet circuits from Foreign eXchange lines to Dial Pulse trunks in the No. 3. By the end of the 2014 season Chad Perkins and Rick Miller had restored three permanent incoming DP trunks and opened up the network to the worldwide collecting world known as C\*NET, The Collector's NETwork.

Regular docents have been aware that the Museum was connected to C\*NET in a limited fashion for a couple seasons now; first just via "Kennebunkport", the museum's WE 555 switchboard (967-3326, this is the number of the switchboard as it came out of service at the *Narragansett by the Sea*), and later via the 1A2 Key System (967-3322).

In 2015 we were ready to take the next step -- outgoing trunks. This would restore much of the No.3's ability to make "calls" outside the museum once again. We thought about using outgoing DP trunks, but the switch was already configured with Multi-Frequency trunks -- and at the time of the No.3's retirement, Maine was a 1+7Digit toll dialing area -- which happens to match the current C\*NET numbering plan. Using DP trunks, though easier in some respects, would involve considerable work on the No.3 itself to configure it in a way it was never configured before. The idea was quickly discarded and the "leap" to restoring outgoing MF trunks began.

During the July 20 weekend the first calls to the world were made over the No.3 outgoing MF

trunks since it's retirement. Chad and Rick who had been working on various projects over the last several years that support this functionality were ecstatic! A lot of hands helped too, as Martin Harriss and Charlie Dunne helped Chad and Rick understand that the MF trunks are actually CAMA MF trunks, and that our Asterisk tandem switch was not handling CAMA correctly. None-the-less, Bradford is now able to direct distance dial all of North America C\*NET (okay, so that's not quite the whole world, we had to leave something for next year!). Thanks also to Rick and Josh Zuckerman for the hours spent tracing trunks out of the D4 carrier bay into the switch. We now have two permanently restored outgoing CAMA MF trunks.

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### 2016 Season Gets Started at MSF

Once again our first event of the years wasn't ours! The Telephone Museum participated in the second annual Maine Science Festival (MSF) at the Cross Insurance Center in Bangor. While this was our first time at MSF, this wasn't our first time "out". Our exhibit was twice the size of our exhibit at the HOME convention last year, and featured new, additional interactive, hands-on exhibits such as the Step-by-step demo exchange, the See Your Voice exhibit with Oscilloscope phones, and the Paystation exhibit. So how did we do? I think the 131 calls on the paystation speaks volumes! Many thanks to all that worked on exhibits and staffed the booth over the weekend.



**Feature Group C CAMA MF**

What is that? No story about getting the No. 3 to be able to call the rest of the switching collectors and enthusiasts across North America would be complete without a little footnote as to what few know as 'fgccamamf'. Suffice it to say we really needed it; it's necessary for ANI and Caller\*ID, and it has never worked right in the Asterisk soft switches like the one we use as our "Internet tandem". Fixing it was going to be required to get the No. 3 to pass ANI to the Asterisk switch; that in turn was needed in order to eliminate stop-gap programming in the Asterisk switch enabling calls from The Telephone Museum to be accepted by other switches in the Collector's NETWORK.

After a season of trouble in 2014 with the hard drive in the Asterisk switch, Chad Perkins replaced it with an Intel solid state drive (SSD) and installed a fresh image of the software (11.17 last spring) - akin to the generic in real ESS machines. Chad did not welcome the discovery that we would have to download all of the source code and recompile everything mid-season to fix it -- but an upgrade procedure was devised after a few false starts on a test system, and it got done. We now are on version 11.19. Major kudos to Martin Harriss for working through the code patches, and tolerating the drama that went into getting this done.

What really is fgccamamf? We're going to leave that as homework for the reader (hint, start online here: [https://en.wikipedia.org/wiki/Feature\\_group](https://en.wikipedia.org/wiki/Feature_group)).

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**BOARD of DIRECTORS**

Martin Harriss, *President*  
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Charles Dunne, Elizabeth Lenart,  
 Sandra Galley, Jeffrey Webber, Stephen Pater,  
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**Founders:**

John Bowditch, Charles Dunne, Elizabeth Lenart

**2016 Telephone Museum Calendar**

Saturday January 9	Board Meeting: 1 PM @ Muddy Rudder, Yarmouth, ME
Fri - Sun March 18-20	The Telephone Museum Exhibit @ Maine Science Festival
Saturday April 9	Board Meeting: 1 PM @ Muddy Rudder, Yarmouth, ME
Saturday May 21	Volunteer Day: 10 AM – 4 PM @ The Telephone Museum *
<b>Saturday June 18</b>	<b>The First Hackers: 1 PM – 4 PM @ The Telephone Museum</b>
Saturday July 2	Museum Opens for the season Saturdays 1 – 4 PM
Saturday July 16	Volunteer Day: 10 AM – 4 PM @ The Telephone Museum *
Saturday July 17	Board Meeting: 10 AM @ TTM Visitor Center
Saturday August 20	Volunteer Day: 10 AM – 4 PM @ The Telephone Museum *
Saturday September 17	Volunteer Day: 10 AM – 4 PM @ The Telephone Museum *
September 24	Museum Closes for the season
Saturday October 8	Volunteer Day: 10 AM – 4 PM @ The Telephone Museum *
Sunday October 9	Board Meeting: 10 AM @ TTM Visitor Center

\* Join us Friday evening for Burgers & Beer:  
 Come thirsty or BYO!

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**Keith Cheshire donates DMS-10 Documents**

As fate would have it another road trip to another TCI show, this time in Springfield, IL, yielded more boxes of manuals and documentation for a switch in our collection; this time matching our DMS-10 donated by Union River Telephone Company.

Thank you Keith.

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# Become a Telephone Museum Subscriber!

Receive free admission to the museum, notification of special events, a free listing in the Museum Directory, and "The Pole Line" newsletter.

Name: \_\_\_\_\_

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Mail to:

The Telephone Museum  
166 Winkumpaugh Road  
PO Box 1377  
Ellsworth, ME 04605-1377

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\_\_\_\_\_

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\_\_\_\_\_

- Individual \$30
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