

Early Computer Parts

1 INTRODUCTION

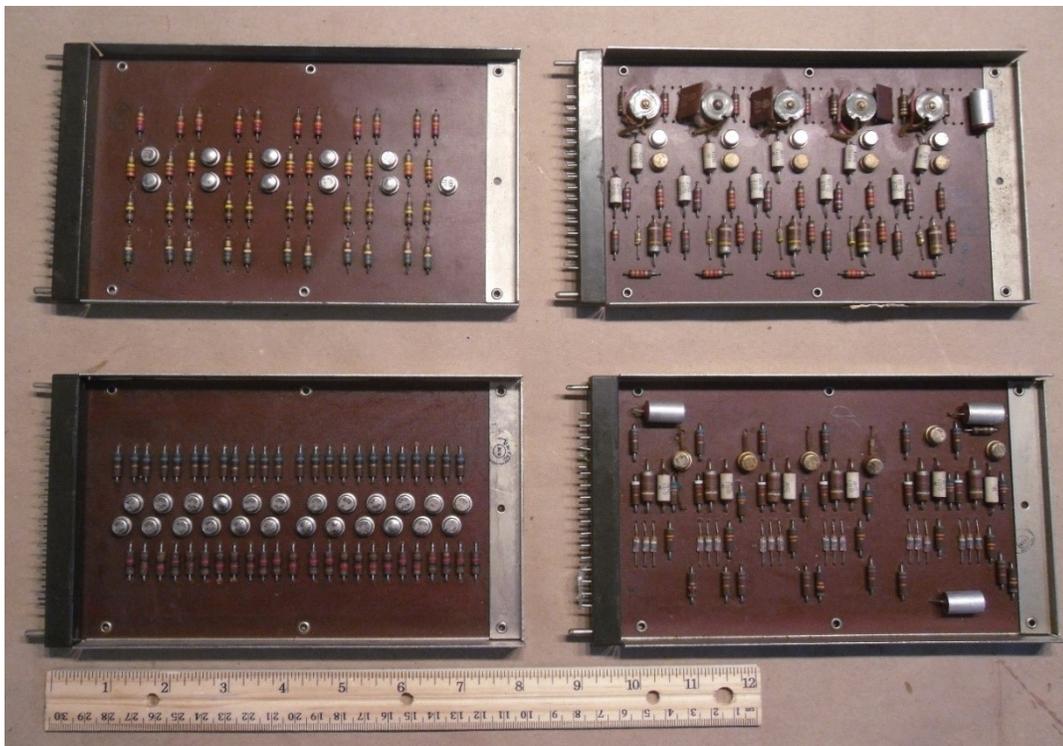
This is a two-part paper, the first part stems from a 'What Are They' message from Mark Greenia¹. The second part is summary information and links to a You-Tube UNIVAC I history video compiled by Mark as part of the Computer History Archives Project (CHAP).

2 WHAT ARE THEY?

2.1 MESSAGE FROM MARK GREENIA DATED JULY 25, 2018

Hi Lowell, I hope you are doing well. Have a small favor. Perhaps someone in the VIP club might be able to help with a question. I am trying to identify these four UNIVAC boards I obtained, all dated 1958.

I am trying to determine what Univac model they may have come from and what their function was. Size is 8 by 4-3/4 inches. I am guessing "UT" stamp is Utica plant, but don't know what the other markings mean. Any help or potential leads would be great!



¹ Mark is the lead CHAP researcher and an Adjunct Professor of the University of San Francisco.

