AUTHORS – Our Stories

Lowell A. Benson, retired 1994 as a Unisys Senior Staff Engineer –

INTRODUCTION

In October 2005 a committee was formed to tell the untold story of Engineering Research Associates, its seminal start of the Minnesota computer industry, its impact on the state's technology evolution, and the inspiration to drive people to create new companies with technology applications. Each and every author listed hereunder has told parts of the ERA and successor history. Numerous books and papers also relate parts of the story from different perspectives; they are listed or linked from https://vipclubmn.org/OurStories.html#Books and https://vipclubmn.org/OurStories.html#unpub.

In January 2023 we posted the TellingIt.pdf paper [https://vipclubmn.org/Articles/TellingIt.pdf] with a table of Our Story authors through December 2022. This paper is an update of that table. A chapter-by-chapter table of anthology authors is at https://vipclubmn.org/PeopleIndx.html#Writers. An integral part of our legacy are the companies illustrated with this icon. We have been telling this amazing story of technological evolutions for two decades!

Byproducts of the legacy initiative are the companies' milestones, https://vipclubmn.org/Milestones.html; the VIP Club milestones, https://vipclubmn.org/history.html#Milestones; and the social activity histories, https://vipclubmn.org/activities.html#Geeks .

Are we done telling the story? Almost.

MONTHLY STORIES

Many of these stories are intertwined and some overlap. Our Legacy has seven decades of air traffic control, six decades of Naval Tactical Data Systems, six decades of Airborne Surveillance, and thousands of satisfied users and customers in Minnesota, the US, and throughout the world.

By Author (primary person)

Primary Writer(s)	Title or Topic of Story	Posted
Abbott, Dennis	Canadian Patrol Frigate (CPF)	2008-05
Alcon, Chuck LCDR US Navy (ret.)	Navy Standards Program – Don Ream tribute	2020-12
Allen, Clyde	Engineering Organization, Sperry 1980	2015-10
Andersen, David	Invention of Voice Mail	2007-06
Anderson, Larry and Earl Vraa	VHSIC Hardware Design Methodology	2009-08
Anderson, Sally via Bernie Jansen	Artifact Accessioning at DCHS museum	2014-11
Anderson, Steve	Apollo 11 Memories – a TPT video interview	2019-07

Primary Writer(s)	Title or Topic of Story	Posted
Andrews, Jim	Autogram Display and How It Reduced the Logic Design Cycle	2022-05
Angvall, R. and Ron Q. Smith	ERA formation and 1100/2200 evolution	2017-11
Anonymous – at the donor's request	Arbitration, Project 6977 Israel contract	2018-05
Benson, Lowell A.	It's A Wrap – Minnesota's Sesquicentennial	2009-02
Benson, Lowell A.	Legacy at the University of Minnesota	2010-03
Benson, Lowell A.	Display Report for university #2, summer '10	2010-07
Benson, Lowell A.	Display Posters Text on 4'x4' tabletop board	2011-12
Benson, Lowell A.	Computer History Review – 1st 25 years	2012-01
Benson, Lowell A.	Slides for a 2012 Ft. Snelling presentation and Script for the Ft. Snelling presentation.	2012-03
Benson, Lowell A.	ATLAS Evolution with shadow box photos	2012-08
Benson, Lowell A.	Sperry UNIVAC History Boxes – technologies	2012-11
Benson, Lowell A.	Brief History of Sperry Corp, circa 1985	2013-01
Benson, Lowell A.	Repertoire Cards – 24 bits	2013-03
Benson, Lowell A.	Letter to the Smithsonian Museum Curator	2013-05
Benson, Lowell A.	Ocean Surveillance Chronology – 5 decades!	2013-08
Benson, Lowell A.	Book Review – Digital State by Dr. Tom Misa	2014-08
Benson, Lowell A.	Legacy Preservation Partnerships	2015-05
Benson, Lowell A.	Letter to 'Ole', i. e. Richard Olson Legacy Committee Accomplishments	2015-12
Benson, Lowell A.	Artifact Collecting – donating to the museum	2016-04
Benson, Lowell A.	Through the Ages! An Eagan Open House	2017-08
Benson, Lowell A.	Information Technology Anthology – site map	2017-12
Benson, Lowell A.	Ocean Surveillance Chronology – Univac to LMCO, 50-years of excellence	2019-05
Benson, Lowell A.	Security clearance process memo, 1973	2019-06
Benson, Lowell A.	Anthologies Tell the Story, ERA - 75 yrs ago	2021-01
Benson, Lowell A.	Technologies' Experiences for MHS interview	2022-06
Benson, Lowell A.	LEGACY COMMITTEE ANNIVERSARY!	2022-10
Benson, Lowell A.	Status of Our Stories, etc. **200th Our Story**	2023-01
Benson, Lowell A.	Human Computer Interaction History – a CBI HCI award candidate that didn't win	2023-03
Benson, Lowell A.	RCHS ERA plaque unveiled – Original ERA site.	2023-07
Benson, Lowell A.	Legacy Committee – 17 year Anniversary.	2023-10
Benson, Lowell A.	Presentation to the U of MN's TwinSPIN organization. Slides and Text	2024-02
Benson, Lowell A.	ERA/RRU Electronic Machines – as extracted from NSA declassified documents	2024-04
Benson, Lowell A.	Compendium No. 3, Club newsletter articles from January 2022 through May 2024.	2024-05
Benson, Lowell A.	Oral interview transcript of Lowell by MHS	2024-07

