# Condition summary report for "Celebration" Apple-1 board

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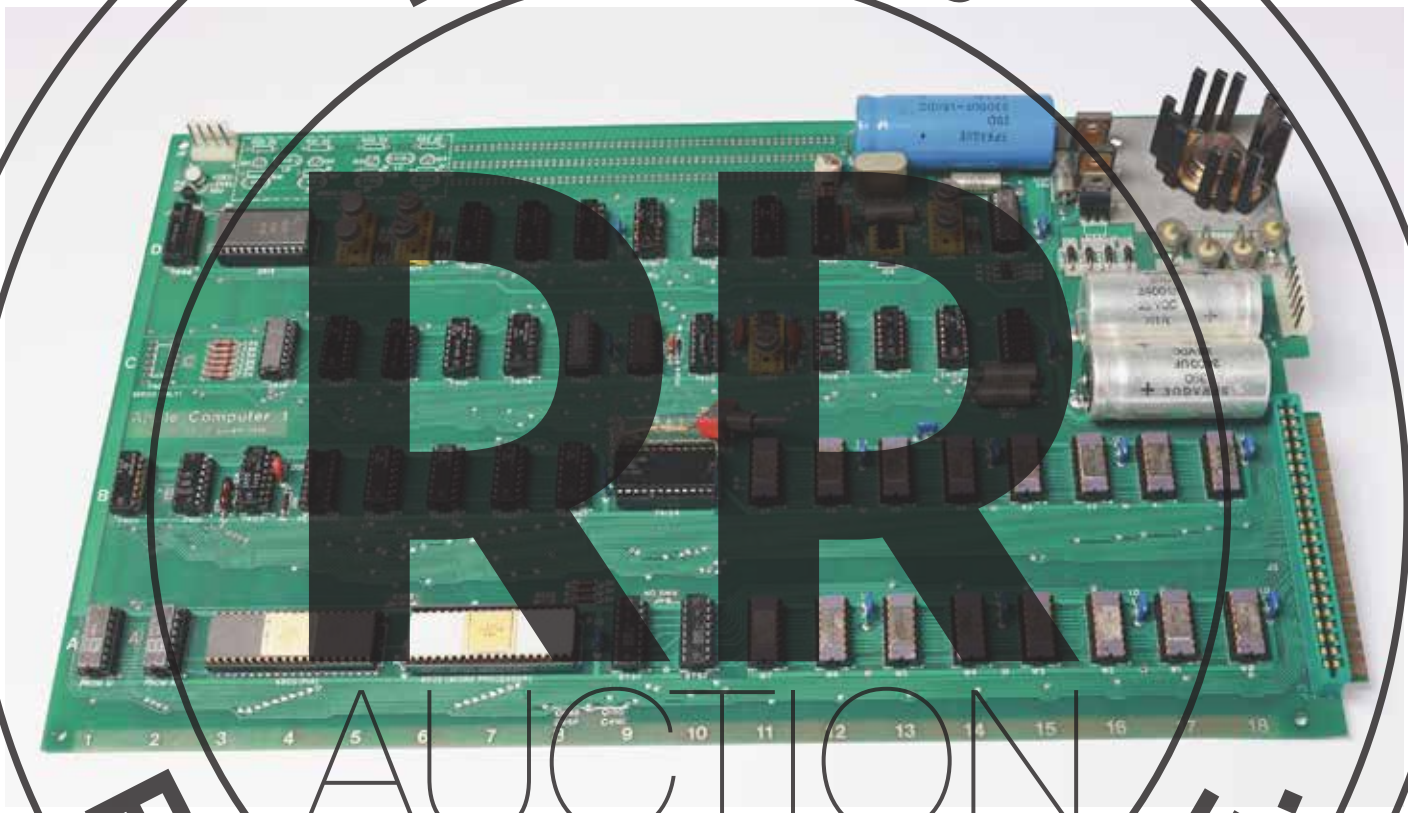


*Requested by*

*RR Auction*

*Revised January 2026*

# Summary:

Original Apple-1 pre-NTI board with unique features as specified in this document (i.e. populated with Robinson Nugent sockets) with period-correct KeyTronic keyboard, power supply, Sony TV, video modulator, and cables. Also included is a replica Woz-signed documentation set.

This Apple-1 board, called the "Celebration" unit, based on evidence in this document, appears to be board #0 from the 1st production run of Apple-1 computers and predates the delivery of the first 50 Apple-1 computers to the Byte Shop.

This Apple-1 was originally examined on May 4th 2016, at a private residence in Celebration, Florida.

A video record was made available and provided to the artifact's owner in 2016 of the entire process that was used to create this document.

The process included visual inspection of the artifact and an electronic evaluation of critical discrete components attached to the board.

The details of this are outlined in this report.

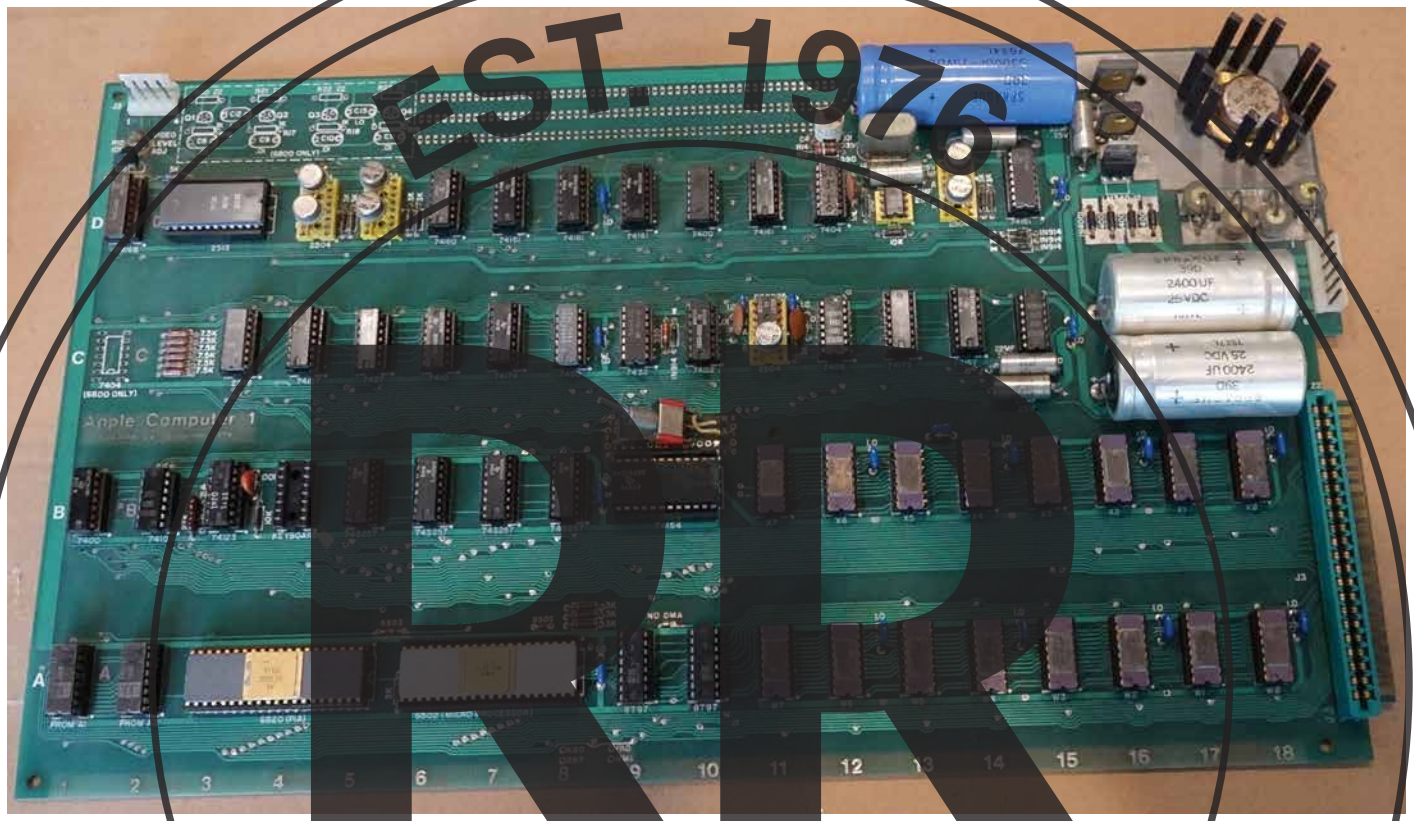
This board was not powered on during this process, only evaluated for potential power-up.

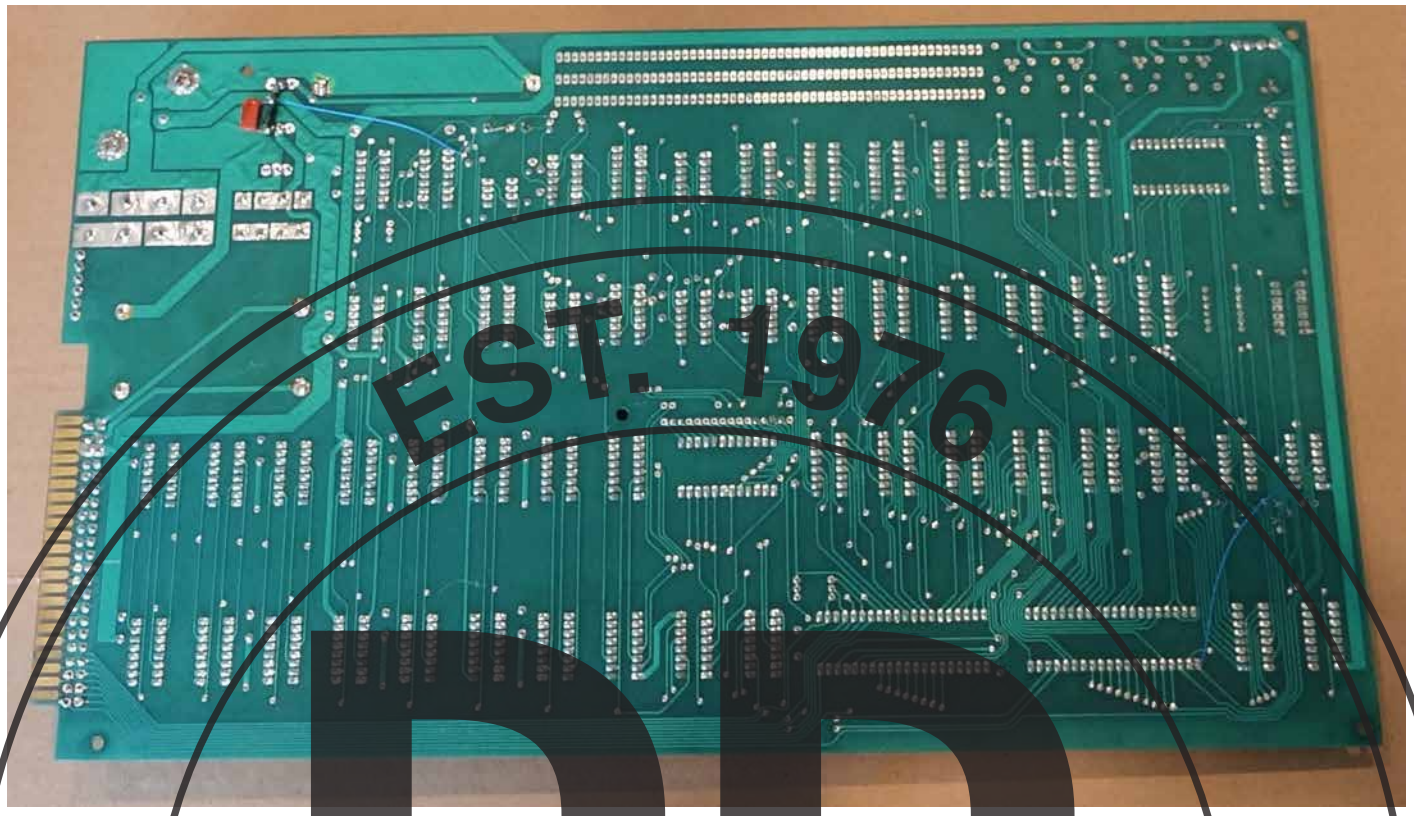
Using the guide of the "Henry Ford" board as a 9.5, the Ricketts board as a 5 and the Huston II board as a 3, the current physical board condition is a 5.5 as indicated by the issues in this report. This could be corrected through minor restoration and sourcing of the replacement components to a minimum estimate of 6.5, depending on the availability of components and the quality of work performed.

