

# Center for Technology & Innovation, Inc.

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24 December 2014

Precisely two years ago this evening at a candlelight service in Endicott, two wise men in the East (Don Manning and Jack Westermann) gathered to recommend to a third wise man in the West (Robert Garner) that an IBM 1403-N1 printer would be a strategic addition to the IBM 1440 system being refurbished at the Center for Technology & Innovation in Binghamton, NY. At the time, expectations for the printer's successful operation ranged from "boat anchor" to "probably possible" given the known SMS-SLT interface issue and the unknown condition of the 50 year old machine. While we're not yet ready for an *Allelujah Chorus* (stay tuned for May 2015), the team is delighted to report that today the probability of high speed printing by the IBM 1403-N1 approaches 95%. The major systems of the vintage printer are, for the most part, operable. Early this month, a prototype microprocessor-based Printer Controller to detect and exchange pulses with the 1403-N1 printer passed both hardware and software proof of concept tests.

The 2015 home stretch for the IBM 1403-N1 printer revitalization includes scaling up the Printer Controller hardware (Triple Cities Maker Space) and software (Watson School of Engineering senior project), completing printer refurbishment (IBM veterans), and integrating vintage hardware with modern electronics (all).

This progress is the result of extensive efforts by IBM veterans on the **IBM1440 system team** of Charlie Davis, Gary DeBlieck, Bill Green, Don McCarty, Fred Petras, Jack Westermann and on the **IBM 1403-N1 printer team** of Bob Arnold, Art Law, Bob Lusch, Don Manning, Tom Schappe, in collaboration with **Triple Cities Makers Space** members Eric Adler, Erik Leonard, Stephen Musok, Jim Ulrich, and others, working with Binghamton University **Watson School of Engineering Senior Capstone teams**, supported by IEEE - Binghamton Section, Peter Haviland (2013-4), Nick Hekman (2014-5), Mohammad Imran (2013-4), Ryan Kulesza (2013-4), Jack Maynard (faculty advisor), Yuchao Wang (2013-4), John Wiseman (2014-5), and Alena Yampolskaya (2014-5), and **Advisors** - Computer History Museum 1401 team, Don Crandall, IBM Germany team, Jud McCarthy, and Don Seraphim.

Generous supporters include David Adour, BSC Group, Buzz Bellefleur family, David Clapp, Will Donzelli, Endicott Precision, Robert Garner, Chuck Goodwin, Bill Green, Huron Real Estate, IBM Almaden/Geodis, IBM Archives, IBM Matching Grants, Scott Jaffe, K. Joshi, Dan Koolish, Tommy Lam, Matco Electric, Frank Paul family, C. T. Reeser family, Don Rex, Bob Rosenbloom, Don Seraphim, Soho family of Belgium, Mary Thomas, Emily Wade, Jack Westermann, and Roger Westgate.

Thanks to all and to all a good night.



Roger Westgate, CT&I Board President  
Vintage IBM Computing Center opening



Robert Garner (front) speaks at Vintage IBM Computing Center  
Listening - Don Seraphim, Fred Petras, Bill Green, 6 Sept 2014

John Wiseman, Jim Ulrich, Alena Yampolskaya  
Art Law, Nick Hekman with Print Controller



Bill Green demonstrates 1440 system  
in action to Tommy Lam & Annie Lam



Bob Lusch, Bill Green, Jack Westermann, Don Manning, Tom Schappe





Bob Arnold

Eric Adler

Jim Ulrich

Tom Schappe Bob Lusch Nick Hekman Don Manning



Art Law

John Wiseman

Alena Yampolskaya



Bob Arnold

Eric Adler



Jim Ulrich Alena Yampolskaya John Wiseman

IBM 1403-N1 Team share ideas Fall 2014



Jack Westermann Don Manning



Bob Arnold Fred Petras