A problem has been detected and Windows has been shut down to prevent damage
to your computer.

UNMOUNTABLE_BOOT_VOLUME

If this is the first time you've seen this error screen,
restart your computer. If this screen appears again, follow
these steps:

Check to make sure any new hardware or software is properly installed.
If this is a new installation, ask your hardware or software manufacturer
for any Windows updates you might need.

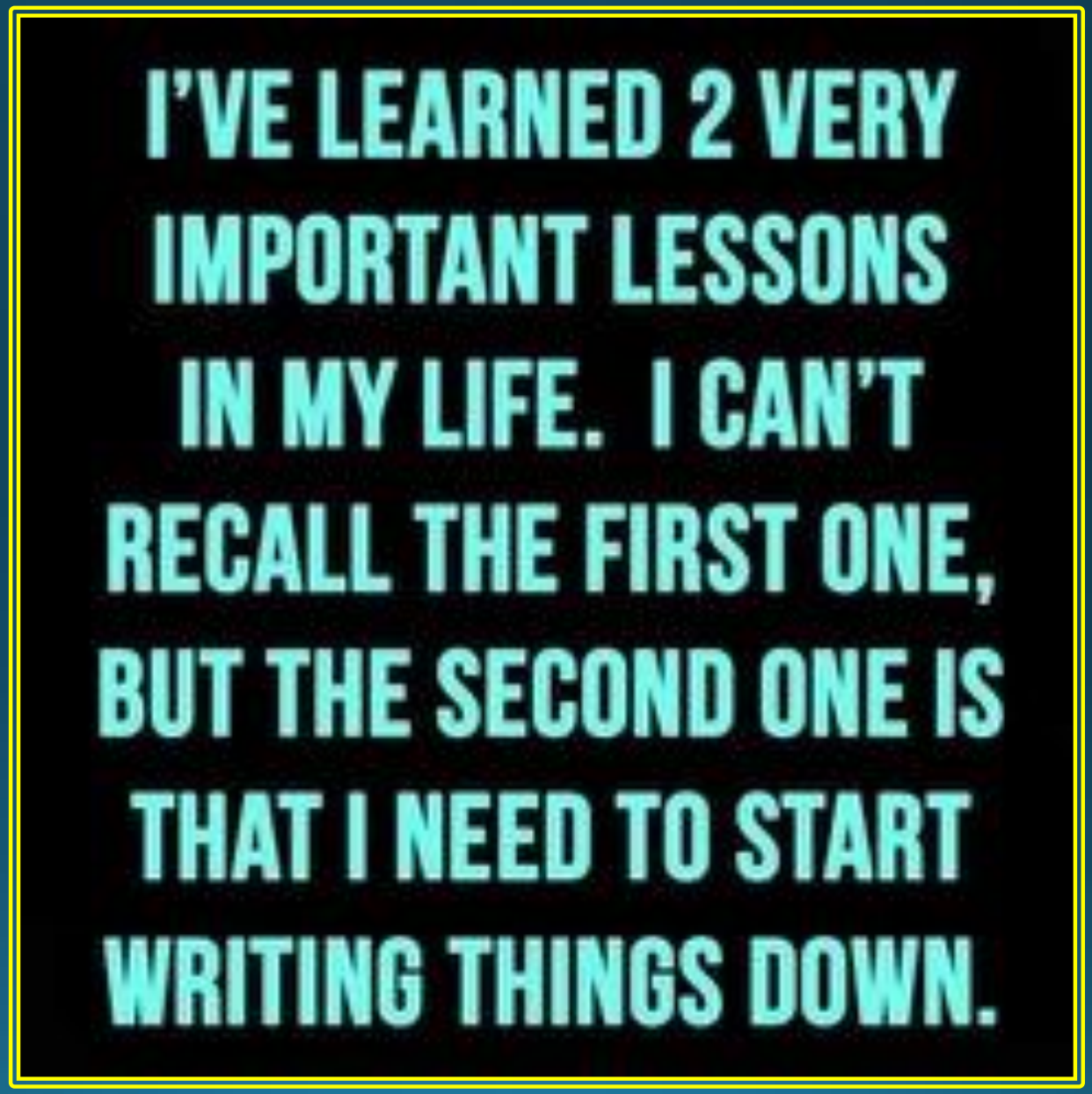
If problems continue, disable or remove any newly installed hardware
or software. Disable BIOS memory options such as caching or shadowing.
If you need to use Safe Mode to remove or disable components, restart
your computer, press F8 to select Advanced Startup Options, and then
select Safe Mode.

Technical Information:

*** STOP: 0x000000ED (0x80F128D0, 0xc000009c, 0x00000000, 0x00000000)

Note to self:

Press the right arrow key.



The year is 1979.

I want to program, print the results and record my programs using a *portable* scientific hand held calculator.

At HP there are these, and they print but do not have external storeage ability.

Of course there are these, they have external storage but don’t print.

Let's not forget the Woodstock (1977) or Spice (1979) families.

Programmable but no printing or external storage.

If you could afford it, you could grab the HP97 (Titan)!

It does satisfy the storage, printing and programming requirements mentioned earlier.

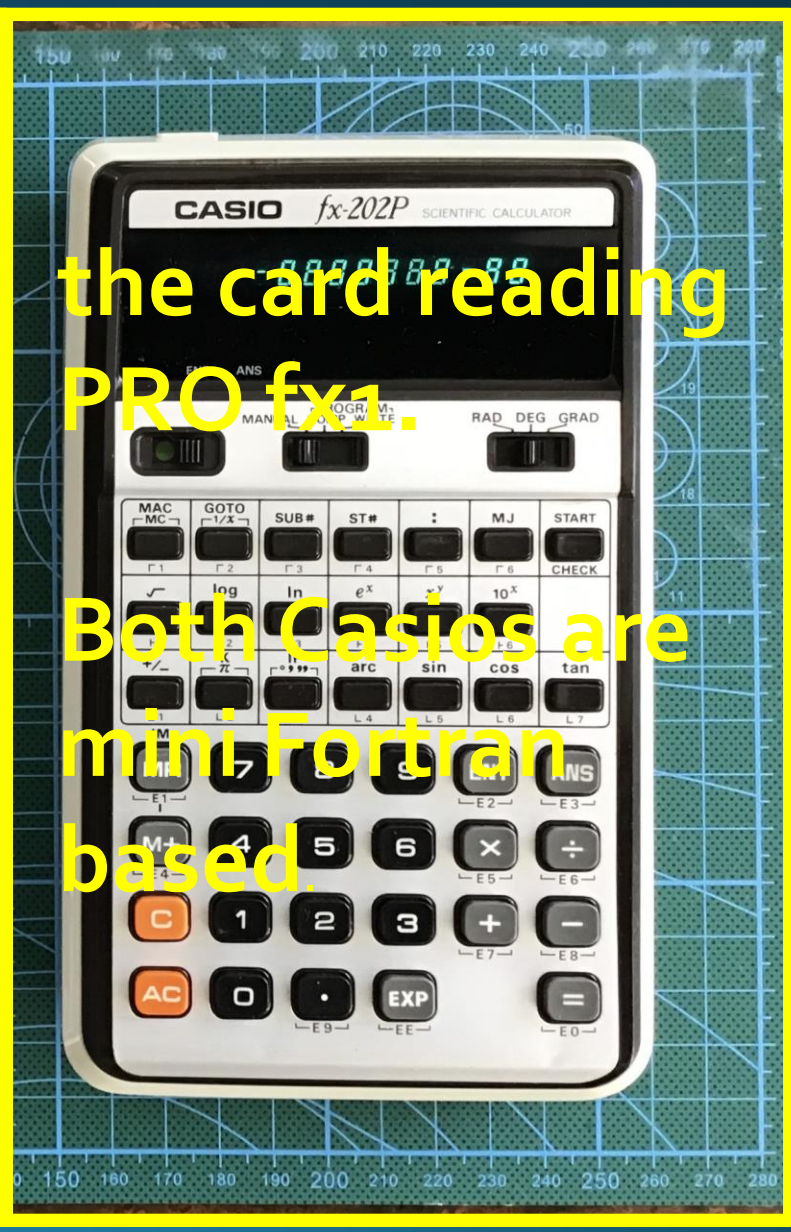
Only $750.00 in 1976 ($4,778.00 today (2024)).

The above is a non RPN statement, note the brackets ☺

This had just hit the market, but the printer was external.

What a computer!

What about other manufactures, what did they provide?



the card reading PRO fx1.

Both Casios are mini-fortran based.

How about Sharp?

Well this is sharp!

Apparently, so is this!

The Best Budget Carving Knife

Why Women are Attracted To Well Dressed Men

August 4, 2023

The allure of a well-dressed man has captivated women for ages, and the reasons behind this preference are as diverse as the individuals who hold it. A sharp-dressed man exudes a magnetic charm that goes beyond just appearances. From confidence and attention to detail to cultural and evolutionary factors, there are numerous explanations for why women find a man with impeccable style incredibly appealing.

Confidence and Self-Assurance: A man who takes the time to dress well exhibits a level of confidence and self-assurance that can be irresistibly attractive to women. A sharp-dressed man often exudes a sense of pride in his appearance, which can translate into how he carries himself and interacts with others. This confidence signals to women that he knows who he is and is comfortable in his own skin, making him an intriguing and secure partner.

Attention to Detail: Putting effort into dressing well demonstrates an attention to detail that can be alluring to women.

A bespoke suit will make you feel confident

Forget those,

Now this is really SHARP!


SHARP
ELSI MATE
PC-1300S
SHARP POCKET COMPUTER
A B C X Y
HELLO HHC2024
MAGNETIC CARD
CAP
PRO
AUT
DEF
DEG
RAD
GRAD

PYTHAGORAS and the PC-1300S

But why Pythagoras and what is a PC-1300s you may ask, well that's the subject of the talk!