[Update] Cosmetic Restoration work performed on July 5th 2016 to bring unit to a condition rating of 6.5 to 7.0

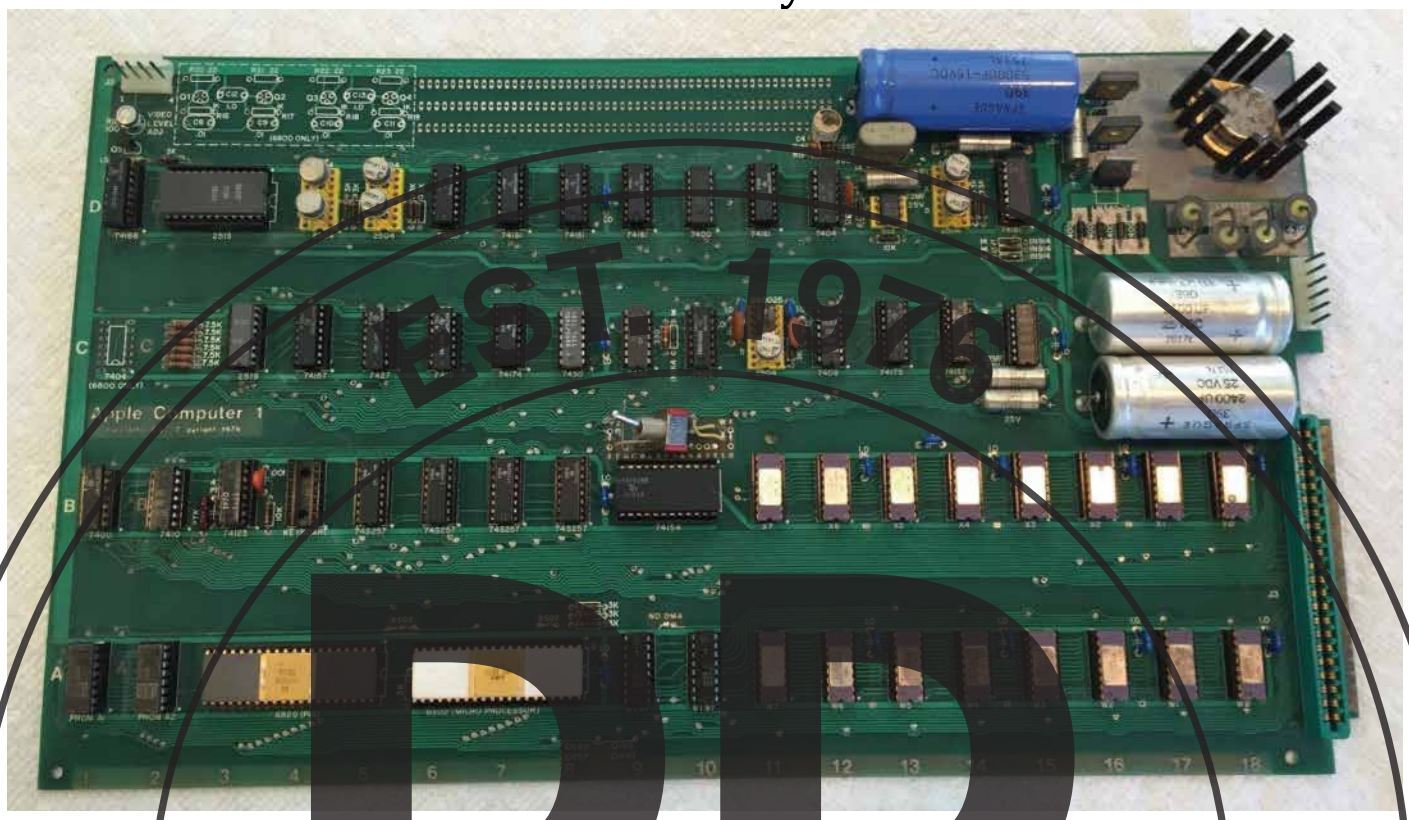
[Update] Updated in January 2026 to reflect the current condition with additional information about the Apple-1 based on discoveries since 2016.

Pre-Restoration Pictures





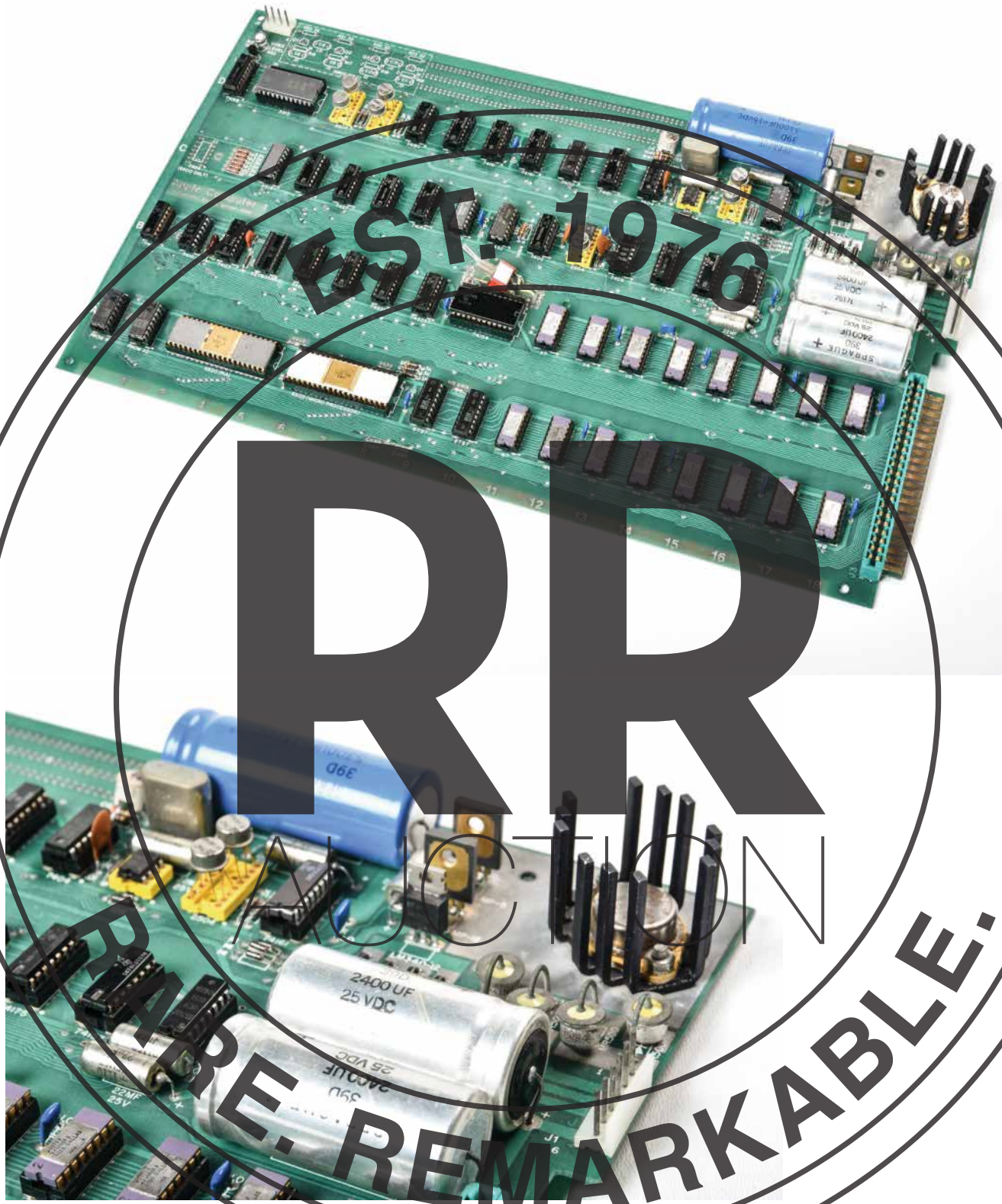
# Restoration Summary and Pictures



On July 5th 2016, the Celebration Apple-1 underwent a complete visual and cosmetic restoration. This restoration included mechanical removal of corrosion and oxidation where possible (i.e. board surface, ICs and sockets). The board was stabilized to remove any potential corrosive agent remnants from the manufacturing process and previous storage conditions.

The missing video adjustment pot was replaced after extensive cleaning and restoration of the PC board area. The video transistor was able to be cleaned so it will not need replacement in the future. It was also noted that the socketed 74166 IC located D1 had a single corroded pin that was corroded beyond repair. The socket which is soldered onto the board is not damaged, so a simple replacement of the IC or a repair to the pin would be required if in the future if the board is brought back to operational condition. It should be noted that this has been a common IC on the Apple-1 that is replaced when bringing back to operational condition for electrical failure reasons. The current electrical state of this IC on the Celebration Apple-1 has not been established.

The wiring on the external power supply was repaired and rendered safe.


EST. 1976
RR
AUCTION
RARE. REMARKABLE.
2400 UF
25 VDC

# “Provenance” updates to the condition report for January 2026

Since the original examination of the Celebration Apple-1 in 2016, new evidence has appeared that adds support to the history of this board. In August 2022, RR Auction sold the only surviving, but severely damaged, prototype “tan” colored Apple-1 board, along with a set of Polaroid photographs of the computer in a working state. The Polaroid photographs were given to Paul Terrell before the “deal” for the first 50 Apple-1 units, which were delivered in July 1976. From this evidence, we can assemble a timeline for board production that explains the “Celebration” Apple-1 in the context of the ByteShop boards that follow the typical PCB release process that Steve Jobs would have been exposed to at Atari.

So we can confirm from evidence that Howard Cantin created the initial layout for the Steve Jobs and Steve Wozniak “hobby computer” and was paid $500 in March 1976. From this layout, at least one “tan” colored test/prototype board was created out of phenolic paper in March 1976 at Ramlor. Creating a test board from phenolic paper was a very inexpensive process compared to a production “green” fiberglass board, but very fragile and not appropriate for a computer board that would be sold to the public, as can be seen in the only surviving example, which is cracked in half. There were errors on this board that had to be corrected to have a working computer. We know this because of the rewiring of the reverse side of the surviving half of the phenolic board when it was examined, and when Michael Ng created a replica of the phenolic board layout based on photographs, the replica required manual rewiring to make the computer work.

After the phenolic board was made operational, Howard Cantin made revisions, and the fiberglass boards could then be produced. We know one thing that makes the Apple-1 production boards unique in 1976 is the fact that there were no post-production “modifications” required for operation on the fiberglass boards. All other generally available personal computers at the time, such as the MITS Altair and Sol-20, required rewiring of the production boards to make them operational.

Here is where we examine the evidence of how the “Celebration” board fits into the timeline. We know that Paul Terrell saw the tan phenolic board operating at the Homebrew Computer Club, which would have been in the April/May timeframe, after the tan board errors were manually fixed, so a working machine could be demonstrated.

The original plan for Apple-1 was not to sell “complete” computers, but to only sell the PC board for $40, with a cost of $20 for each production fiberglass board. So Apple needed to test the final layout before selling the boards. This was before they had a deal

with the Byteshop, where they had to populate 50 boards and cut the net 30-day deal for parts. This was also before Ronald Wayne joined Apple on April 1st.

If there were errors on the green fiberglass boards, Apple would have been required to hand-repair all production boards or have additional fixes done before having the production boards produced.

It should be noted, Apple never sold blank boards for the Apple-1 because of the Byte-Shop deal. All production boards had the board-level components wave soldered by the PCB manufacturer.

Based on the evidence in this document, the "Celebration" board can be considered either production board #0 of the production run, or the pre-production "test" green board, or a final "prototype" before the first 50 ByteShop boards were assembled and sold to the public.