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Benson, Lowell A.	Recap, ERA History Initiative – 19 years of volunteerism summarized.	2024-11
Benson, Lowell A. et al'	A presentation at the Minnesota Historical Society's WWII round table – https://vipclubmn.org/Articles/Jan14text.pdf .	2025-01
Benson, Lowell A., et al'	Achievement Award for the 200-nanosecond memory - 1966	2010-06
Benson, Lowell A., et al'	Realization of a Dream, exhibit at the Lawshe	2013-10
Benson, Lowell A., et al'	Program and Product Management, 1974	2017-03
Benson, Lowell A., et al'	Donations to CBI from Curt Christensen, Pat Corbett, Bob Jablonski, Jim Larson, and M. Adelman	2018-06
Benson, Lowell A., et al'	International sites of note, http://vipclubmn.org/Articles/World_Wide.pdf	2020-11
Benson, Lowell A., et al'	UNISYS WEB and TIMELINES, what and when.	2021-11
Benson, Lowell A., et al'	Compendium, No. 2 of newsletter articles	2022-01
Benson, Lowell A., as requested by Duane Craps	Should We Tell 'Em – An E-bay add 'sold' a circuit card assembly as an ARTS I 1218 computer artifact. A forensic analysis shows that the artifact circuit card came from an ARTS IA 1219 computer.	2024-12
Blixt, R. P. 'Bob'	A-NEW Data-Processing System, CP-754A	2010-11
Blumenthal, Mike	Letter to Weinberger	2009-05
Bolton, Larry D.	Vendor Surveillance Notebook	2007-10
Bolton, Larry D.	Magnetic Drum Artifacts, three	2009-04
Bolton, Larry D.	Parts Control, Minuteman computers	2009-07
Bolton, Larry D.	Hardware Artifact Log as of November '09	2011-09
Bolton, Larry D.	Semiconductor Technology Progression at UNIVAV/Sperry/Unisys/LMCO in Minnesota	2014-09
Bolton, Larry D.	Plant 8, circa 1966 – scan of a news article	2019-04
Bolton, Larry D.	Component Quality and Reliability	2021-08
Bolton, Larry D. and Clinton Crosby	Addendum to Minuteman Plated Wire Usage	2011-02
Bolton, Larry D. and Ralph Kerler	UNIVAC 7901000-series Integrated Circuits	2008-11
Bolton, Larry D., et al'	Nike-X System Hybrid Integrated Circuits Nike-X electrical circuit/component diagrams	2019-01
Bolton, Larry D., Clinton Crosby; and James 'Jim' Howe.	Plated Wire Memory Usage on the UNIVAC Minuteman Weapon System Computer	2008-04
Bower, Ed	Sperry Utah, Sergeant Missile Program	2020-01
Brown, Curt, et al'	At 99, Don Weidenbach looks back	2021-03
Burrell, Warren	Recollections, Pre-Athena, i. e. Transtec, etc.	2011-03
Burrell, Warren and George Champine	ERA 1102 Computer at Arnold Engineering Development Center, 1952 - 1966	2010-05