Just the facts ma'am…

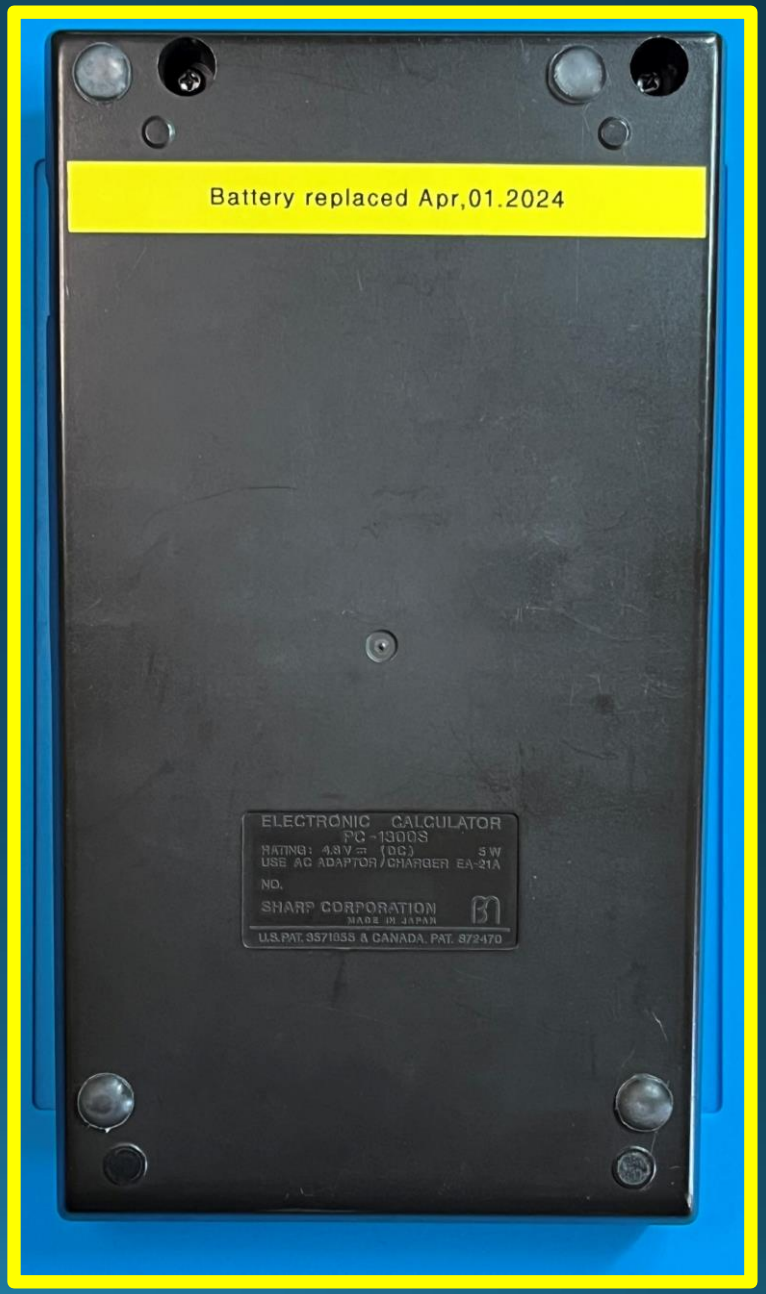
- Introduced in 1979 as the PC-1300.
- Memory increased in 1980 and called the PC-1300s.
- Vacumn Florescent Display (VFD).
- Almost double the weight of an HP 19C.
- 42 data registers and 640 steps (more on that later).
- Card reader.
- Printer.
- Mini FORTRAN with similarities to BASIC.
- 10 digit, but π is twelve digits!

And nothing but the facts!

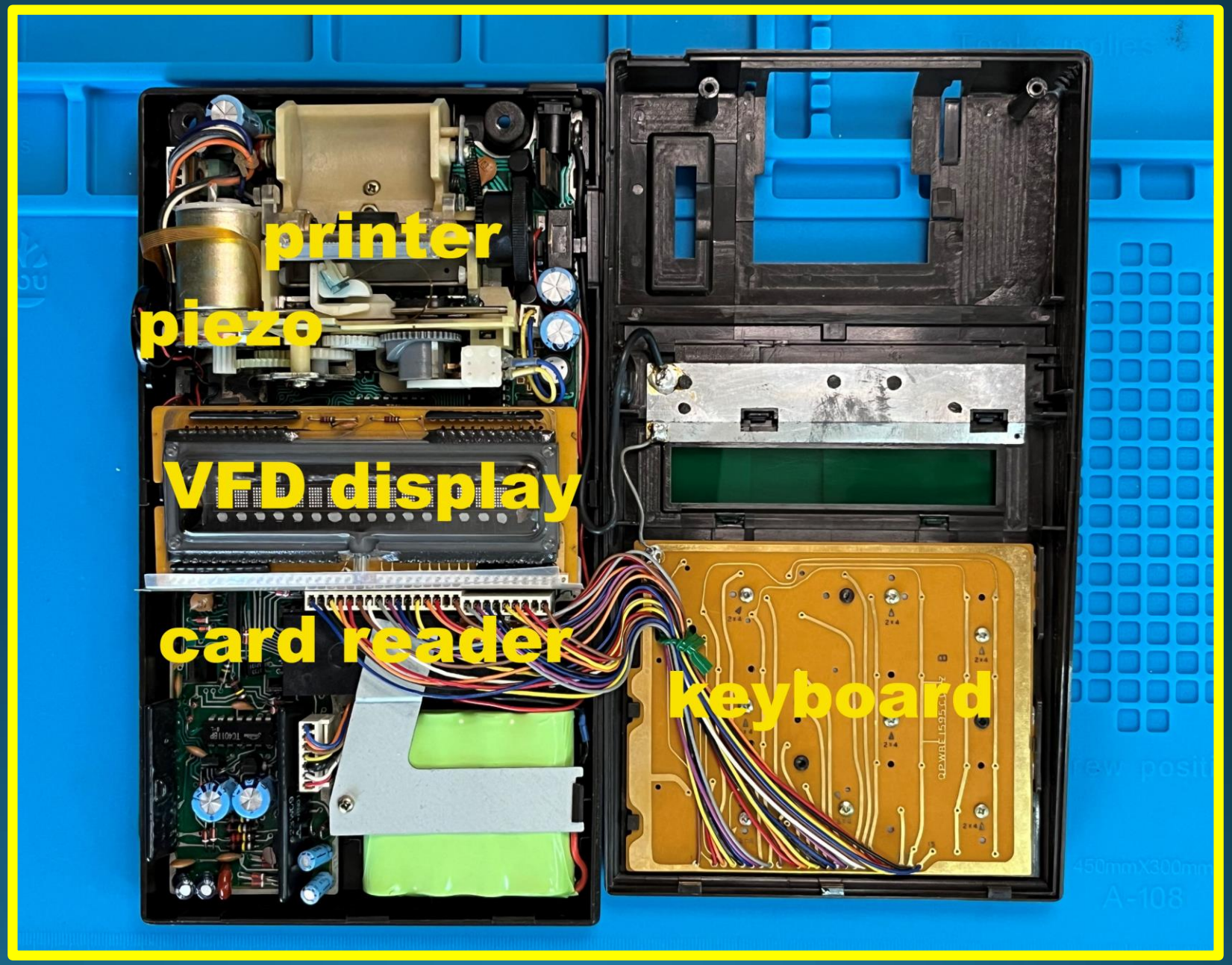
- No clock.
- Runs faster than the HP19C on similar programs.
- Electrostatic printer built in.
- Bender or piezo electric buzzer for audio key input and program output.
- Alpha numeric with alpha prompting and labelling.
- Metal bezel with plastic shell.
- Rechargeable battery pack.
- Wall wart or wall adapter.

The guts.

Without further ado, let's get cracking!