The "Celebration" board was wave-soldered for only the components that were common to have on hand for a PCB board house that does in-shop wave soldering (i.e., sockets and resistors). The rest of the board-level components were soldered by hand. Based on the timing, this would have been done by either Steve Wozniak or Steve Jobs. The regular production run of Apple-1 computers that were sold to the ByteShop had all the board-level components wave-soldered, and only required insertion of ICs into existing sockets, soldering of 3 to 5 jumpers, and 1 or 2 memory selection wires, depending on configuration, performed at the Jobs home.

The sockets used on the "Celebration" board were not the cheaper TI sockets that Jobs would have preferred for a production run. The smaller heatsink, which differs from other Apple-1 computers, when you examine the finish under a microscope, where a standard Apple-1 heatsink would be, does not show any evidence that it ever had the larger heatsink installed, and the non-standard board level components are hand-soldered using different components from the standard Apple-1. For example, the cheaper and more common Sprague silver 39D capacitors that were not computer-rated, but easily available at a radio repair shop.

If this board were part of the actual run of the 1st 50, then the board-level components would be identical with matching wave-soldered as the other ByteShop boards, where Steve Jobs had obtained a net 30 days to purchase the parts to be installed.

Finally, there was a very interesting modification for calibrating the 74123 timing circuit used for memory refresh. There was an error in the Signetics timing diagram for the 74123 documentation used by Steve Wozniak for creating the "memory refresh" signal. This means the Apple-1 is very sensitive to the actual 74123 chip that is used and the specifications of the Dynamic Ram, which requires an almost match between the brand of 74123 and a limited group of RAM chips that would work reliably. Since

the error in the Signetics timing diagram would not have been common knowledge at the time, it makes sense that Jobs and Woz would have tried to figure out what was going on once they populated this new board, and may have had issues that necessitated this modification to understand how to have a reliable board without going back to Howard and having another costly board run.

## Visual Inspection of the Apple-1 board in 2016

The artifact appears to be an original Apple-1 board that was not part of the two known manufacturing runs where the boards were "built". According to Steve Wozniak, co-founder of Apple Computer, no known PCB boards of this type were ever sold to the public so this board appears to be unique from other known Apple-1 boards as described in the rest of this document.

The physical PCB board appears to be consistent with the first run of 100 original Apple-1 boards (pre-NTI). It contains the correct watermarks, finish, thickness and flexibility. The board also has the correct patterning of solder expansion due to the wave soldering of PCBs produced in 1976. The board solder mask and PCB trace patterns are also consistent with an original Apple-1 board.

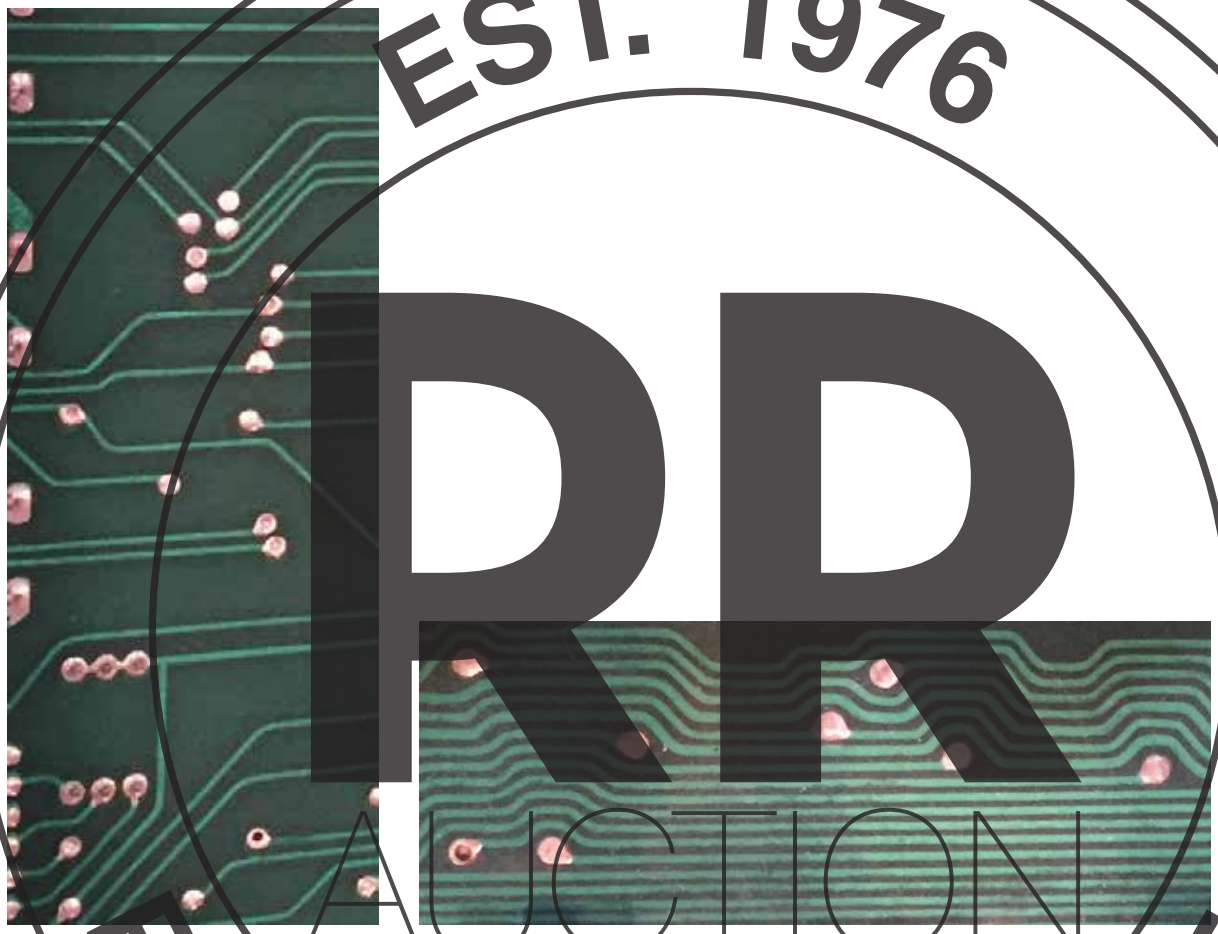
From a visual inspection, most of the discrete components are not consistent with other known Apple-1 boards, but are period correct and appear to be originally installed on this board and not replacements. This board also appears to have been extensively used based upon heat evidence of the board silvering/solder layer in the back regulator area reforming around the screws.

However, there is no evidence of board warpage due to heat, but since the mounting screw holes are undamaged this could suggest the board was never mounted in a case or on standoffs.

It should also be noted that there is some corrosion on the upper areas of the board, as documented in later parts of this report.

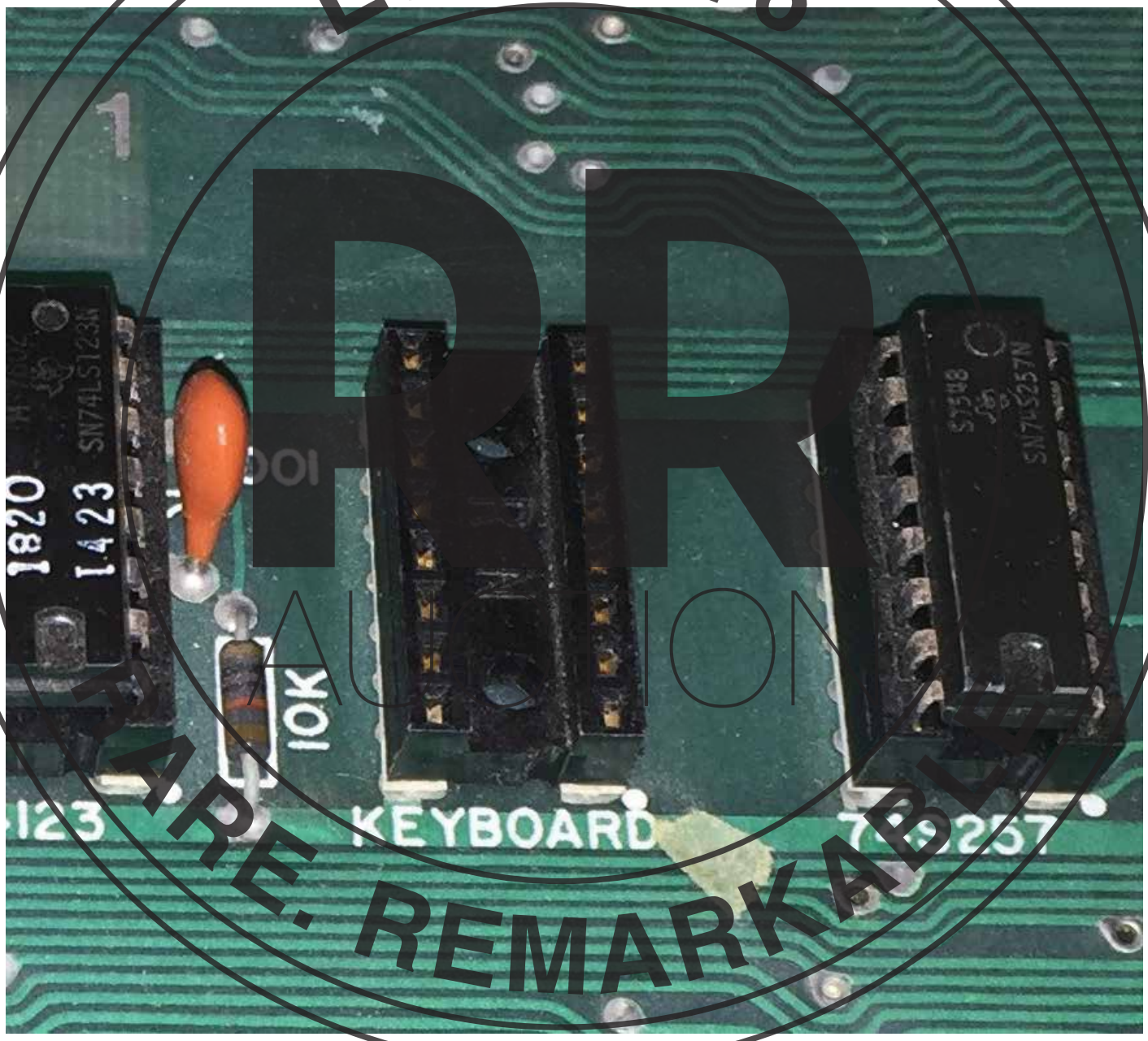
The board also appears to have had some modifications related to either a memory issue or memory experiment. This modification includes a single cleanly cut trace which can be easily repaired, though it is recommended that this modification be kept in place to maintain the boards uniqueness and history.

Note: As with other known Apple-1 units, this board was wave soldered as determined by the solder pattern on the vias, which is difficult, if not impossible, to reproduce by hand. The enigma of this board is that there are many discrepancies between the two known production board runs of the Apple-1, for example, on this unit, only IC sockets, resistors, and non-electrolytic capacitors were wave-soldered.