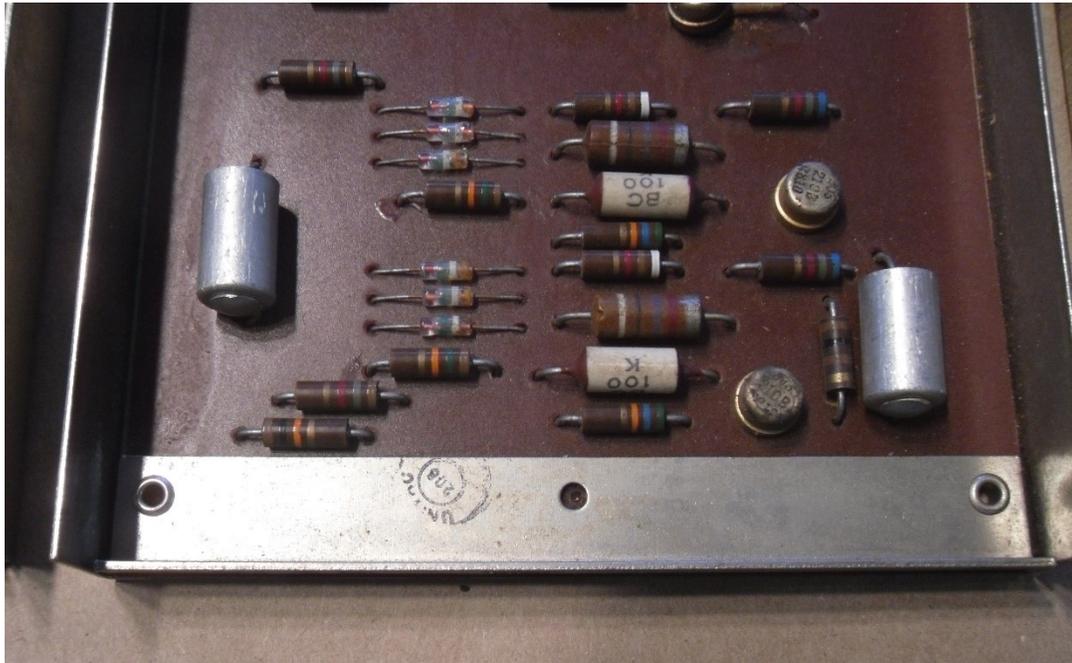


Figure 1. The UNIVAC 208 on the aluminum rail is a Quality Control inspector's stamp.



Figure 2. Repetitive circuits:

Lowell's guess is that this board is an analog to digital converter for five bits, possibly a teletype interface board – top row are transformers, 2nd row with five transistor pairs that are likely RTL flip flops. The round brown banded components are resistors, ¼ watt and 1 watt. The white/silver tubular components are capacitors for electrical noise suppression and line/signal stabilization.