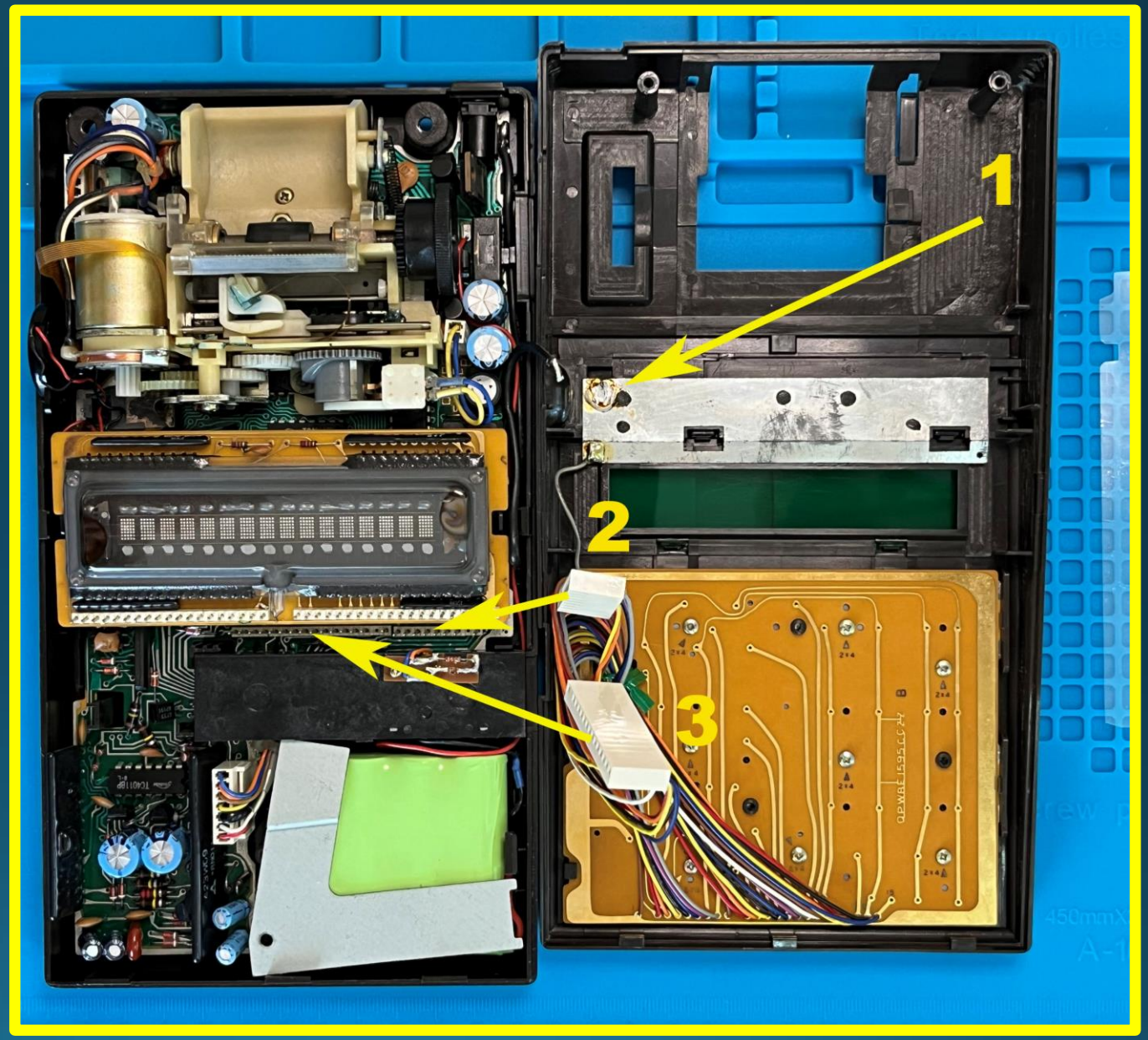


The two halves of the calculator can now be opened exposing the modular design for easy assembly and repair.

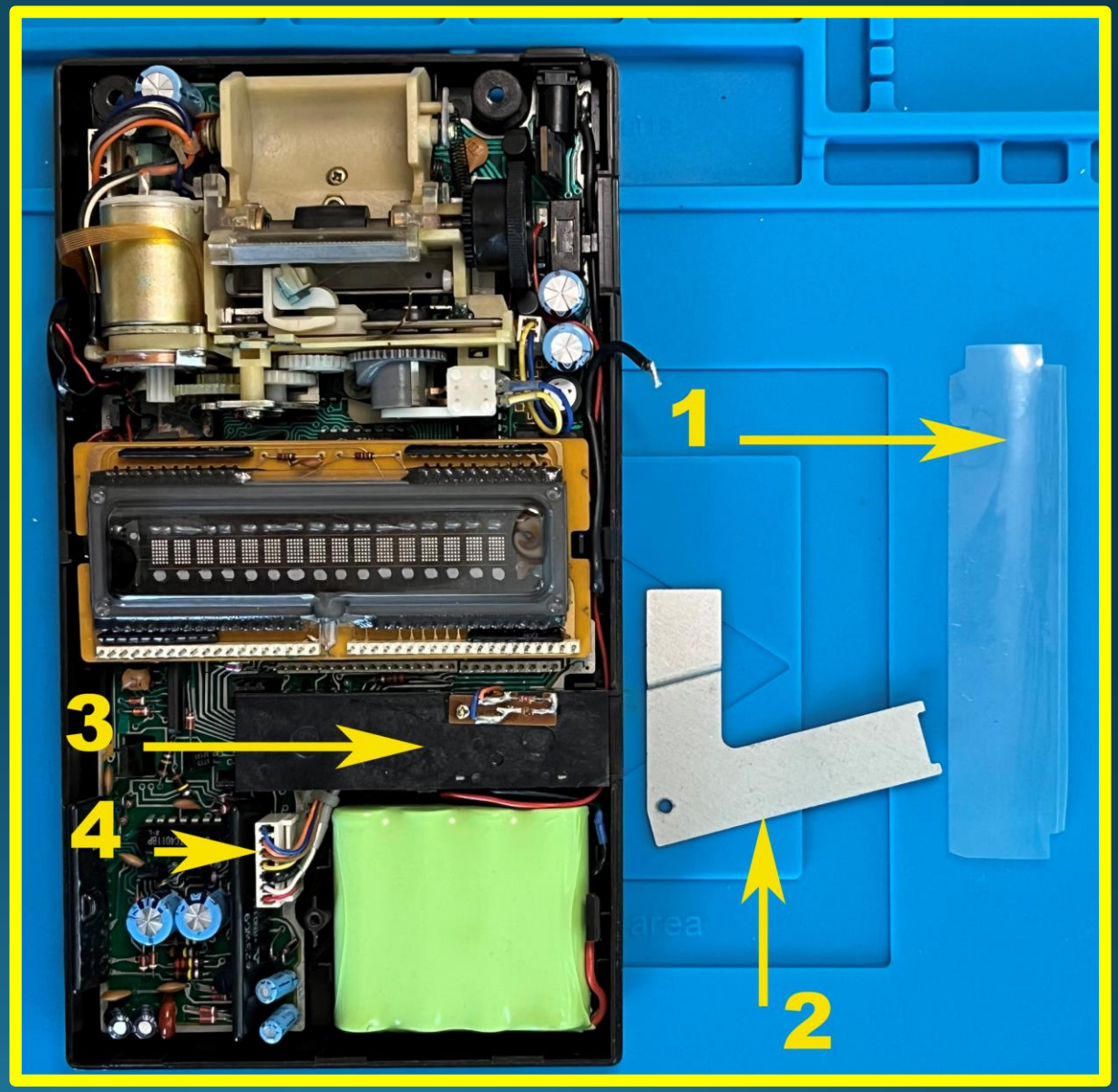


To separate the case halves:

- Desolder the common ground (1).
- Unplug the keyboard connectors (2 & 3).

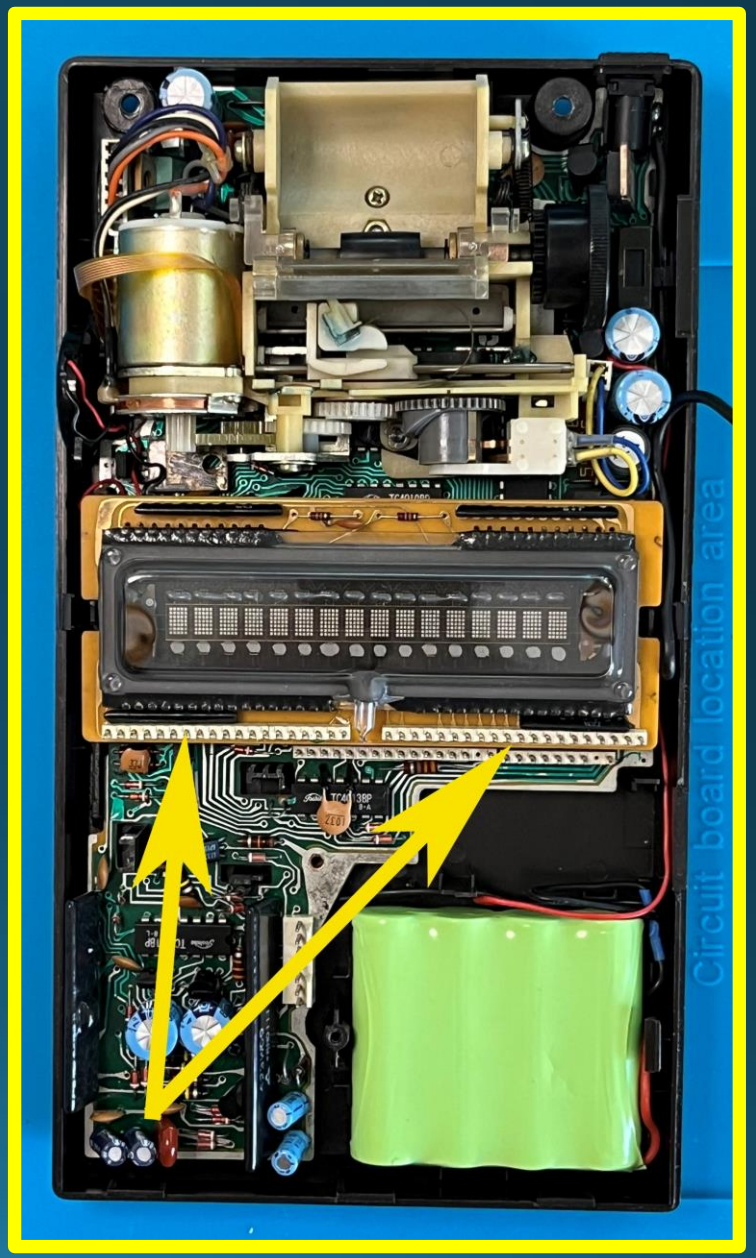


- Remove the insulator (1).
- One screw and the battery and card reader hold down clamp is released (2).
- The card reader is now exposed (3).
- Unplug the connector (4), and the card reader can be removed.