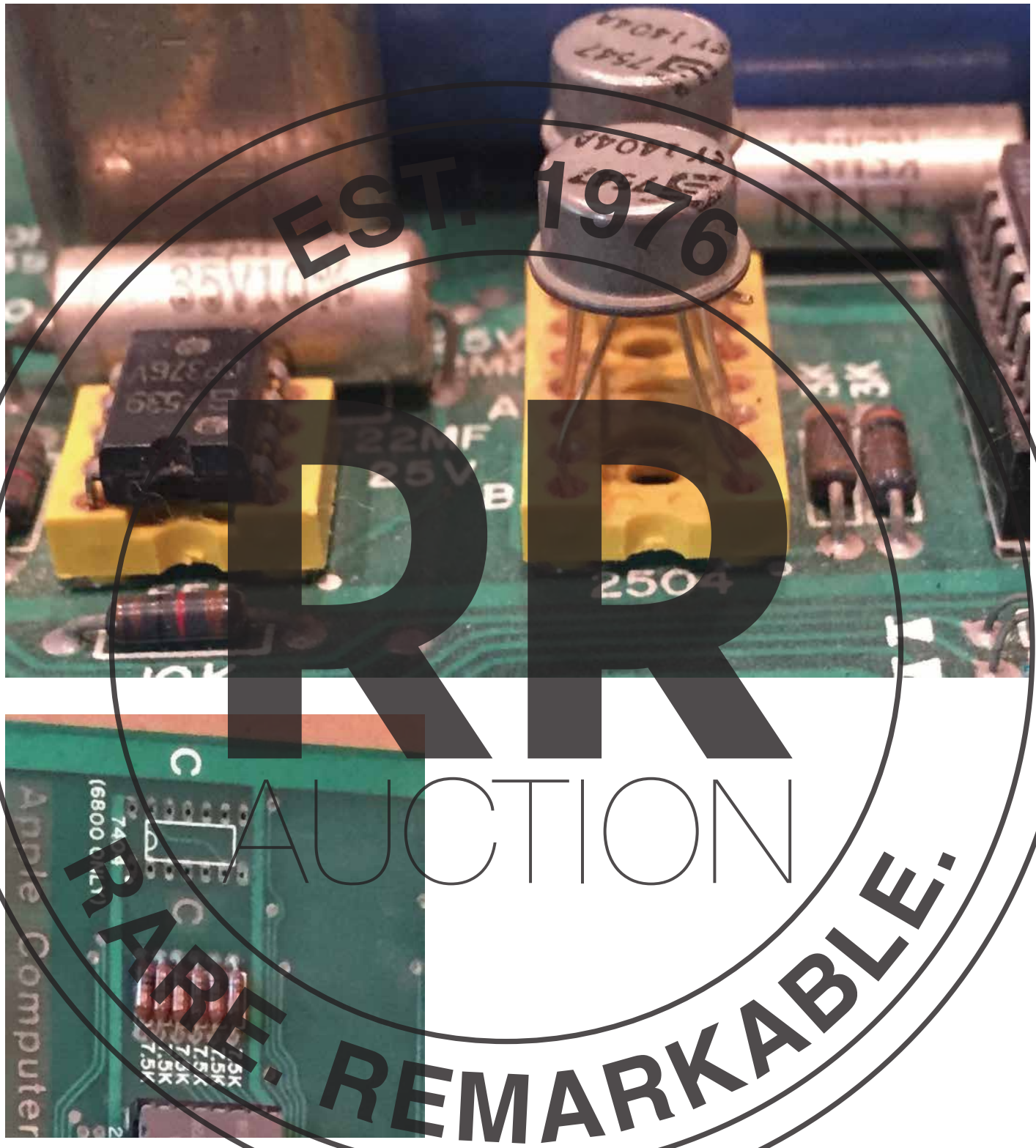
**Sockets**

This board was populated with Robinson Nugent sockets, which are wave soldered in. There does not appear to have been a mass replacement of sockets; this indicates the board may not have been assembled at the same time as other production Apple-1 boards. All other known units were wave soldered with TI sockets in bulk by the two PCB manufacturers for Apple. Additionally, the 7404 socket at C1 never appears to have had a socket installed. There are no signs of desoldering or removal of a socket at C1. Note: Some chips do have a single hand-soldered pin, but this appears to have been done as part of a troubleshooting exercise and is typical of point-to-point jumper wires.






The 8 pin socket for 555 and 16 pin sockets used for dual 8 pin shift registers/clock generator have been populated by yellow sockets. Manufacturer undetermined. These also appear to have been wave soldered. Additionally, many resistors do not appear to be the same type as typical Apple-1 but do appear to be wave soldered.



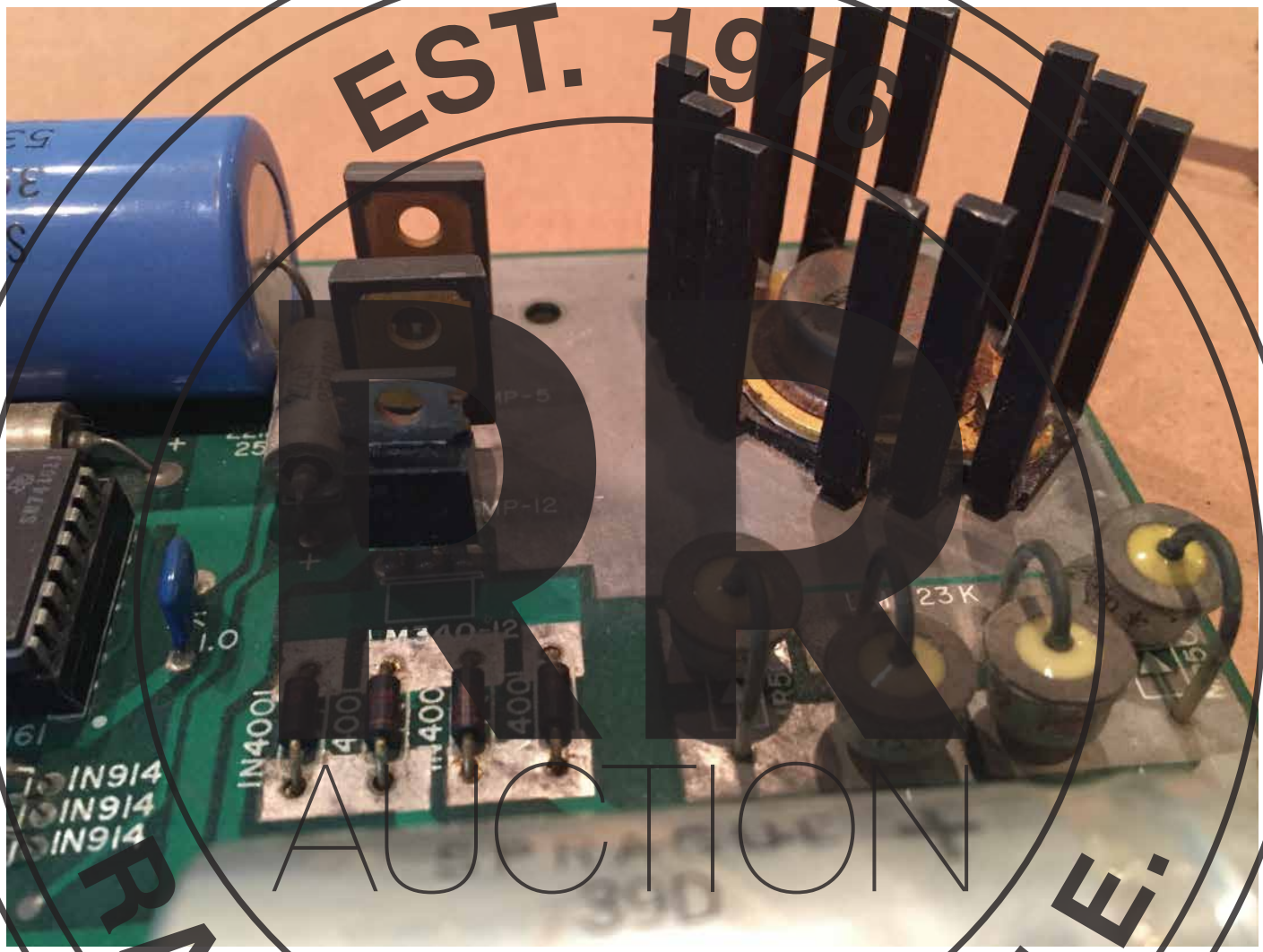


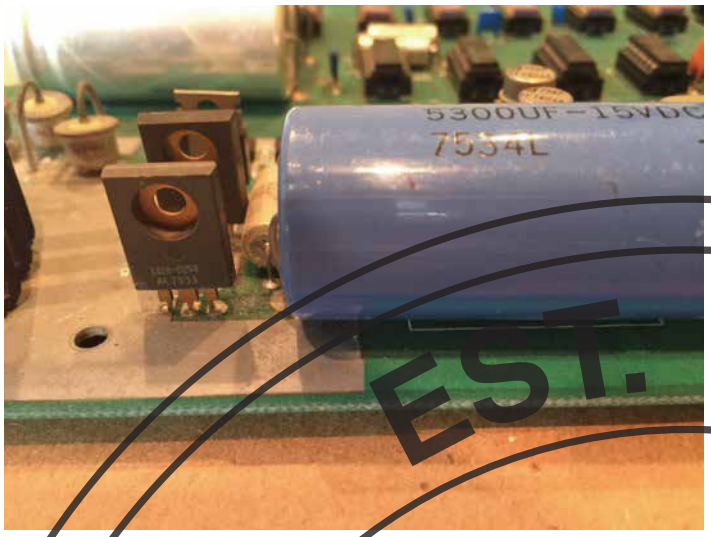

**Regulators and Capacitors**

-5v and -12v regulator are different than other known Apple-1 and do not appear replaced. Additionally, the LM323k is installed using different screws oriented upside down with an undersized heat sink. All four regulators do not visibly appear replaced

and the pad where the LM323k and heat sink are installed show no visible signs of having a previous heat sink installed (note: the unit at the Computer History Museum in Mountainview, CA which is missing the heat sink has signs there was a heat sink, this unit does not have markings of the larger heat sink)

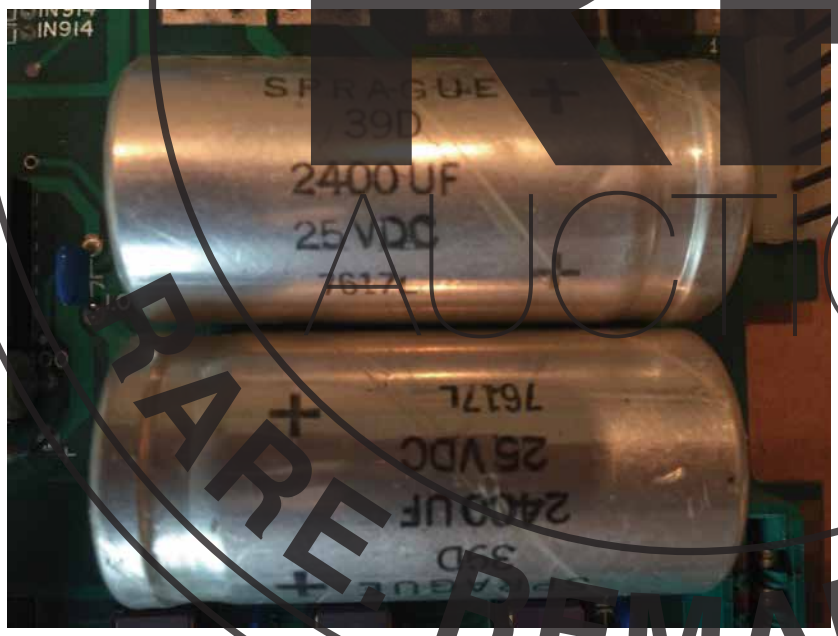
Note: The supply diodes are inconsistent with all other known Apple-1 boards.