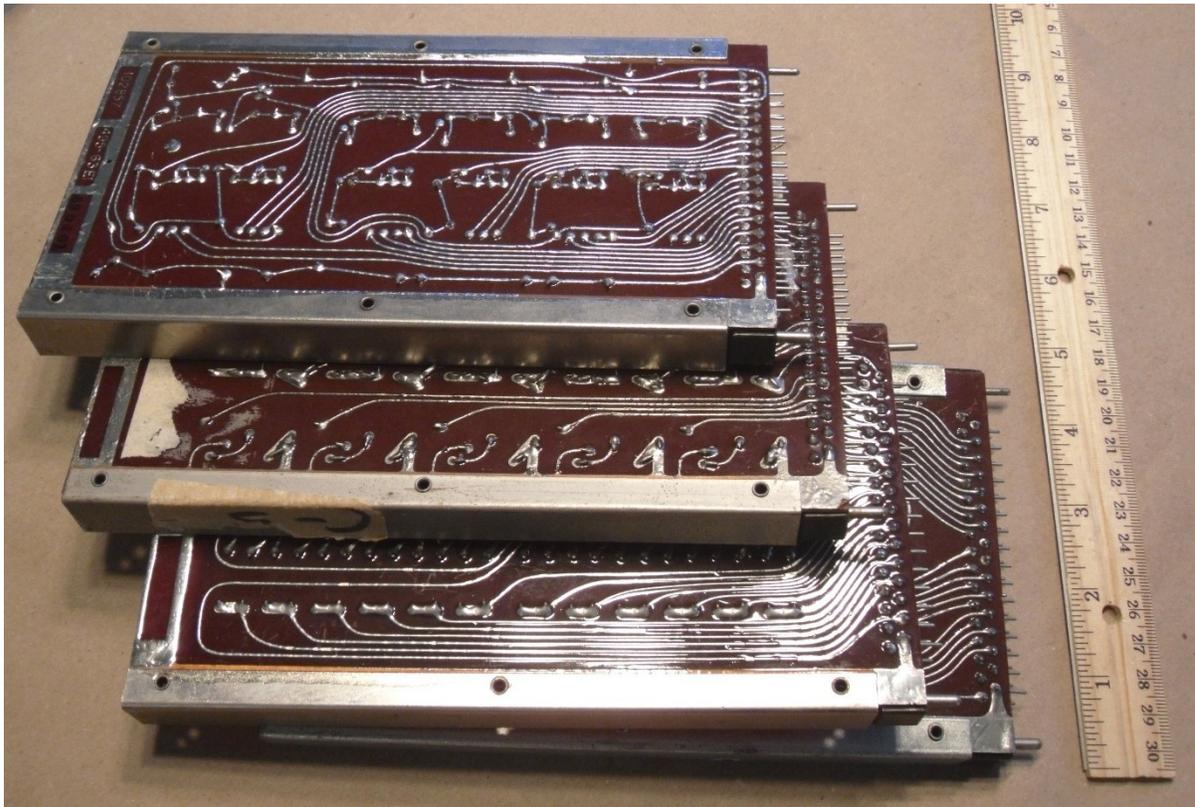


Figure 3. Mark opines that the UT inspector stamp may mean Utica. Lowell would guess that UT could be UniType, the UNIVAC variation of a 5-bit interface teletype machine.



Figure 4, Top board, black stamped 58 04 01 is likely the date of manufacturing finish. Bottom left silver 6-digits are the assembled module part number.

2.2 VIP CLUB NEWSLETTER ARTICLE, SEPTEMBER/OCTOBER 2018

How is your memory? Can you identify the application of these 1958 UNIVAC printed circuit boards? Mark Greenia sent us the snapshots and needs your ID help.

These are 4.5" x 8", with ~33 pin connectors. The numbers at the left are most likely Assembly Part Numbers, stamped at the right are manufactured dates, i.e. 58 04 01. What is the center 495-... number?

From the transistor count, the bottom left board of figure 1 looks like 12 Resistor-Transistor Logic flip-flops. The top right looks like pulse transformer circuits, either memory interface or Input/Output circuits. There are three more photos, send me a note if you can help.
webmaster@vipclubmn.org by LABenson

VIP CLUB MEMBERS NEWSLETTER FEEDBACK

2.2.1 From Don Weidenbach

Lowell: Those boards are based on the design of File Computer boards, but the vacuum tubes are missing. That leads me to believe that they were from a peripheral gear designed late in the program, as transistors were used for some of the design. The mechanical details all fit; dimensions, metal side rails, and 33 pin connectors. I don't remember the numbers used for identification, but I know they were etched on the board (not ink stamped or paper labels). There must be some photos of UFC boards in the history files that would help identify them. *Don*