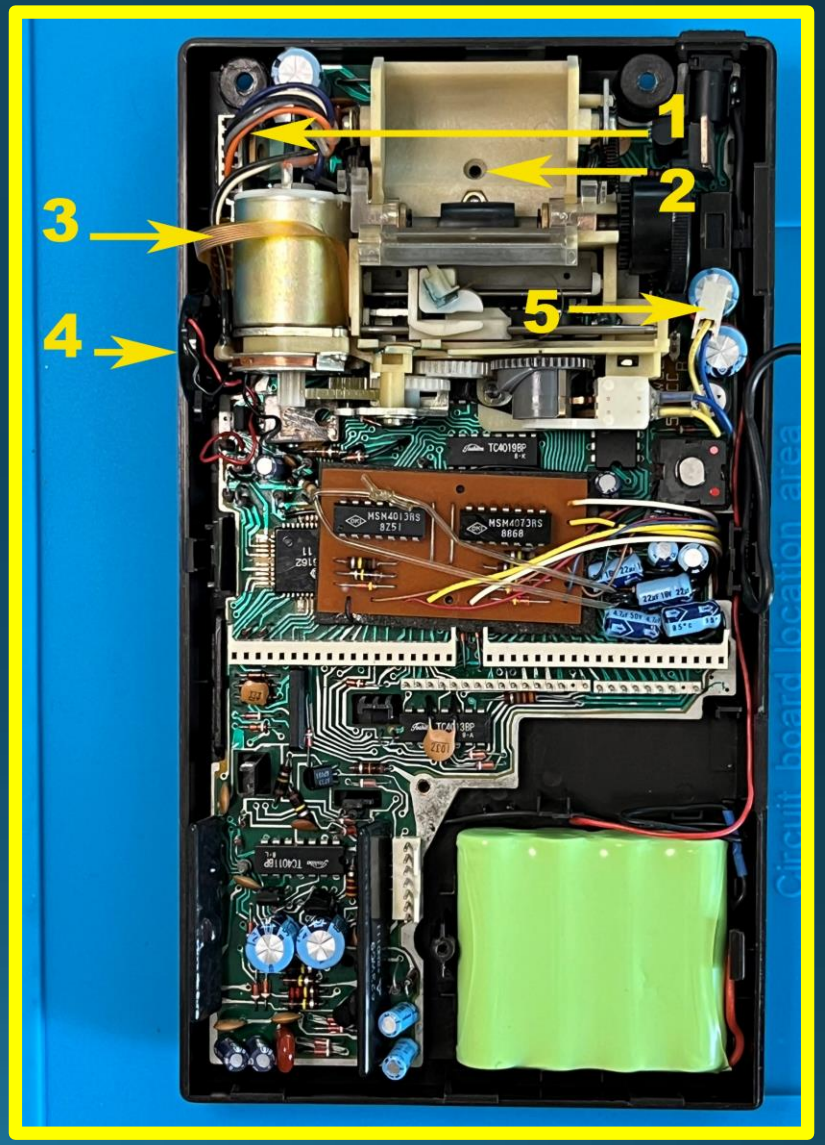
The VFD display can now be removed by gently prying upwards at the pin connectors at the base (arrows).

Pry at one end, then the other lifting a small amount at a time. Repeat until the VFD display is separated from the PCA.



To remove the printer:

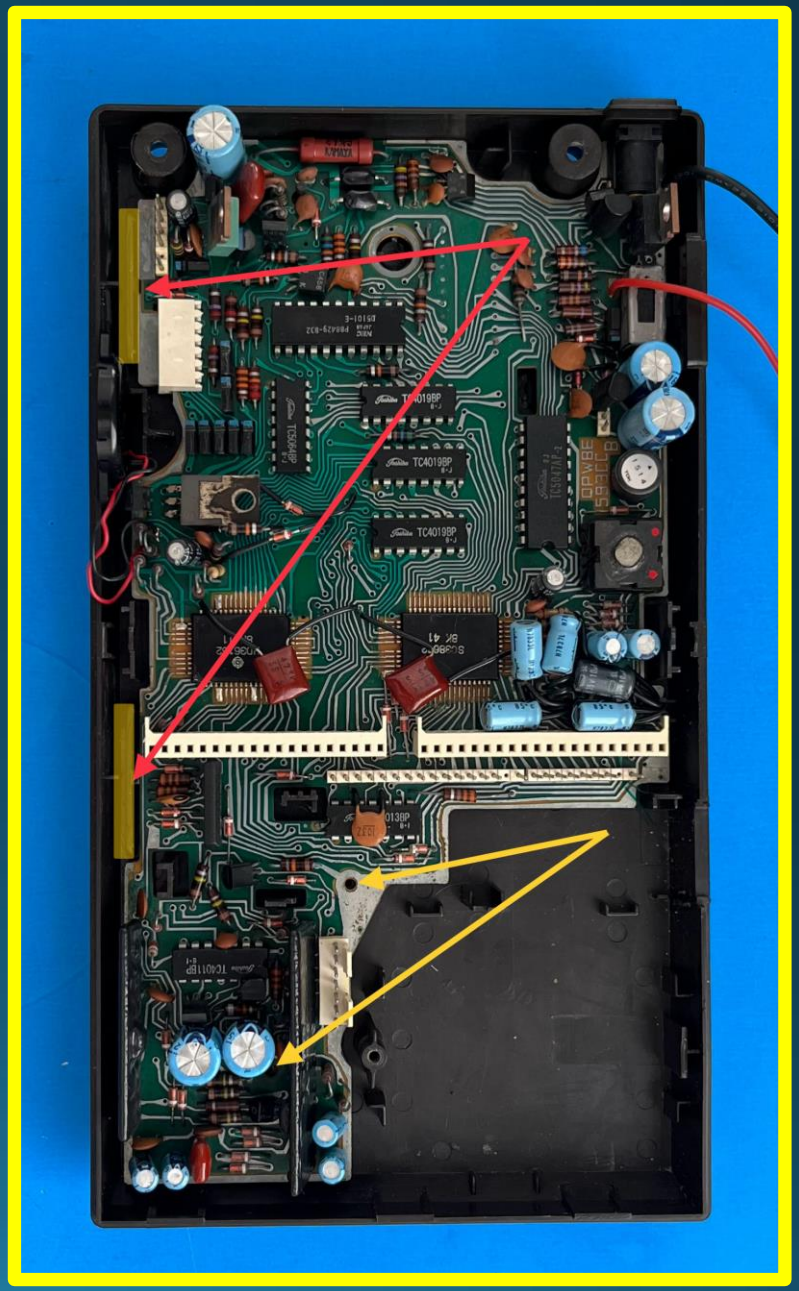
- Unplug the connector (1).
- Remove the single screw (2).
- Disconnect the ribbon connector (3).
- Lift out the piezo buzzer (4).
- Unplug the final connector (5).



With the modules removed the PCA can be separated from the case.

There are two screws (yellow arrows) and two clips (red arrows).

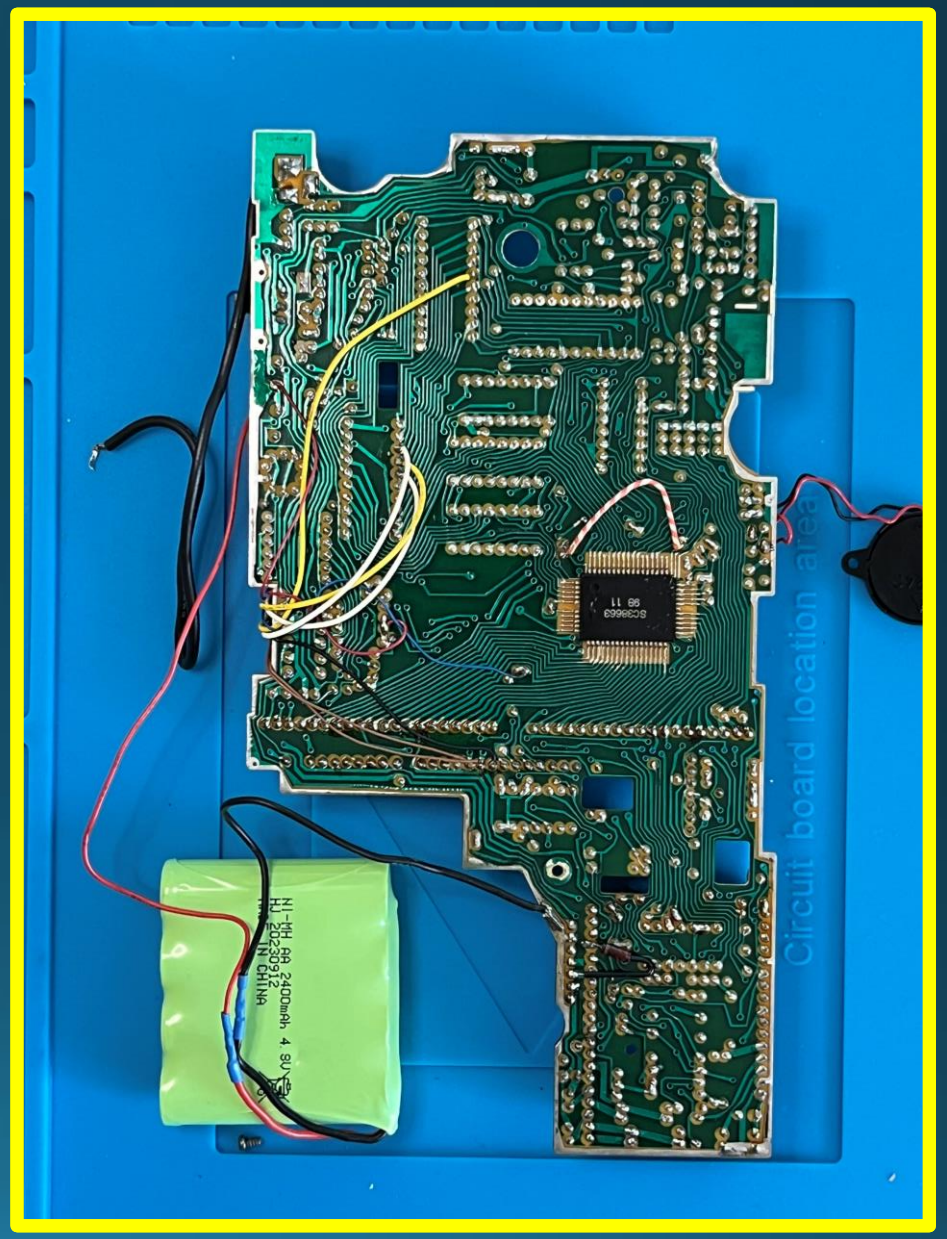
The PCA is lifted upwards from the left side, then slid towards the left, up and out of the case.