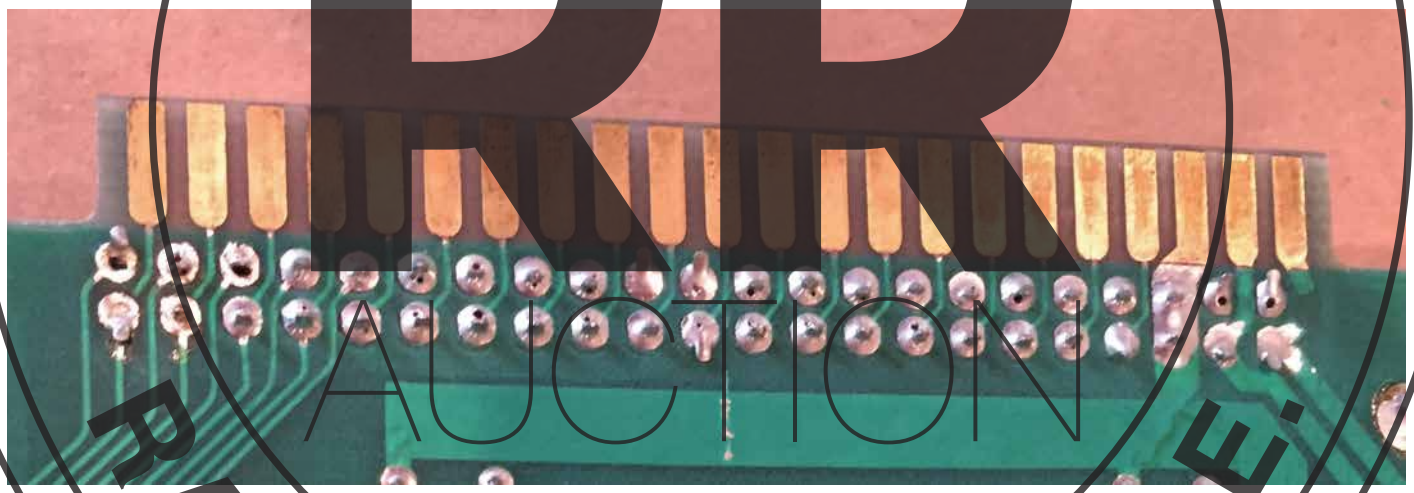

Note: the date code on the above 5300uf Sprague cap is consistent with some NTI boards. The date codes on the regulator are 1975 Motorola units, which is different than all other Apple-1 units, but consistent with the time frame the board may have been assembled.

The two 2400uf caps are silver Sprague 39d dated 7617. Typically, the Apple-1 uses Sprague blue 39d capacitors, which are computer-rated. There does not appear to be any clear sign that these have been swapped out for the silver units, so it is plausible these were originally installed when the board was first assembled.



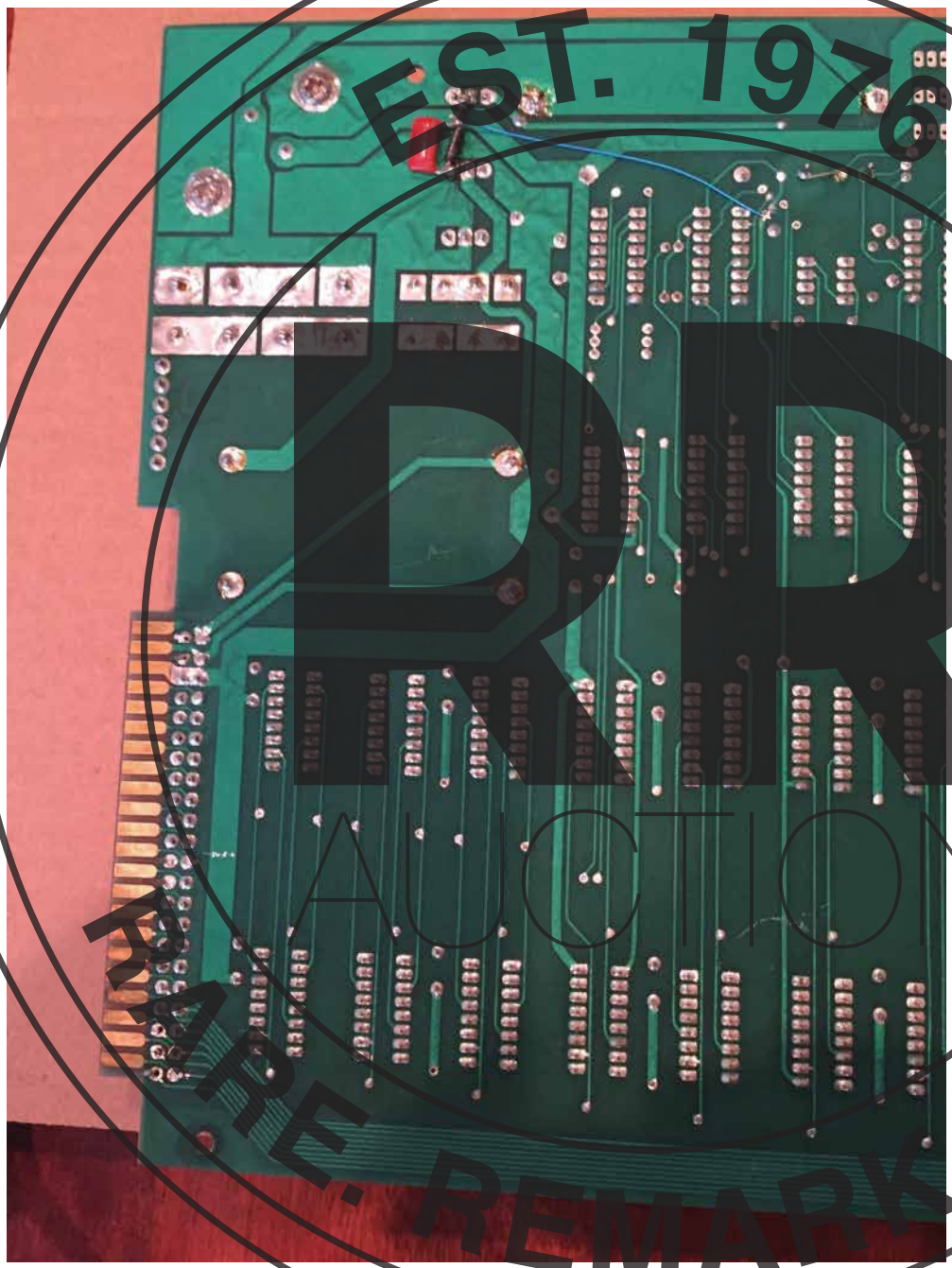
Smaller electrolytic caps on board are of a type not seen on other known Apple-1 boards as are the ceramic decoupling caps.

Edge connector part number is inconsistent with all known Apple-1s and appears to have been hand-soldered and has a date code of 1975. Note: the bent pins to hold the unit in place were soldered by hand, while the board had the reverse side up, unlike the production boards, which were installed as part of the wave-soldering process with gravity holding the edge connector against the board.

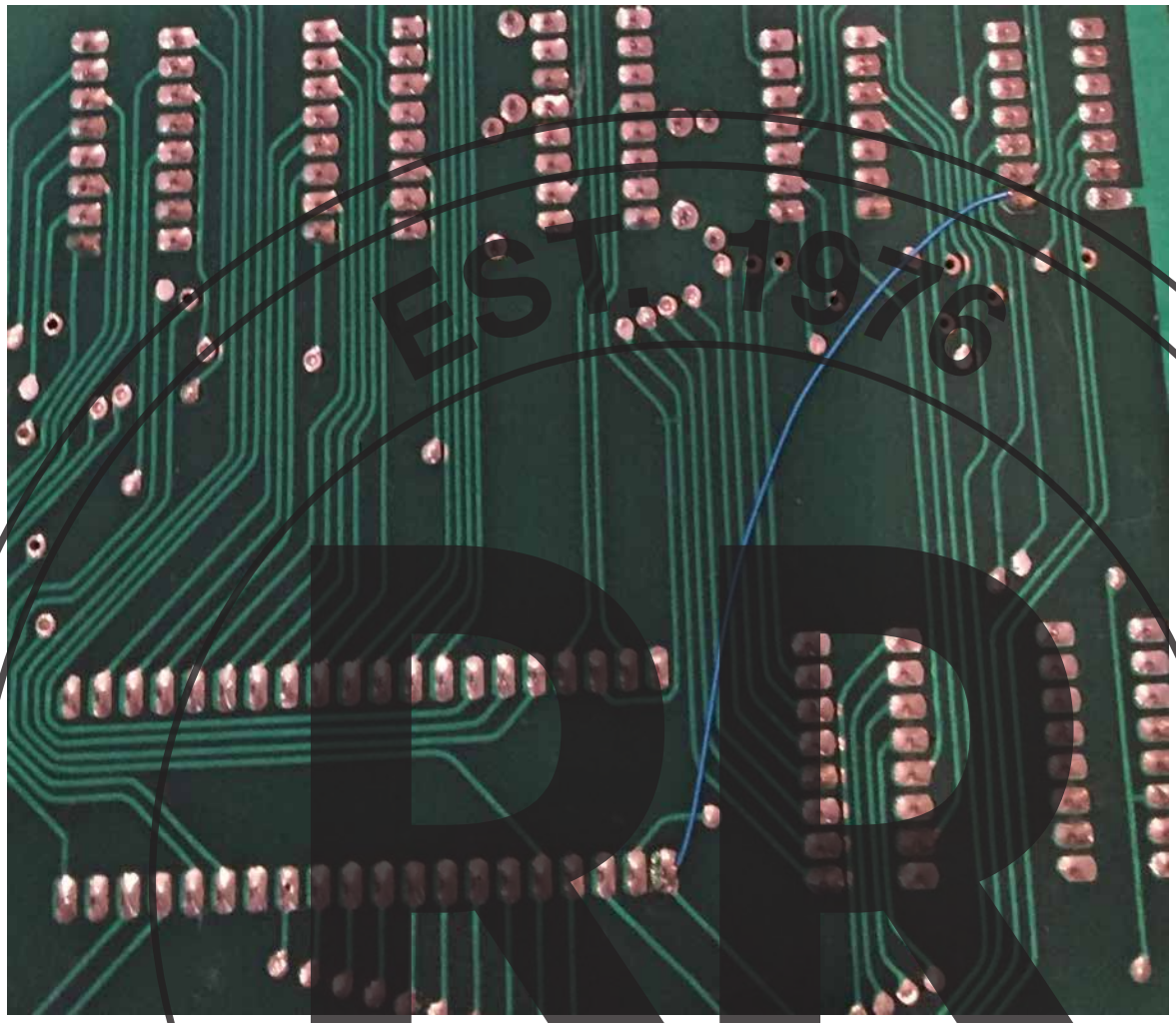
***Modifications on the board done after wave soldering***

(Modifications/Jumper on rear of board)
-5V modification for cleaner power to ram chips. Single cut trace near the connection between pin 4 of 2504A D14 and the trace to w5 & X5 trace for pin 1.

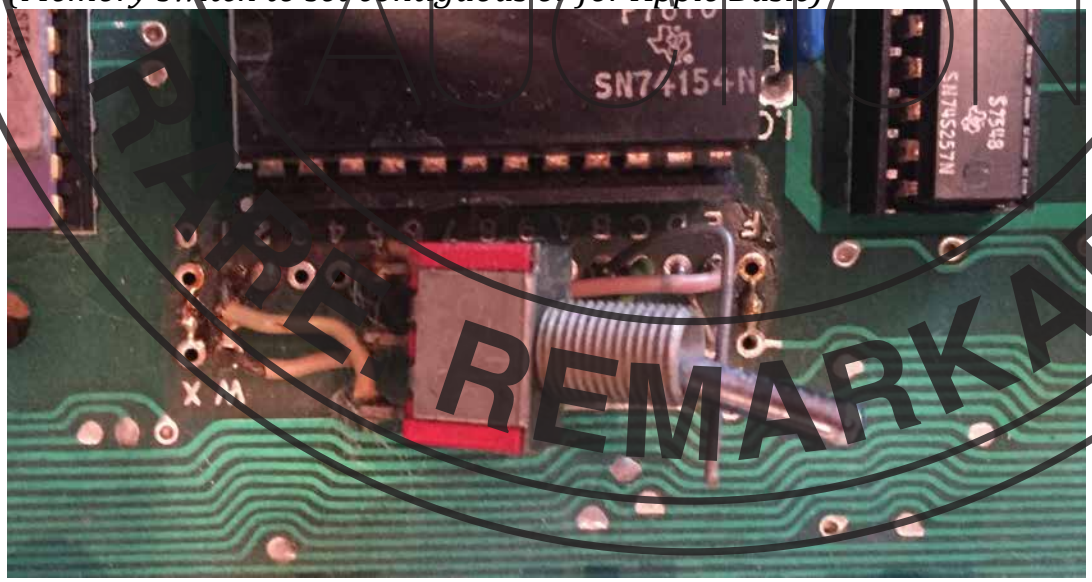


Note: As mentioned earlier in this document, note the screws above in the upper corner used to secure the regulator are reversed and "welded" in by the solder layer underneath the green coat which has reformed around the screw head.