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Carlson, Dan; Bob Engel, Kristen Maloney, Tom Montgomery, and John Westergren	Plant 8 Closure, end of an IT epoch	2013-04
Carter, James – via Keith Myhre	Starring the Computer – a website dedicated to computers in film and TV, some are ours.	2020-02
Champine, George – PhD	UNIVAC Computers I Have Known	2012-10
Champine, George - PhD	The First Computer Company found in the Hagley Museum archives.	2024-01
Charlton, Art, et al'	Photo Club History, donated to the museum	2017-05
Christensen, Curt	Another Computer Was Born	2008-07
Christensen, Curt	ENIAC Beginning Summary	2011-06
Coombs, J.R	Drum Prototype Design, scan of a 1947 National Electronics Conference reprint.	2010-04
Cray, S. R. and Kisch, R. N.	Report, Progress of CAD circa 1954	2009-10
Crowe, Forest W. via Andy Simon	Apollo 11 Mission Congratulations Letter	2018-02
Dakota County Historical Society via a MN grant	Images of 16 history posters displayed at the Lawshe Memorial Museum in S. St. Paul.	2024-10
Devlaminck, Ghislain A.	VIPS Adventure – fixing a problem in the field	2020-04
Devlaminck, Ghislain A.	Black Briefcase delivered classified items	2022-02
Devlaminck, Ghislain A., et al'	Plant 2, Glider History	2014-03
Dexter, Patty re' Tom Weyrick	Apollo 11 mission work interview	2019-08
Dickson, Paul – et al'	Plated Wire Dialogues	2020-03
Dragseth, Kevin – TPT Producer	About Solid State: Minnesota's High-tech History – documentary summary and links	2019-10
Durand, David – et al'	USAF mobile system developed at RADC	2016-11
Erdrich, Richard 'Dick'	A 47-year career, part 1, 30-bit experiences.	2025-02
Erdrich, Richard 'Dick'	A 47-year career, part 2, 16-bit experiences.	2025-03
Erdrich, Richard 'Dick'	A 47-year career, part 3, advanced machine experiences.	2025-04
Erdrich, Richard 'Dick'	A 47-year career, part 4, Recognition letters with more project experiences.	2025-06
Erickson, Robert A. 'Bob'	Engineering Organization, UNIVAC Feb. 1977	2015-08
Ernst, Steve	Precision Agriculture Business Initiative	2020-05
FAA/DOT via Lowell Benson	DOT paper #092650 has been shortened from 43 to 13 pages	2024-06
Fadden, C. via Les Nelson	NEXRAD, more than meets the eye	2018-01
Fox, Andrew	ERA to Lockheed Martin: MN computer Industry	2014-11
Ganz, Bill via Ron Irwin	MATCALS – Technical Description re-print	2011-05
Goldbacher, Harry	Frank Lapinski was my mentor	2015-04
Goldbacher, Harry	UNIVAC Plated Wire Memories – Blue Bell.	2015-04
Graber, Ken; Larry Bolton; and Jeff Parker	SNERT Chip Development	2008-09
Gray, George	Sperry Military Computers	2007-05