PCA REVERSE:

Chipset:	MAIN PROPRIETARY IC ROM.

- PBY299-845 ?
- TC5047AP SRAM.
- TC4019BP C2MOS.
- TC5064BP HEX HIGH VOLTAGE BUFFER.
- MSM4013RS DYNAMIC RAM.
- TC4013BP 2 D TYPE FLIP FLOP.
- TC4011BP 2 INPUT +VE NAND.

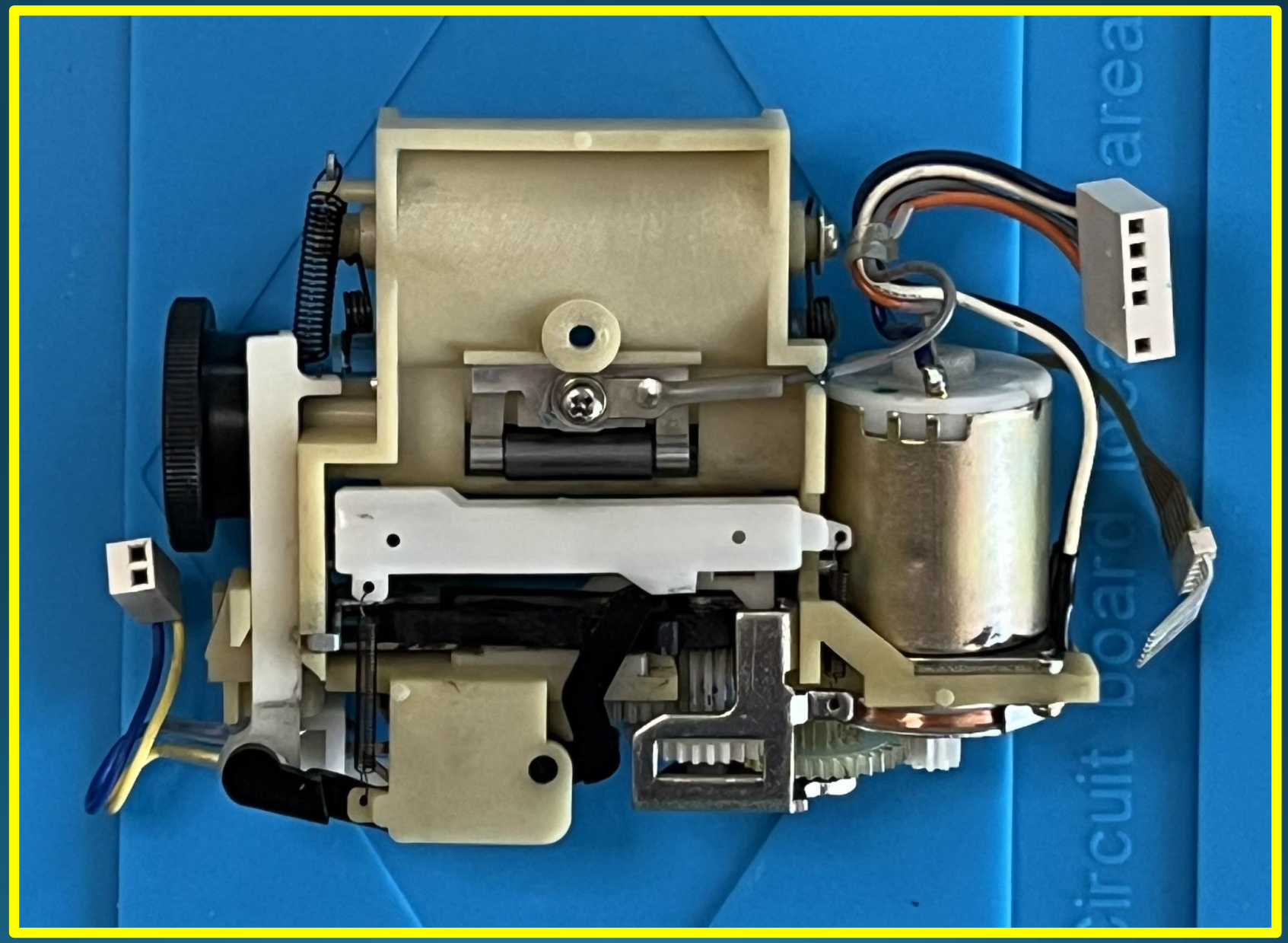


The modules.

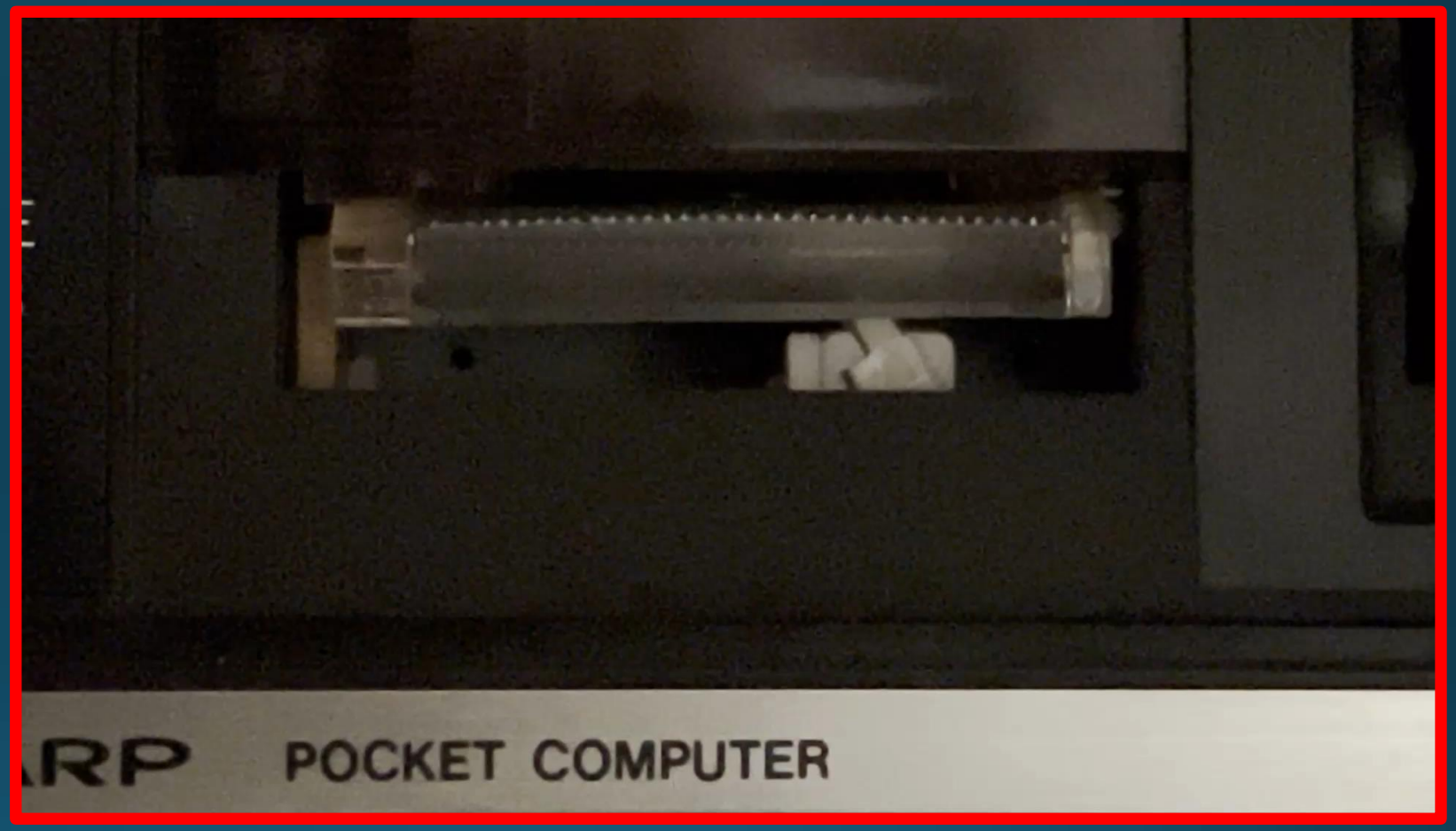
The printer assembly.

The obverse.

- Gears and pivots cleaned with 99% IPA.
- Nylon gears and metal print head carrier lubed with silicon grease.
- Metal pivots and motor bearing with clock oil.



Sparky the printer in action, in the DARK!



ooooooooooooooooooh!

The Vacuum Florescent Display. (VFD)

And now a thing of beauty! My OCD is at peace ☺

- 1 & 2 are the getters indicating the vacuum has not been compromised.
- 3 & 4 are the pins.
- LI2047D proprietary display driver?