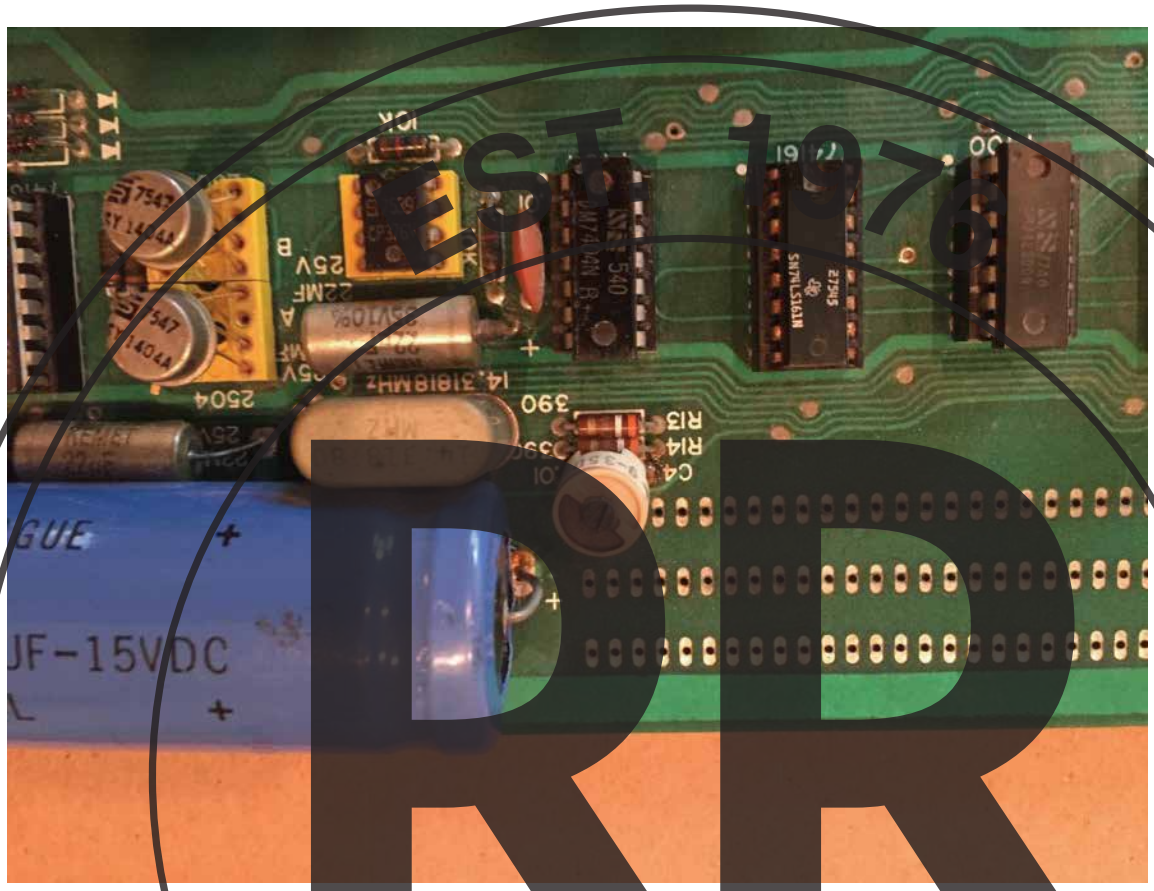
Modification for for r/w signal for, pin 21 6820 to B1 pin1



*(Memory switch to set contiguous or for Apple Basic)*



From the visual inspection it appears that the Capacitor C4 has been replaced with a variable capacitor (Erie 9-350) and so has the 14.31818Mhz crystal with a larger unit. The change to a larger package crystal unit necessitated a small hole being drilled in the board and tied underneath to the correct pad.

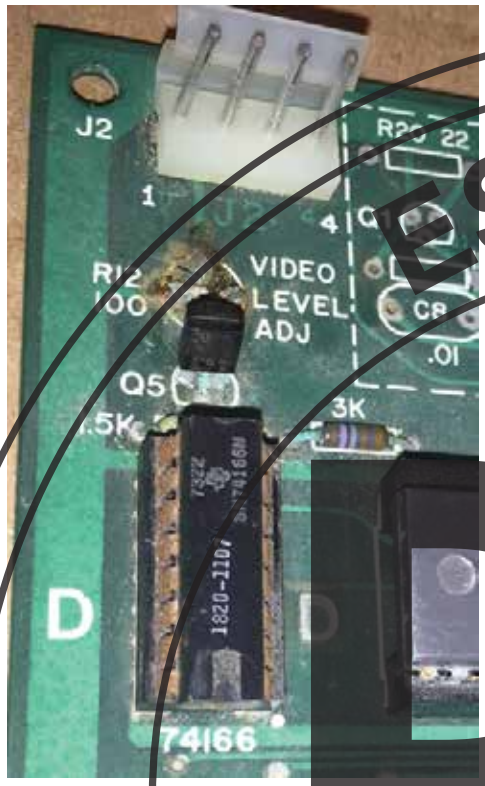



*(replaced capacitor C4 and crystal)*

Details on IC components are later in this document.

**Corrosion/Damage on board**

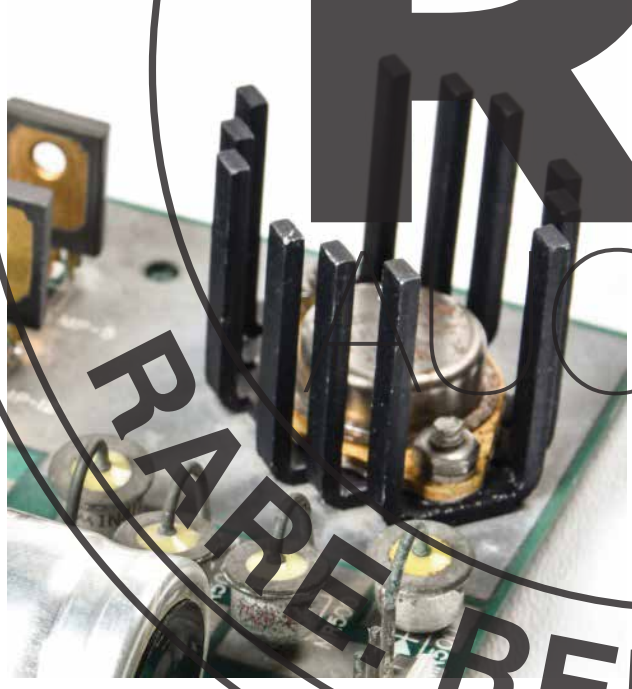
Note: Many of the ICs are Texas Instruments and have corrosion, which has be corrected during the restoration in 2016.




*(missing video pot and corrosion on the video transistor)*

(Replaced video pot from cosmetic restoration in July 2016)

(LM323k regulator has rust/corrosion, note the undersized and non-standard heat sink)



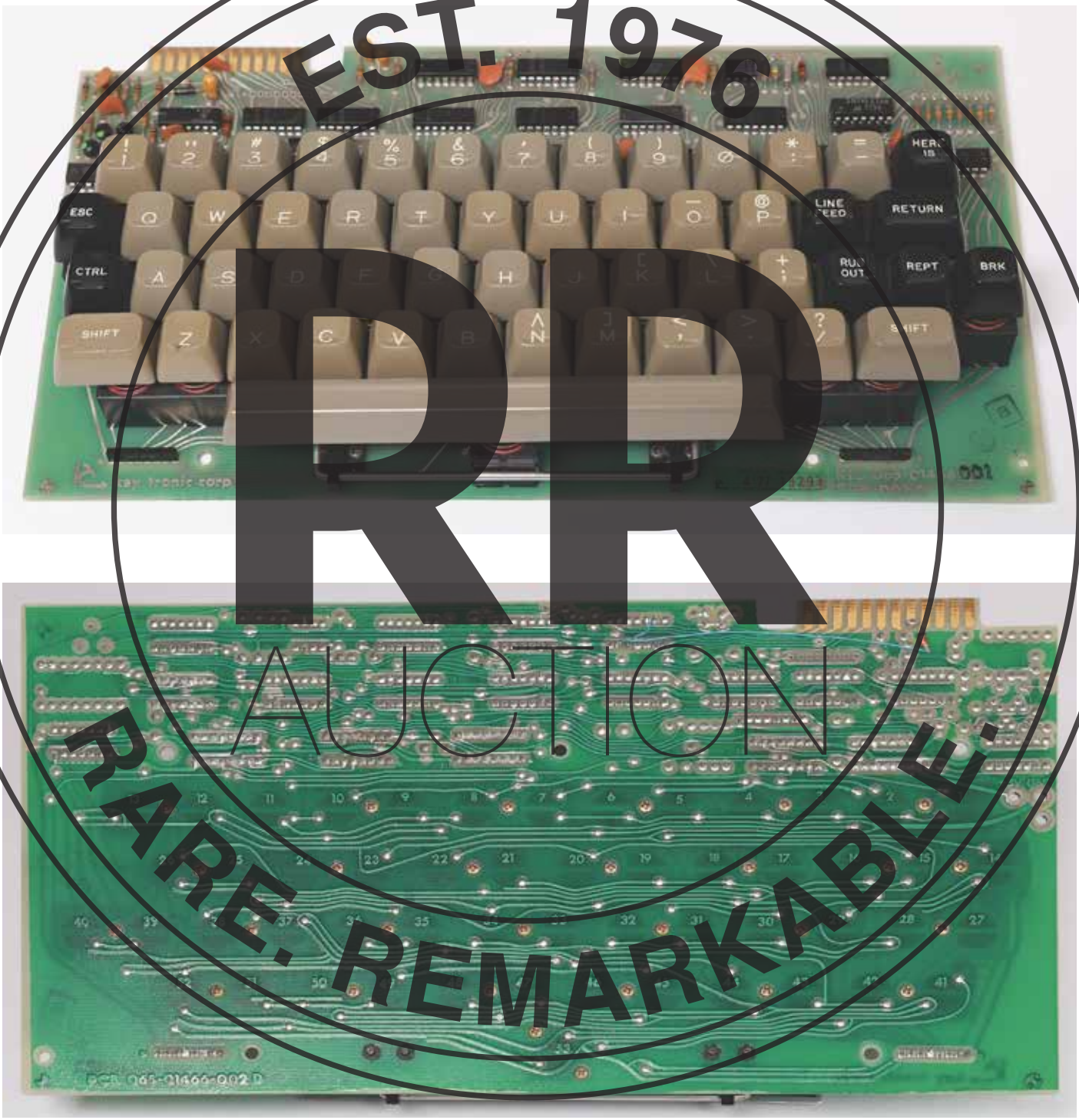
(Photograph of LM323k regulator after partial mechanical removal of loose corrosion during cosmetic restoration July 2016. Note it is not recommended to remove any further corrosion to prevent damage to the regulator.)

# Included Apple-1 support accessories

- Vintage, period-correct KeyTronic keyboard (c. 1977)
- Vintage, period-correct power supply
- Vintage Sony TV set
- Keyboard and period correct video to TV modulator for Apple-1
- Replica Apple-1 Operation Manual, signed in blue felt tip by Steve Wozniak
- Replica Apple-1 schematic, signed in blue felt tip by Steve Wozniak

## Vintage, period-correct KeyTronic keyboard (c. 1977)

KeyTronic model KTC 065-01466-001 period correct ASCII keyboard compatible with the Apple-1 computer. PCB revision is 002-D. The keyboard is dated April 1977 and marked as serial number 18293



## Vintage, period-correct power supply

Period-correct power supply for Apple-1 with Radio Shack (Archer) power transformers. Transformers are marked as 25.2V and 16V. Power supply is mounted on a small plywood base for display and safety purposes. Plywood base and hardware are not period.

## Vintage Sony TV set

Period-correct Sony TV-112 Black and White television

## Keyboard and period correct video to TV modulator for Apple-1

Apple-1 specific wired KeyTronic keyboard cable with orientation marking (top and pin 1 dot) for connecting Apple-1 to the included KeyTronic keyboard.