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Gray, George	NSA Used UNIVAC Computers	2015-03
Gray, George and Ron Q. Smith	Sperry Rand's Third Generation Computers 1964–1980	2022-11
Greenia, Mark	Burroughs, Legacy Corporation on YouTube	2018-04
Greenia, Mark	Computer History Archives Projects (CHAP) – 20 YouTube video links w/summaries	2019-09
Greenia, Mark, et al'	Sperry UNIVAC Fastrand Drums on YouTube	2018-03
Greenia, Mark, et al'	Early Computer Parts, notes and YouTube link	2018-09
Gunderson, David	Univac EARTS career summary segment including duty in Alaska	2023-04
Gunderson, David	AN/UYK-23 Field Stories, Quicklook II system.	2023-05
Hambleton, Glen	World-Wide Career	2008-01
Hambleton, Glen	ZKSD Proposed, ATC for West Germany	2023-06
Heckert, Quint	Booklet, VIP Club's 30-Year Anniversary	2010-12
Heryla, Robbin – Unisys HR Dept.	Membership Recruiting – VIP Club, 1988	2015-07
Hoffman, Kevin	Assignment in Mississippi	2020-09
Hunter, Ned; Tom Knops - et al'	First Flying Programmer, Oscar Lundbeck	2013-09
Inda, Jim and Mike Wold	B-2 STEALTH BOMBER STORY	2015-01
Irwin, Ron	MATCALS – A 30-Year Life	2015-06
Jansen, Bernie	Legacy Preservation Sites – a 2012 Unihogs luncheon presentation.	2012-12
Johnson, Carl	Carl Johnson Collection at CBI	2017-10
Johnson, Carl	Micro-1100 Story – Chip Set Development	2019-11
Johnson, Don via Larry Bolton	Semiconductor Testing at UNIVAC Semiconductor Test Record, 1957-1962 P/N 4908000 and P/N 4907828 specifications	2020-07
Johnson, Glenn and Dave Saxerud	Our Winnipeg Story	2010-01
Keremedjiev, George; Anders Carlsson, and Duane Craps	Eighteen Bit Computers – from three non-Minnesotan Legacy Anthology browsers	2015-09
Ketchum, James via Warren Burrell	When Computers came to Minnesota	2011-07
Klobuchar, Jim via Larry Bolton	Creation of the 1824, scan of Minneapolis Star article from Nov. 5, 1965.	2018-11
Knight, Michael	Reservation System, BEA Design Ahead of its Time?	2009-01
Koltes, Steve	Employed 60-Years, James Bacon	2015-11
Koltes, Steve, et al'	ARTS II Display Emails	2020-08
Lantto, Ernie, et al'	When Did it Happen? Computer type dates.	2021-10
Larson, LeRoy	Quicksilver, a Shadowbox Story	2017-06
LaViola, Joe – **UBBRG President**	Letter to Unisys Blue Bell Retirees Group	2016-10
Leichtweis, Capt. Donald USN ret.	Nomination, Name a Ship the Donald Ream	2014-12
Lenfestey, James P.	Gaggle of Geeks – a news article	2008-03
Lindley, John via Lowell Benson	'Born of a Wartime Necessity"; NAC became ERA – gliders to computers!	2024-08
Lins, Ray vis son Mike Lins	Open House at Sperry Univac - 1974	2018-07

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Loran, Michael Cort	A 40-year career with Unisys that started in Denmark – Operating Systems - 1100/2200	2024-09
Lundgren, Richard 'Dick'	European Defense Business	2007-12
Lundgren, Richard 'Dick'	Charles Babbage Institute – Our 1st Visit	2014-10
Lundgren, Richard 'Dick', et al'	Compendium, IT Legacy Newsletter Articles	2016-03
Mager, Don	UNIVAC Digital Trainer – UDT-6	2019-03
Mager, Don - #101, *The first of Our Stories*	Apollo Computers – the early deliveries	**2007-04**
McCarthy, Gene; Mike Bukovich, and Bob Elfering	Contract Wins; CPF, UYK-43, and UYK-44	2007-07
Metzger, Jack, et al'	Circuit Card(s) History – germanium to silicon	2016-12
Miller, John	Turtle Mountain Corporation spinoff NDSU newsletter article scan re' Miller	2021-12
Misa, Dr. Thomas – 2nd holder of the **ERA Land Grant Chair** for the History of Technology at the U of MN.	Minnesota's Hidden History in Computers	2010-12
Mitchel, Herbert – auto-biography excerpts from George Gray via Ron Q. Smith	UNIVAC in Philadelphia, Volume I UNIVAC Marketing, Volume II	2014-01
Monson, Bengt 'Ben'	Plant 2, A New Tenant	2014-02
Monson, Robert via Keith Myhre	Valiant & Intrepid Workstation History	2022-03
Montgomery, Tom, et al'	Legacy Epoch, Air Traffic Control	2012-07
Mullaney, Frank C.	December 12, 1950 – distribution letter and Technical Memorandum No. 15 reprint	2011-01
Mullaney, Frank C.	ERA 1101 Computer Design Features - scan	2017-02
Myhre, Keith	Cataloging Legacy Artifacts at the Lawshe Memorial Museum.	2020-10
Myhre, Keith	Artifacts on Display, 16 Legacy Story Boards	2021-05
Myhre, Keith	Valiant Workstation Resurrection	2022-04
Myhre, Keith	Oral Interview of Keith Myhre by MHS	2023-02
Myhre, Keith	Iskos Visit	2025-06
Myhre, Keith, et al'	40-year ERA Plaque – Where did it go?	2022-08
Nelson, Ed, et al'	Fred Hargesheimer Story	2007-09
Nelson, Les	Programmable Signal Processor (PSP) Development	2022-09
Nelson, Les and Lowell Benson	ASW History, 50+ years	2012-09
Nelson, W. 'Curt'	ERA 1103 Announcement – a 1953 news scan	2017-07
Nelson, W. 'Curt'	BOMARC, the ERA 1104 development	2017-09
Nelson, W. 'Curt' and Lowell Benson	ASW-mod 1 Avionics System, 1963 Aviation Week reprint plus our background info.	2010-10
Nemanich, John	Networking History at Unisys	2007-08
Neukom, Hans, et al'	UNIVAC 418s, triple use application	2017-04
Neuman, Don	Air Force Satellite Control Network - reprint	2013-12