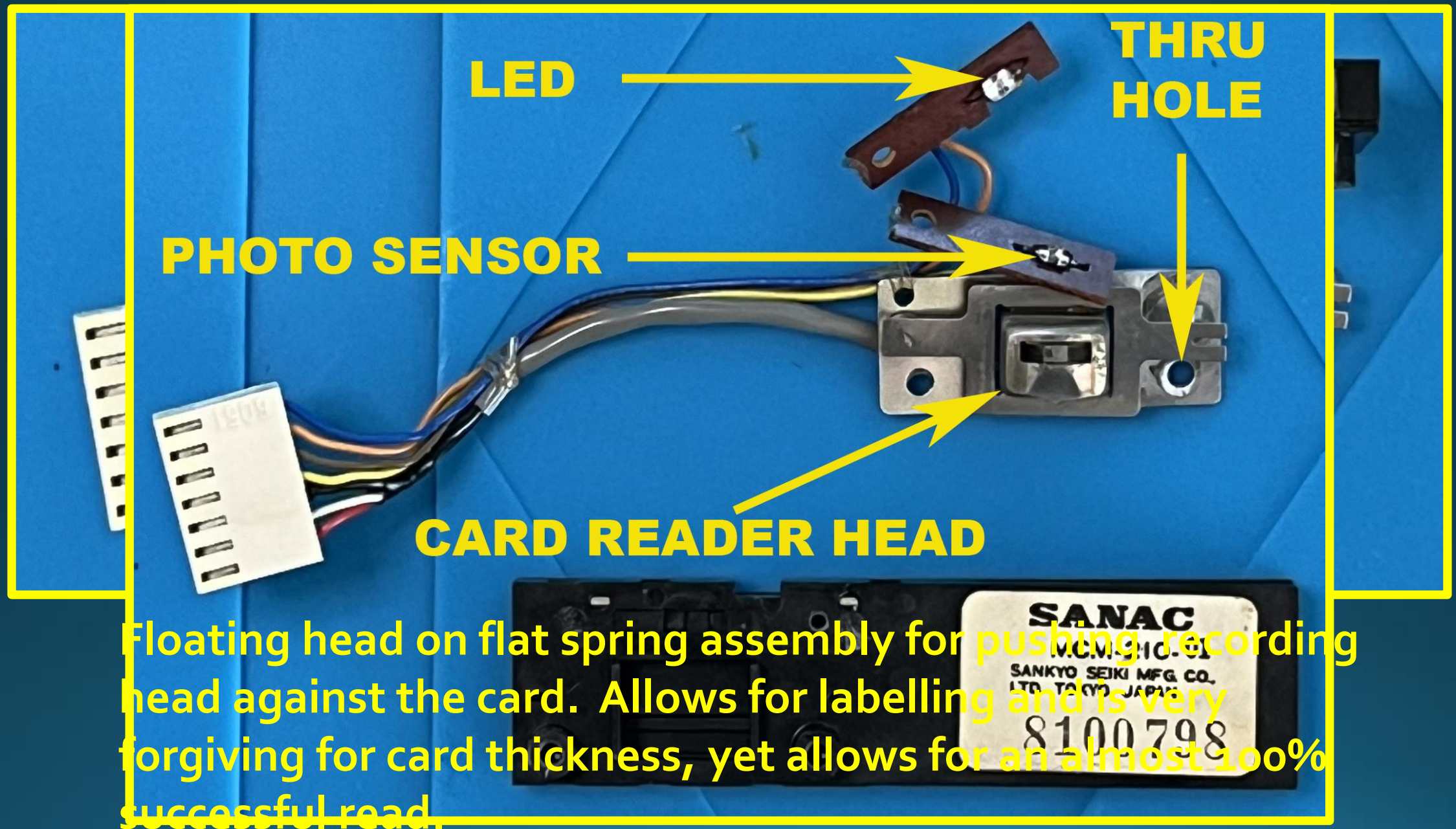
The card reader assembly.

- Manual push-pull card reader.
- Extremely simple design when compared to balls, rollers and tight ‘tunnel’ as with the HP 65, 67, 97. Uses spacers and timing marks to control read and write speed consistency.

The other side!

Photo sensor assembly

3 sensors, LEDs

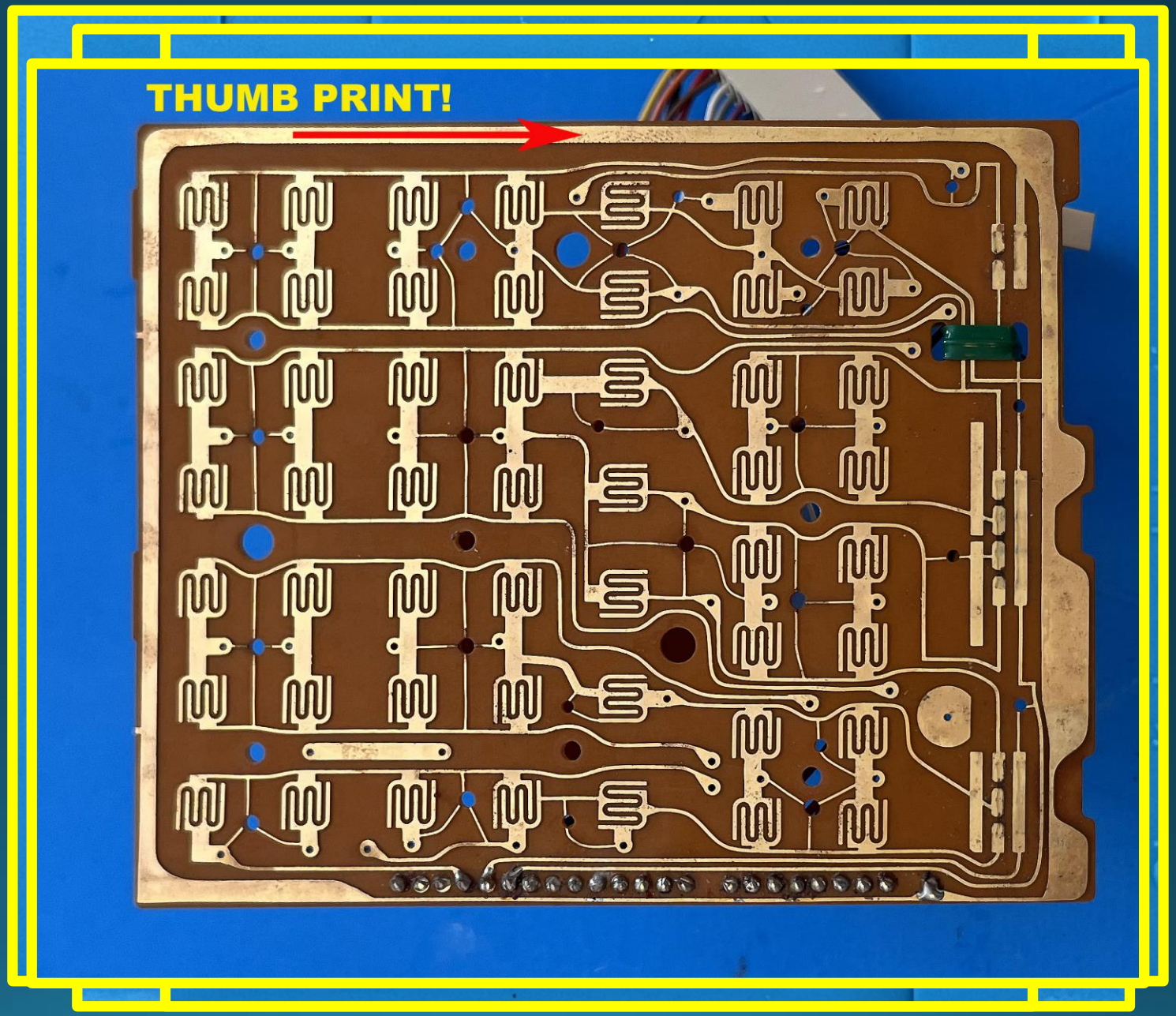


Floating head on flat spring assembly for pushing recording head against the card. Allows for labelling and is very forgiving for card thickness, yet allows for an almost 100% successful read.

Demagnetizing the play / record head.

The keyboard assembly.

- Carbon pad.
- Key & switch contacts composed of two parts and with installers finger print.
- Key interface attached to the with 8 screws and two clips.
- Note the wire harness is locked down. Also the screw through holes are marked.



The keyboard.

Special keys:

- ♪ key press alert.
- FED single space
- CAP clear all programs.
- PRO program mode.
- ^ number to the power.
- AUT program calculation mode.
- DEF program mode with assigned keys
- ♪ programmable chirp.

Special switches:

A, B, C, X, Y in association with the DEF switch allow for assigned routines in a similar manner as the HP 65, 67 & 97.

See translated manual on thumb drive for in depth key and switch descriptions.

The magnetic cards.

****HHC2024****

A much more refined approach by A. Menadue

water transfer and

magnetic strip.