Period-correct video modulator wired for Apple-1 video for connecting Apple-1 to the included Sony TV.

**Replica Apple-1 Operation Manual, signed in blue felt tip by Steve Wozniak**

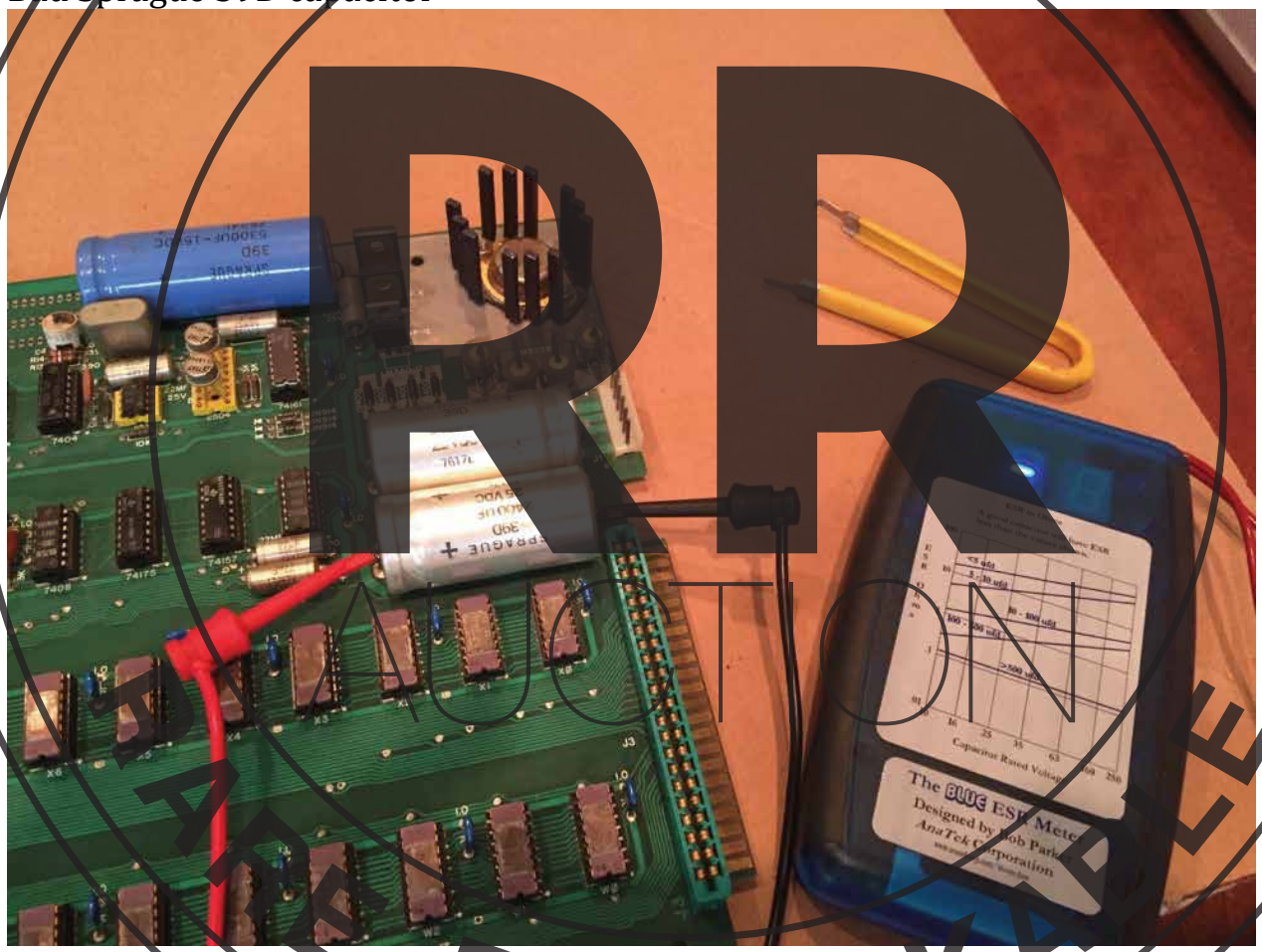
**Replica Apple-1 schematic, signed in blue felt tip by Steve Wozniak**

# Electrical inspection of Apple-1 discrete components.

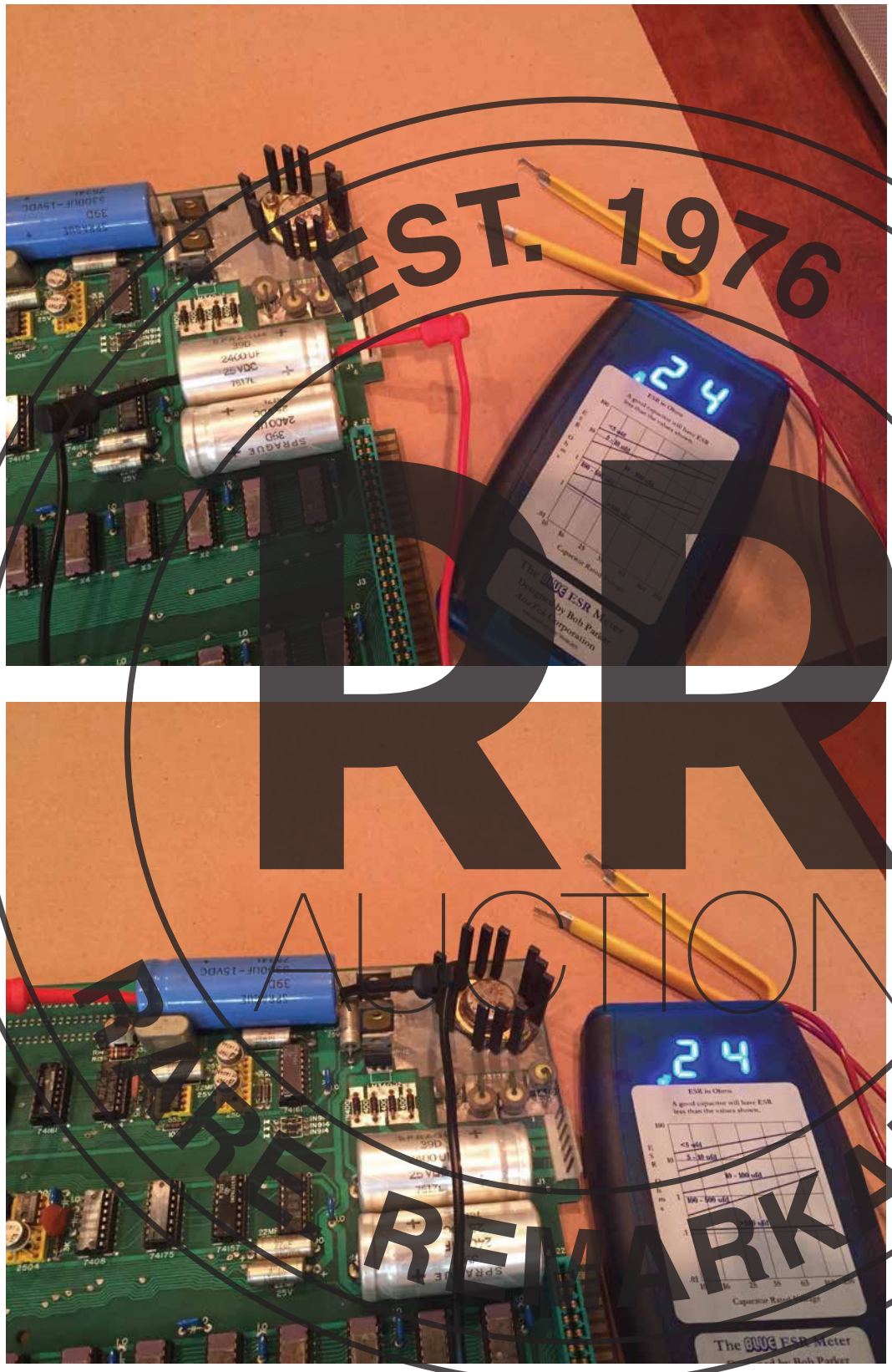
All electrolytic capacitors were tested for shorts and ESR.
Diodes were checked for electrical properties.

- Diode at location mr500 #1 and #4 needs replacement due to failure in testing. This board is currently using 1n4722 diodes
- Diode #2 of 1n914 needs replacement due to failure in testing.
- Sprague 39D 2400uf 25v cap lower, needs replacement