Primary Writer(s)	Title or Topic of Story	Posted
Nichols, Jack via Les Nelson	1971 Press Release ERA's 25th Anniversary	2023-08
Norris, William C.	World War II Experiences – a paper scan	2016-01
Palzer, Norm	Drum Memory archived at MHS	2009-06
Petschauer, Richard J. 'Dick'	Carbon Heat Trapping: Merely a Bit Player in Global Warming	2008-02
Petschauer, Richard J. 'Dick'	History and Evolution of 1100/2200 Mainframe Technology	2014-07
Pickering, Gerry	Creativity-Success-Obscurity, what happened?	2012-04
Pogorzelec, Ed	Winnipeg Operations, Tribute 1977-2000	2021-06
Pogorzelec, Ed	Winnipeg Operations People and plants	2021-07
Pogorzelec, Ed, et al'	Canadian Patrol Frigates upgraded	2017-01
Rapinac, James 'Rapp'	Army Experiences before Sperry Univac	2016-05
Rego, CWQ4 John P.	Deployment to Somalia – MAATCALS in 1993	2011-04
Reiter, Allan	UNIVAC I Computer System, Technical UNIVAC I System Experiences, People	2012-06
Rubin, Richard via Gish Devlaminck	Little Instrument in Your Pocket	2021-02
Sandusky, Vern	Johnston Island Hurricane damage report Johnston Island repairs report	2009-12
Sater, Jack	Air Traffic Control – From NTDS to ARTS	2008-06
Schlueter, Lou	MAPPER Systems History Presentation	2013-06
Schlueter, Lou	MAPPER, The greatest 'marketing' error	2023-11
Shelander, David	AN/UYK-43 Computer, a synopsis	2012-05
Sheldon, Lee	ILAAS Project – the type 1818 development	2025-05
Shoquist, Marc C.	Serial Input/Output papers, two	2008-12
Shoquist, Marc C.	Interview transcription via John Westergren	2016-05
Sloan, Judy	Joint Strike Fighter Electronics	2018-08
Smith, Ron Q.	Unisys history sequence – slide set	2014-04
Smith, Ron Q.	Unisys and the Growth of Computing	2016-02
Smith, Ron Q.	Growth of Computing at Unisys	2020-06
Snyder, Harlan via Keith Myhre	ATLAS & Early days of computers.	2023-12
Snyder, Samuel S. – release June '09	NSA History, General-Purpose Electronic Digital Computers – reprint of 1964 paper	2010-08
Society, IT History via LABenson	IT History Reference (www.ithistory.org) Honor Roll. ERA to Unisys people therein	2019-12
Solberg, Arlyn	TRANSIT, The Navy's 1st GPS development	2012-02
Solberg, Arlyn and Jacques Lignieres	London Development Center, history	2013-11
Solomonson, Craig	UNIVAC 8008 Micro – 1972 8-bit computer	2015-02
Stockman, Chuck	S-3A aircraft computer history	2018-10
Stone, Noel	Engineering Organization, UNIVAC July 1961	2015-10
Suckstorff, Dale	TCRS, Trident Carry Onboard Reduction System	2023-09
Svendsen, B. N. 'Mike'	Semiconductors at UNIVAC for CBI	2013-07
Svendsen, B. N. 'Mike'	ERA to Unisys Technologies – shadow boxes	2014-05