CNC'd timing marks both edges

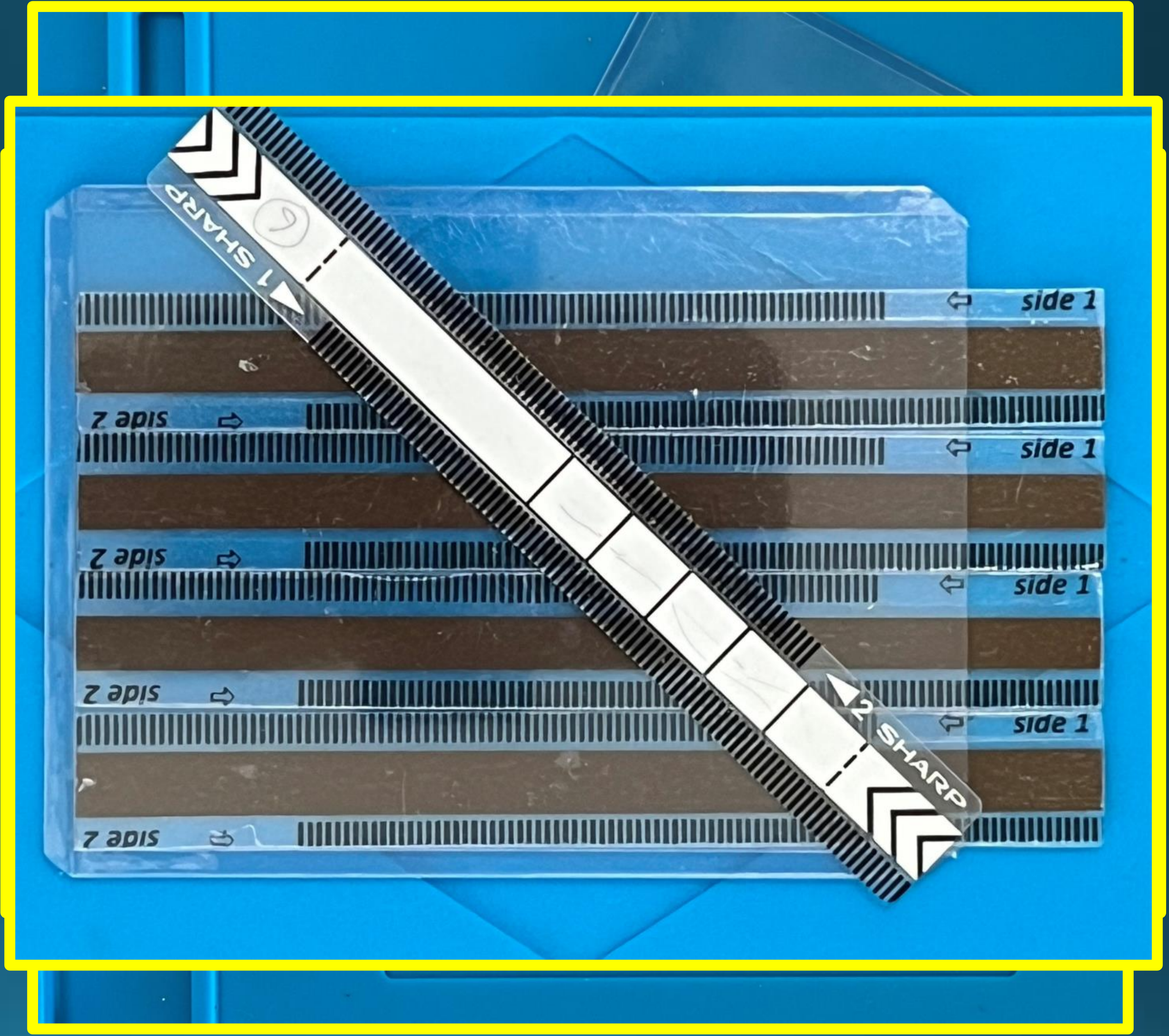
and cards with the

The cards were cut by

coercivity magnetic

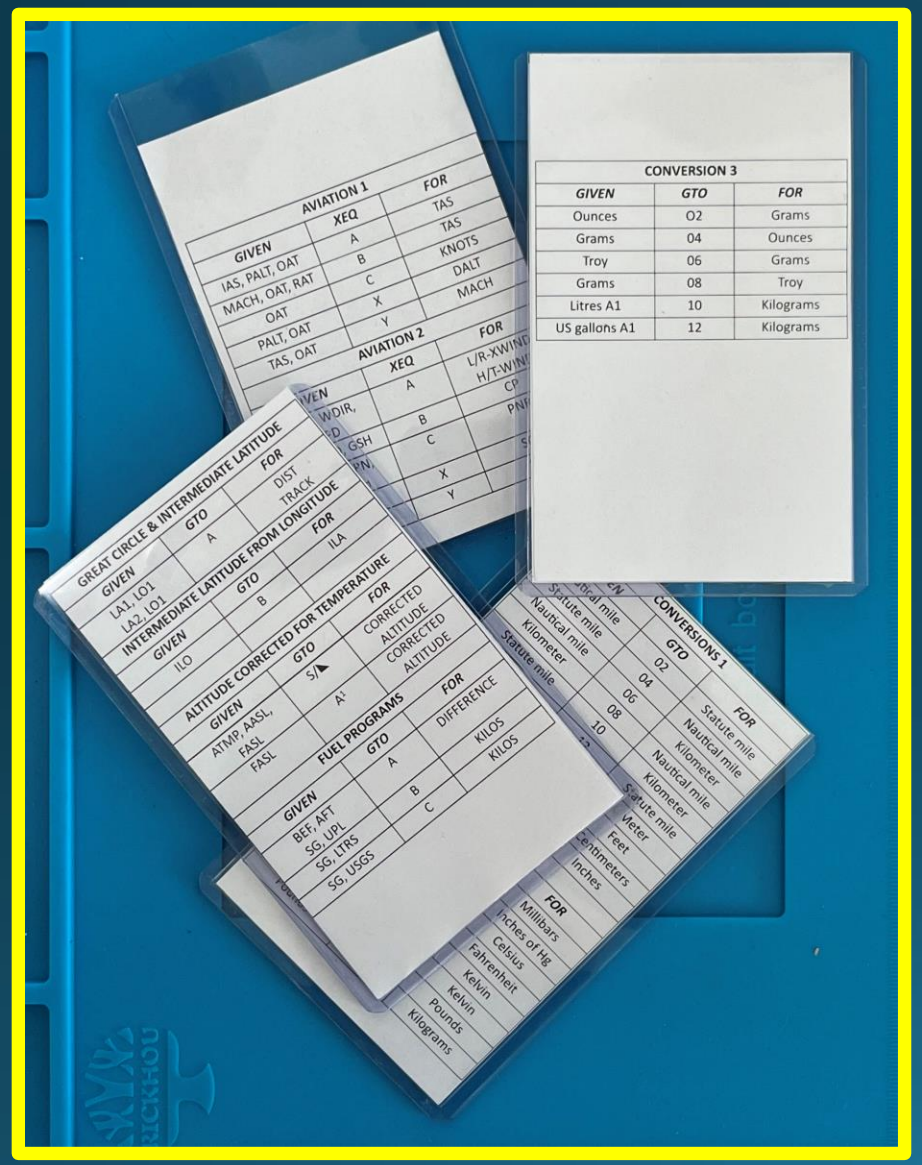
with HP cards.

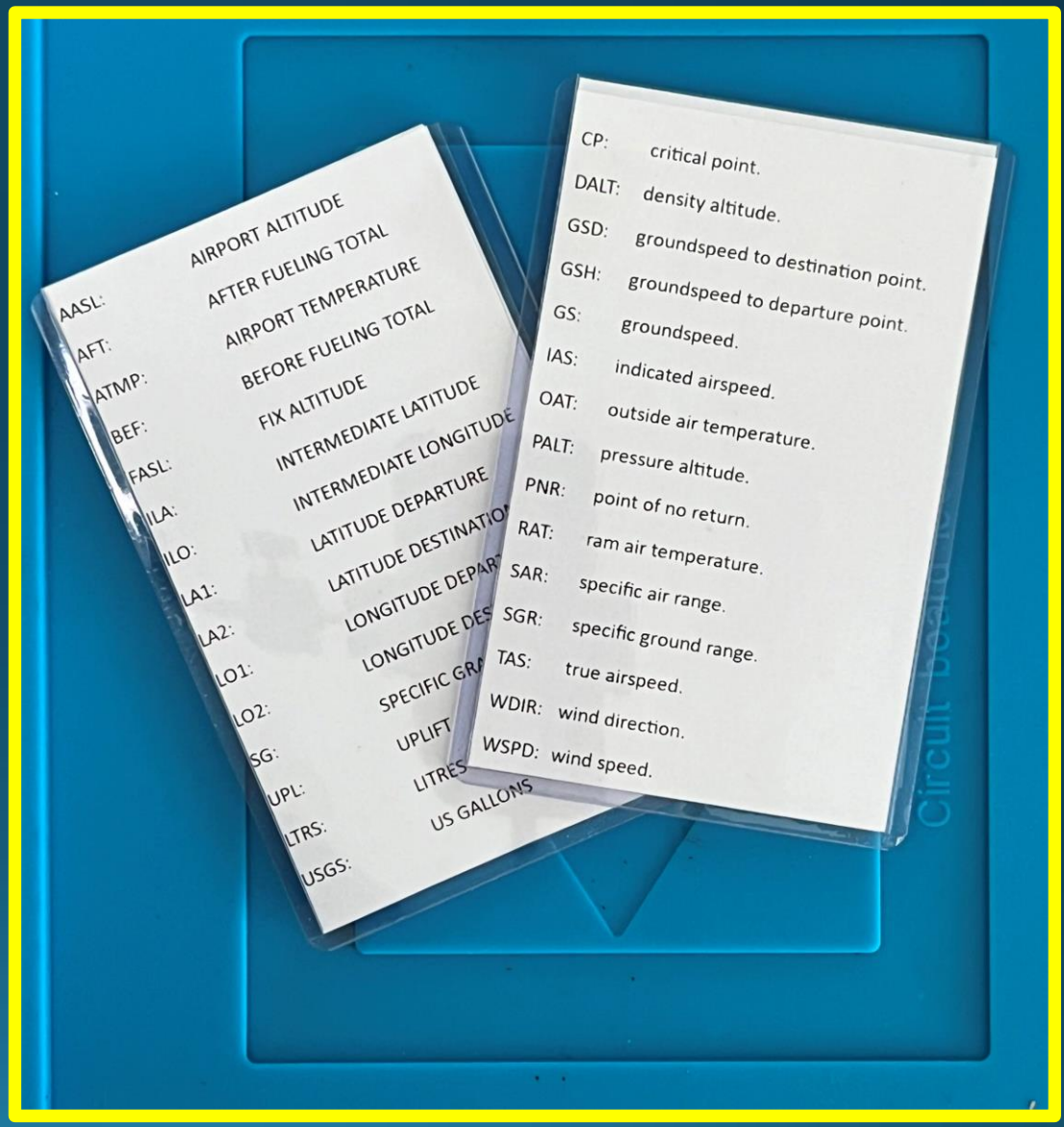
card readers.