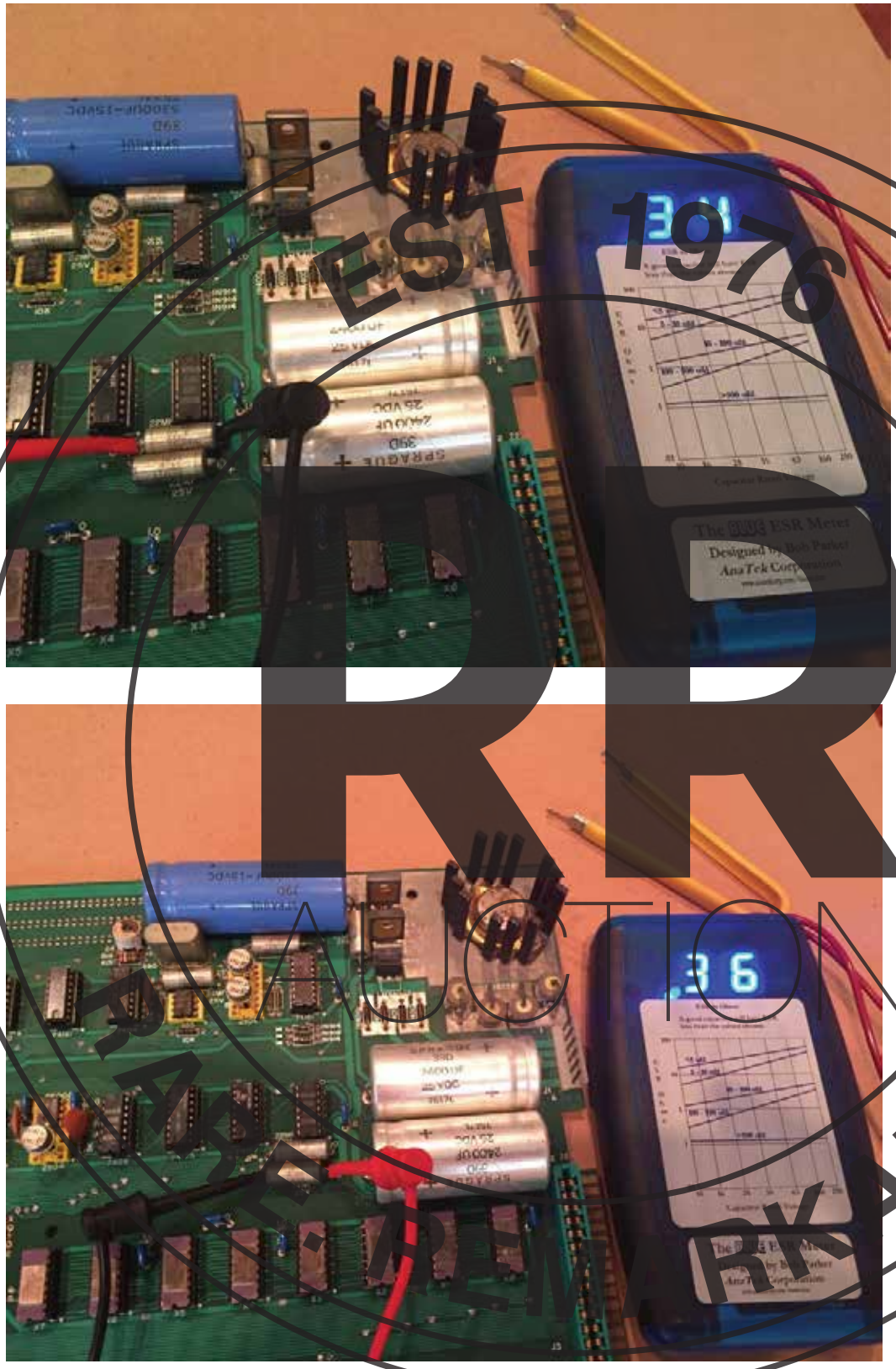
Bad Sprague 39D capacitor

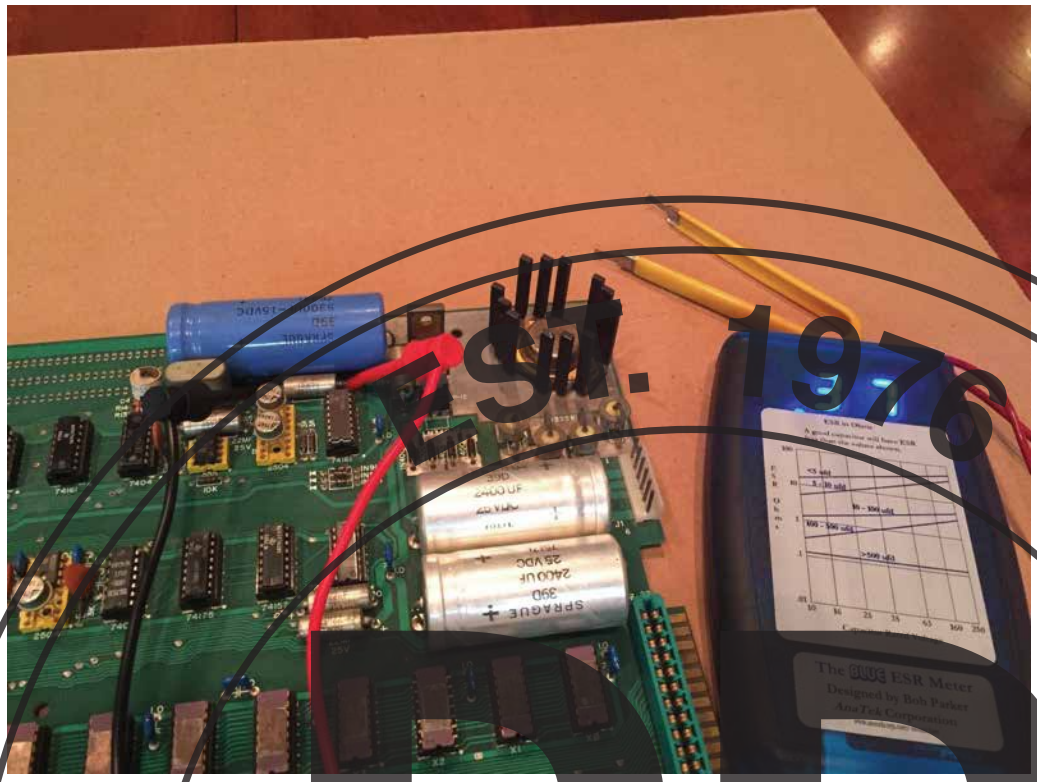


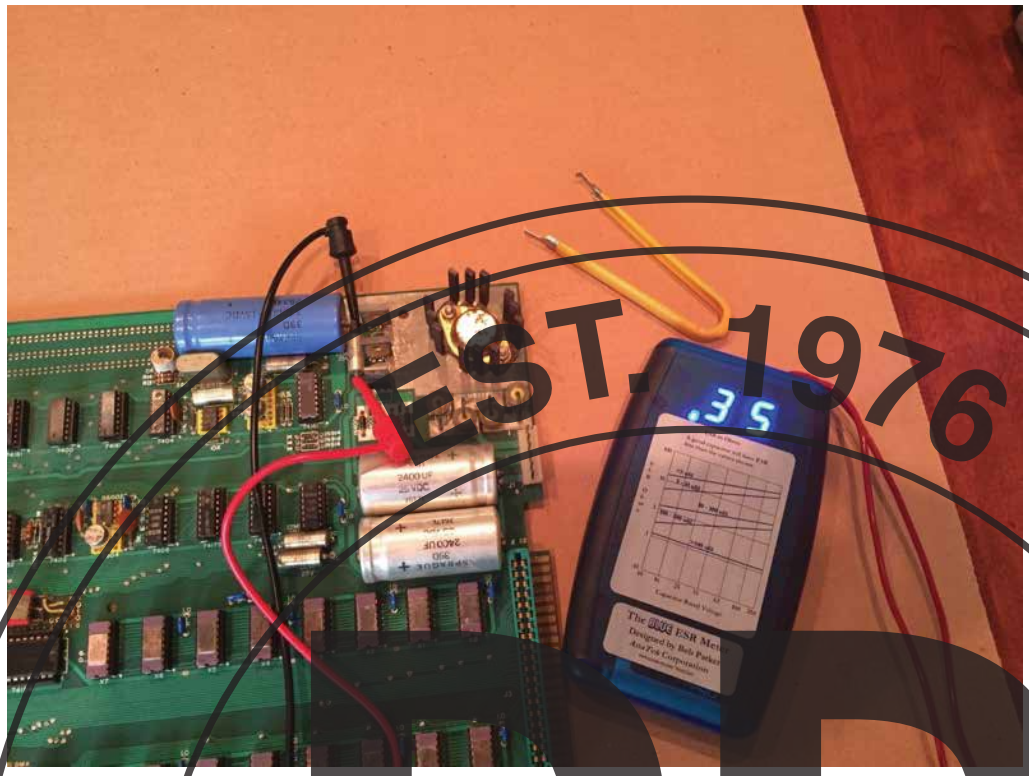
In-spec Sprague 39D capacitors



All smaller electrolytic capacitors were within spec for size.







# Summary of the socketed components

| Location | Part Label (Bd) | Part # | Mfg | Date Code | Comments |
|---|---|---|---|---|---|
| **A1** | PROM A1 | 6301-IJ | MMI | 7610 | Note: Not labeled Apple A1 |
| **A2** | PROM A2 | 6301-IJ | MMI | 7610 | Note: Not labeled Apple A2 |
| **A4** | 6820 | XC6820 | Motorola | 7511A | |
| **A7** | 6502 | MCS 6502 | MOS | 3775 | Gold-Topped Ceramic |
| **A9** | 8T97 | DM8097M | NatSemi | 511 | |
| **A10** | 8T97 | DM8097M | NatSemi | 511 | |
| **A11** | W7 | MK4096P-3 | Mostek | 7451 | |
| **A12** | W6 | MK4096P-3 | Mostek | 7451 | |
| **A13** | W5 | MK4096P-3 | Mostek | 7451 | |
| **A14** | W4 | MK4096P-3 | Mostek | 7451 | |
| **A15** | W3 | MK4096P-3 | Mostek | 7451 | |
| **A16** | W2 | MK4096P-3 | Mostek | 7451 | |
| **A17** | W1 | MK4096P-3 | Mostek | 7451 | |
| **A18** | W0 | MK4096P-3 | Mostek | 7451 | |
| **B1** | 7400 | SN74LS00N | TI | 7515 | |
| **B2** | 7410 | 1820-1202 | Signetics | 7608 | |
| **B3** | 74123 | SN74LS123 | TI | 7602 | |
| **B4** | Keyboard | | | | Header in Socket |
| **B5** | 74S257 | SN74S257N | TI | 7548 | |
| **B6** | 74S257 | SN74S257N | TI | 7548 | |
| **B7** | 74S257 | SN74S257N | TI | 7548 | |
| **B8** | 74S257 | SN74S257N | TI | 7548 | |
| **B9** | 74154 | SN74154N | TI | 7610 | |
| **B11** | X7 | MK4096P-3 | Mostek | 7451 | |
| **B12** | X6 | MK4096P-3 | Mostek | 7451 | |
| **B13** | X5 | MK4096P-3 | Mostek | 7451 | |
| **B14** | X4 | MK4096P-3 | Mostek | 7451 | |
| **B15** | X3 | MK4096P-3 | Mostek | 7451 | |
| **B16** | X2 | MK4096P-3 | Mostek | 7451 | |

| Location | Part Label (Bd) | Part # | Mfg | Date Code | Comments |
|---|---|---|---|---|---|
| **B17** | X1 | MK4096P-3 | Mostek | 7451 | |
| **B18** | X0 | MK4096P-3 | Mostek | 7451 | |
| **C1** | 7404 | | | | No Socket |
| **C3** | 2519 | 2519B | Signetics | 7240 | |
| **C4** | 74157 | SN74LS157N | TI | 7523 | |
| **C5** | 7427 | SN74LS27N | TI | 7545 | |
| **C6** | 7410 | SN74LS10N | TI | 7532 | |
| **C7** | 74174 | SN74LS174N | TI | 7541 | |
| **C8** | 7450 | 9N50/7450 | TI | 7121 | |
| **C9** | 7432 | 9LS/F74LS32DC | Fairchild | 7543 | |
| **C10** | 7402 | SN7402N | Signetics | 7514 | |
| **C11A** | DS0025 | MH0025CN | National | 317 | |
| **C11B** | 2504 | SY1404A | Signetics | 7547 | Can version of shift register |
| **C12** | 7408 | N7408A | Signetics | 7538 | |
| **C13** | 74175 | SN74LS175N | TI | 7545 | |
| **C14** | 74157 | SN74LS157N | TI | 7523 | |
| **C15** | 7400 | N7400A | Signetics | 7612 | |
| **D1** | 74166 | SN74166N | TI | 7322 | |
| **D2** | 2513 | 2513N | Signetics | 7607 | |
| **D4A** | 2504 | SY1404A | Signetics | ???? | Can version. Print worn off |
| **D4B** | 2504 | SY1404A | Signetics | ???? | Can version. Print worn off |
| **D5A** | 2504 | SY1404A | Signetics | 7547 | Can version of shift register |
| **D5B** | 2504 | SY1404A | Signetics | 7547 | Can version of shift register |
| **D6** | 74160 | SN74LS160N | TI | 7545 | |
| **D7** | 74161 | SN74LS161N | TI | 7545 | |
| **D8** | 74161 | SN74LS161N | Fairchild | 7545 | |
| **D9** | 74161 | SN74LS161N | Fairchild | 7545 | |
| **D10** | 7400 | DM74LS00N | NatSemi | 740 | |
| **D11** | 74161 | SN74LS161N | TI | 7545 | |
| **D12** | 7404 | DM7404N | NatSemi | 540 | |

| Location | Part Label (Bd) | Part # | Mfg | Date Code | Comments |
|---|---|---|---|---|---|
| **D13** | 555 | CP376V | Signetics | 7539 | |
| **D14A** | 2504 | SY1404A | Signetics | 7547 | |
| **D14B** | 2504 | SY1404A | Signetics | 7547 | |
| **D15** | 74161 | SN74161J | TI | 7832 | Does not match any other IC package, is replacement IC |
| **39D Capacitor (top)** | 5300uf 15v | Blue 39D 5300uf 15V | Sprague | 7534 | |
| **39D Capacitor (upper)** | 2400uf 25V | Silver 39D 2400uf 25VDC | Sprague | 7617 | |
| **39D Capacitor (lower)** | 2400uf 25V | Silver 39D 2400uf 25VDC | Sprague | 7617 | |
| **5V regulator** | LM323K | Gold LM323K | NatSemi | 5xx | Corrosion obscures date |
| **-5V regulator** | LM320MP 5 | I826-0294 | Motorola | 7525 | |
| **12V regulator** | LM340MP 12 | ------ | Motorola | ---- | Obscured |
| **-12V regulator** | LM340-12 | 7812 | Fairchild | ---- | Date code worn off |

I hereby certify that the above description of work performed is accurate and true.

Corey Cohen
34 Stratton Road
Matawan NJ 07747
corey@myapplecomputer.net

STATE OF NEW JERSEY }

}

COUNTY OF _____ }

On this ____ day of _____, 2026 before me _____ (notary public), personally appeared (print name), who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of New Jersey that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____ (notary public)

(NOTARY SEAL)



**ATTENTION NOTARY: Although the information requested below is OPTIONAL, it could prevent fraudulent attachment of this certificate to another document.**

THIS CERTIFICATE **MUST** BE ATTACHED TO THE DOCUMENT DESCRIBED BELOW.

Title of Document Type:

_____

Number of Pages: 37 Date of Document January 5th 2026