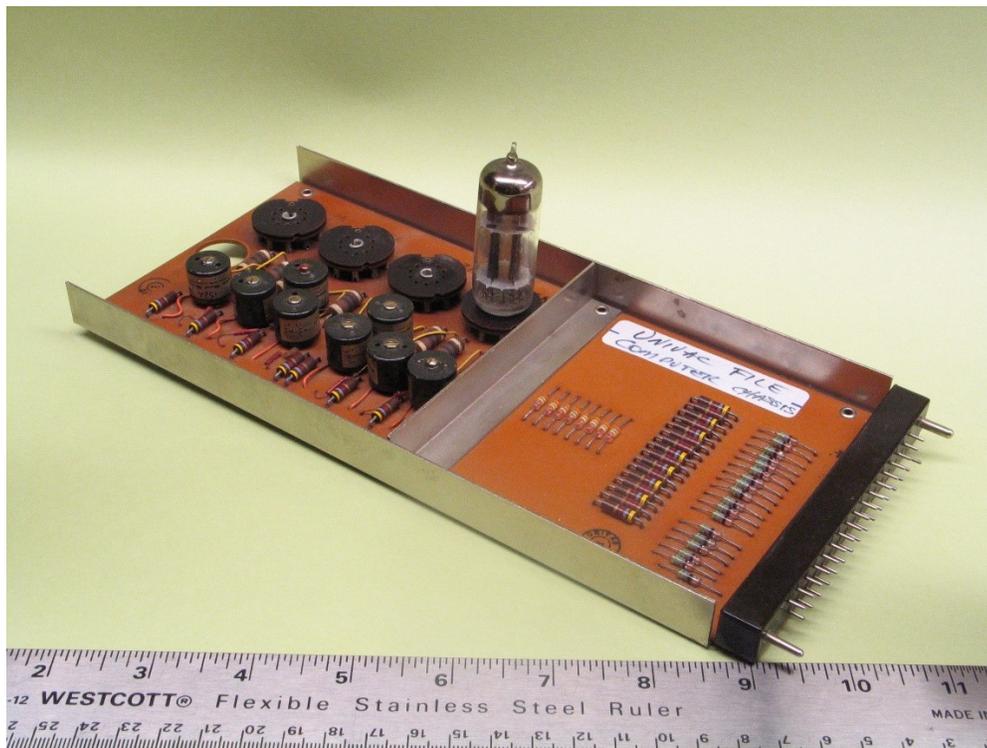


Figure 5. Circuit card presently in the Lawshe Memorial Museum collection.

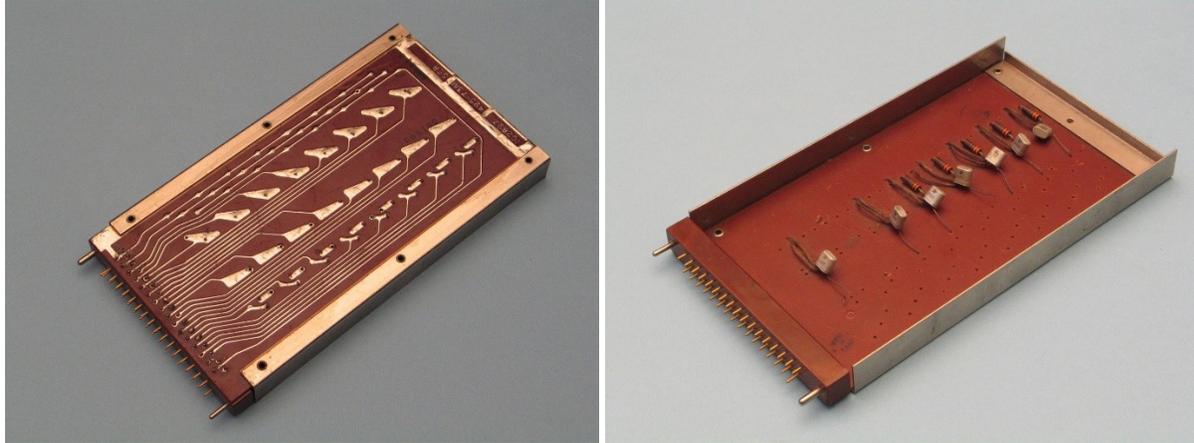
2.2.2 From Larry Bolton

Ref the photos in the latest newsletter. These look like File Computer or TACS cards. They have many similarities to the cards in our collection. Especially the 495-73A1 card donated by HJT (see attached photos).

- Same 33 pin connectors.
- Same frame construction.
- Same size as a couple of our cards. Length and the presence of a handle may vary depending on where used.

Established in 1980

- Same card function marking format and sequence (center number). This may be a logic function and revision mark.
- See the 495-73A1, 495-139A1, 497-101A1, and 497-106A1 cards at DCHS and documented in the data base (at least in my Excel version of the database).



Larry Bolton

2.2.3 From Keith Behnke

Lowell: The printed circuit cards shown in the latest newsletter appear to be similar to the ones in the Univac File Computer. I remember working on this type of card in the late fifties, but they had vacuum tubes on them. Perhaps these were later models using transistors. The card size and connector are the same. *Keith*

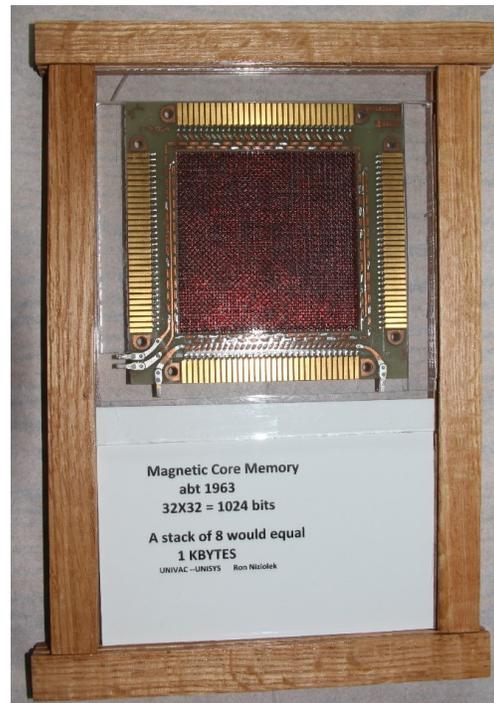
2.2.4 From Ron Niziolek

Sorry I cannot help with your pictures; before my time. The technology looks familiar though!!!