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Svendsen, B. N. 'Mike'	UNIVAC to Unisys Technologies – shadow boxes	2014-06
Taipale, Harvey	What is all this LEGACY stuff about anyway?	2007-11
Taipale, Harvey	Winning of CNCE – Air Force comm system	2021-09
Taipale, Harvey, et al'	Snapshots of Times – President's Messages	2022-07
tbd		2025-07
tbd		2025-08
tbd		2025-09
tbd		2025-10
tbd		2025-11
tbd		2025-12
Thomas, Todd J.	CP-823/U Communications Log	2010-09
U of MN, CSE	Digital Age, a reprint of an Inventing Tomorrow publication, 75th IT anniversary.	2011-10
Unknown from Ron Irwin	MATCALS – Controlling the Skies in 1993	2011-04
Von Neumann, John	First Draft of a Report on the EDVAC, 6/30/45	2022-12
Vraa, Earl M.	Computer Aided Design - automation	2009-09
Vraa, Earl M., et al'	Evolution of CAD, 1957 => 1980s	2009-11
Walker, John via Chuck Caldarale	UNIVAC Memories – A Swiss Autodesk, Inc. founder and history.	2024-03
Webb, Tom	The almost Silicon Valley, Pioneer Press	2010-02
Weidenbach, Don	Career summary, 1946 to 2021	2013-02
Welshinger, Paul and Bob Keenan	Environmental Test Laboratory Evolution	2008-08
Wendell, Douglas C. Jr.	Magnetic Tape Plating Facility, Unisys History	2008-10
Westergren, John	Video Library List, 3/11/2009	2011-08
Westergren, John	Focus on the Future, presentation to the Annual Unihogs/Unturkey's luncheon	2011-11
White, Robyn – Chief Editor	U of MN, 40 Years of Excellence	2009-03
Williams, Gerald 'Jerry'	Three Satisfying Inventions – book excerpt	2021-04
Willis, Ken via Ron Q. Smith	ENIAC is 75-yrs Old! Philadelphia Inquirer scanned article	2021-02
Wilson, Jack – via Larry Bolton	Astronauts to the Moon, scan of Minneapolis Star article from Oct. 20, 1968.	2018-12
Yost, Jeffrey - PhD	Minnesota's Computing History – a web site	2019-02

SPECIAL THANKS TO:

- ➢ 600⁺ individuals who have contributed documents, mini-bios, photographs, slide shows, topical articles, and their time telling the ERA story.
- ➢ Chad Roberts, the 2012 Dakota County Historical Society Executive Director, who got the ball rolling to begin the artifact exhibit at the Lawshe Memorial Museum in S. St. Paul.
- ➢ Chad Roberts, the 2025 Ramsey County Historical Society President, who has agreed to preserve the UNIVAC/Sperry/Unisys shadow boxes in a future public exhibition site.
- ➢ Dale Weeks, past DCHS President, who connected with the Minnesota High-Tech Association then led the fund raising for a computer history web site and the TPT documentary.
- ➢ Don Hall, former CDC employee, who provided the seed money for the 2023 ERA Plaque at the original ERA site.
- ➢ Dr. Tom Misa, former CBI Director, who gave our committee a decade of 'archiving' guidance, who included parts of our legacy in his U of MN lecture series, who included parts of our legacy in his Digital State book, who was the principal narrator for the 2019 TPT documentary, and who wrote *Gender Codes: Why Women are Leaving Computing* including interviews with several of our IT pioneers.
- ➢ Mark Greenia, director of the Computer History Archives Project, who has produced almost 3-dozen You Tube videos featuring UNIVAC/Unisys history topics.
- ➢ Matthew Carter, current Executive Director of the Dakota County Historical Society who has facilitated Minnesota Legacy grant applications for materials and supplies to help document and display the artifacts donated to the Lawshe Memorial Museum.
- ➢ Members Emeriti (VIP Club) Bernie Jansen and Millie Gignac who as DCHS board members in 2011 initiated the process of establishing a permanent artifact display site.

Life is our time, space continuum of human interactions.

Yes, we are 'Almost Done!'

LABenson, BEE UofMN 1966
UNIVAC 1960 => Unisys 1994
VIP Club board, 2005-2019 and ½ of 2024