But, I did start at Plant 5 and Plant 1 in 61/62. The club's Legacy collection may appreciate this mounted object. I was in the memory department and we designed TRANSISTOR (imagine) drivers and sense amps for the core array.

Compare this to today's 65GB smart card!

Ron Niziolek 1961 to 2006



3 UNIVAC I HISTORY VIDEO*

Compilation editing by Mark Greenia, for the Computer History Archives Project; Professional Narration, David Melvin. (C) 2018 – CHAP.

An educational overview of UNIVAC I basic components. Intro segment includes higher quality images than are contained in the original film. Original 1953 film begins at index [5:52](#), followed by brief photo gallery. Original 16mm seems to have been lost over time. UNIVAC was the first U.S. business computer, mass produced and opened the door to a long line of commercial computing products. The historical data in the film is well worth preserving and the introductory images may help add some clarity.

YouTube film Index: [0:06](#) Dedication [0:10](#) Prologue, Introduction [01:32](#) Introduction - Remington-Rand [02:15](#) Narration & Images – Supervisory Control Unit, Oscilloscope, Central Processing Unit, Uniservo, Unityper, Uniprinter, Mercury Delay Line Memory, Vacuum tube circuits, Card-to-Tape Unit, High Speed Printer [05:47](#) Acknowledgments & Resources [05:52](#) Original Remington Rand Film 1953 [23:25](#) Photo Gallery & Resources [24:26](#) Copyright Notice [24:29](#) Acknowledgements [24:41](#) Deleted Scene

3.1 CREDITS

*A large number of dedicated individuals have done a great deal to preserve the history of these early machines and those that followed. For more information, please visit some of the following excellent resources. Sincere thanks to the following individuals and organizations.

- Tony Buglione, Manager Ext. Communications, Media Relations, UNISYS
- David Melvin, Professional Narration “Large Scale Scientific Computing at Lawrence Livermore National Laboratory,”
- (George Michael & others); Sam Coleman & others <http://www.computer-history.info/>
- Alan Reiter’s UNIVAC history <http://univac1.0catch.com/>
- Al Kossow’s Online Software Archive <http://www.Bitsavers.org>
- VIPClubMN.org, (former employees of Unisys & predecessor companies), Lowell A. Benson, director/editor; Harvey Taipale, President; Ronald Smith, Historian, <http://www.VIPClubMN.org> and UNIVAC articles at <http://vipclubmn.org/BlueBell.html>
- Ed Thelen, Computer Historian <http://ed-thelen.org/comp-hist/>
- The Computer Museum <http://www.computerhistory.org>
- Southwest Museum of Engineering, Communications & Computation (SMECC), Ed Sharpe Archivist, <http://www.smecc.org/>
- National Aeronautics and Space Administration (“NASA”) archives Lawrence Livermore National Laboratory (“LLNL”)

4 ANSWER?

I, editor Lowell, believe that the most accurate statement is from Don Weidenbach who was there designing boards of these types for the File Computer. These boards are quite likely from the File Computer (section 4 of [http://vipclubmn.org/BitsBakUp/UNIVAC%20File-Computer%20System%20Specifications%20\(1957\).pdf](http://vipclubmn.org/BitsBakUp/UNIVAC%20File-Computer%20System%20Specifications%20(1957).pdf)) and section 4 of [http://vipclubmn.org/BitsBakUp/EF328%20Univac%20File%20Computer%20System%20Resume%20\(April%2026,%201957\).pdf](http://vipclubmn.org/BitsBakUp/EF328%20Univac%20File%20Computer%20System%20Resume%20(April%2026,%201957).pdf) .

or

from a Tactical Air Command (TACS) machine that was also a 24 bit machine that was sort of a follow-on of the File Computer.