Programming and QRGs.

With many cards and programs QRGs are required!





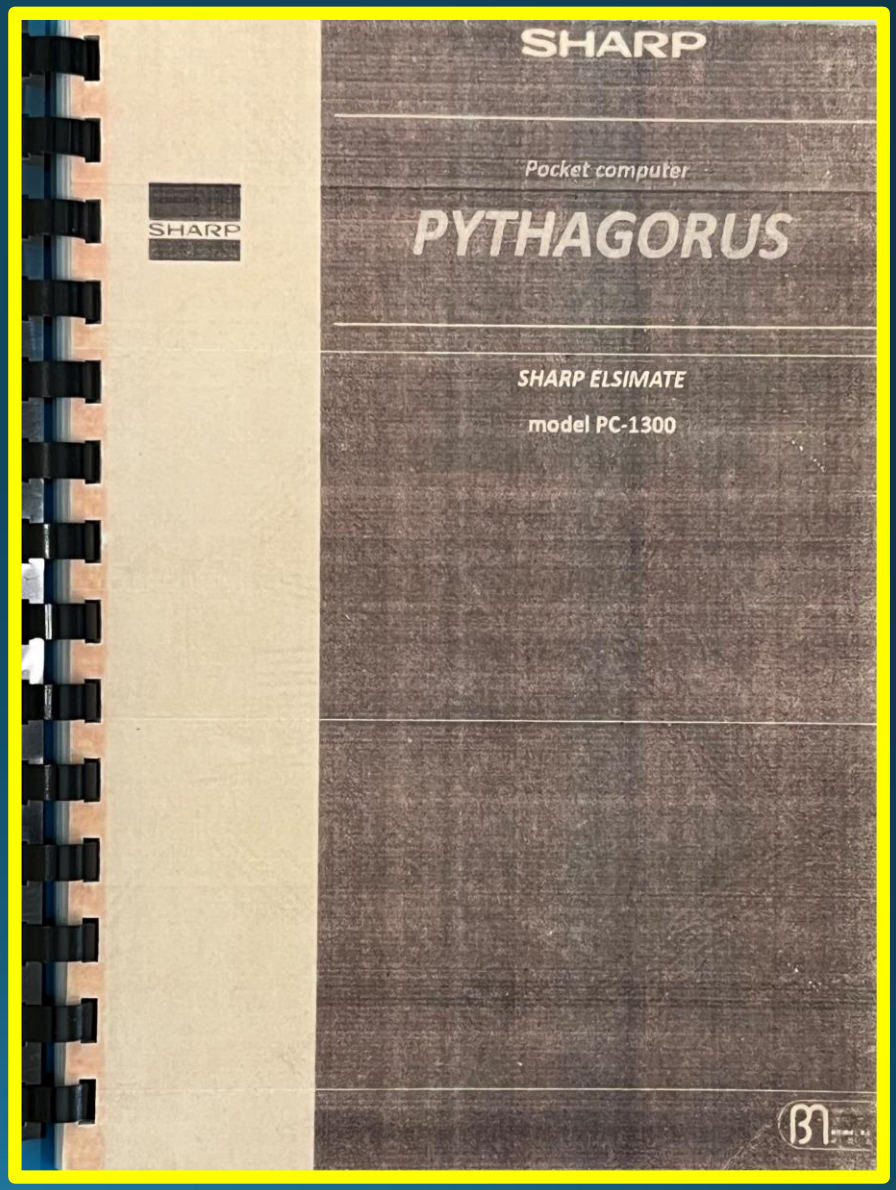
The User Manual.

It was not until I translated the Japanese manual that I discovered the relation between the "Pythagoras".

Translation of the manual reveals that it is called

The program examples, the examples extensively use Pythagoras's theorem.

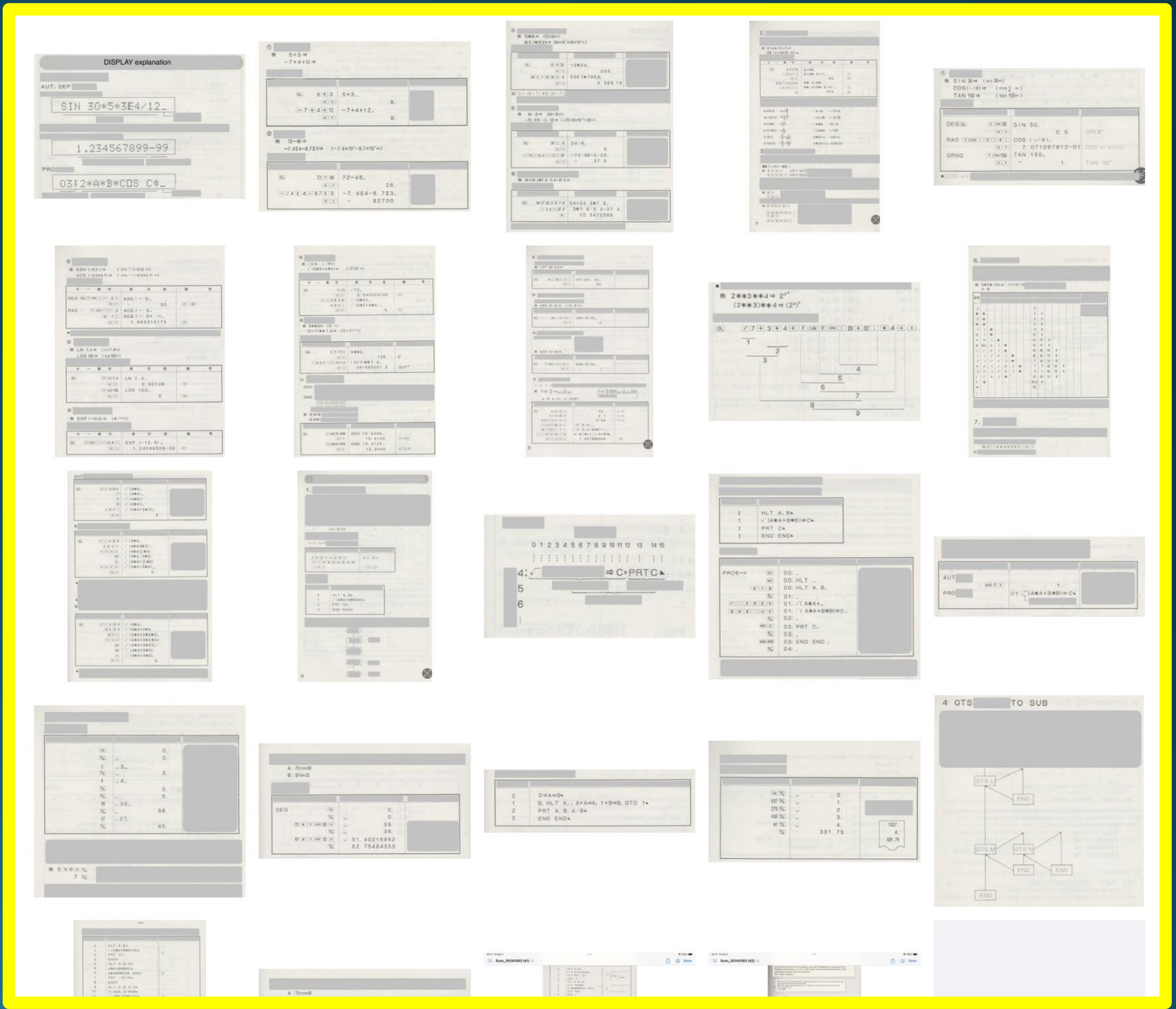
programming examples, the name of the calculator and Pythagoras!



****HHC2024****

Steps involved in the translation.

- [illegible] with
- [illegible] translate.
- [illegible]
- [illegible]
  [illegible] etc.
- [illegible] Japanese
- [illegible]
- [illegible]
- [illegible] without
- [illegible]
  [illegible] language structure.



Added to the manual as an appendix is an example of the Great Circle program.

Demonstrates a subroutine, defined keys, prompting, labelling and printing.

LINE	CODE	Explanation.
00;	DSP "CO-ORDS + ILO" ◣	Display the title of the program and pause. DSP has an automatic temporary pause before executing the next line.
01;	HLT A,B,C,D,E	HLT halts the program and sequentially allows the variables to be entered. After each variable is entered, the ◣ key must be pressed to continue to the next variable and then to execute the remaining lines of the program
02; 03; 04; 05; 06;	DEG A => A departure latitude DEG B => B departure longitude DEG C => C arrival latitude DEG D => D arrival longitude DEG E => E intermediate longitude	These sequences of code change the degree, minute and seconds into decimal degrees for mathematical computation. The resulting answers, if required, can be converted back to degrees, minutes and seconds. Each variable is stored in a memory. There are 26 main memories available as well as indirect memories. The main memories are A → Z. Here the memories A →E are used.

07;	DSP "GC -> A OR IL -> B" ◣	This display prompts the user to select which routine they are interested. In this case pressing the "A" key on the keyboard will execute the Great Circle program.
08;	HLT	This is used to stop the program to allow the execution of the "A" key or the "B" key. Otherwise, the display would only pause and then continue with the next line of code instead of the desired selection.
09;	"A" , DSP "GREAT CIRCLE" ◣	The "A", is the label for the Great Circle program. When the DEF switch is selected on the keyboard, the A,B,C,X,Y become active and will execute any routine or subroutine with the concurrent label. The comma after the "A" separates two commands on the same line. In this case, because the keyboard switch is in DEF (defined) and the A key is pressed, the result is a display of

Show us what it can do!

****HHC2024****

LBL 'B'

The great Circle program:

calculates the

At 480 knots in

LBL 'A'

still air, it will

and see how

take Wlodek 8

calculates the

hours airtime

distance and initial

to get to

true track from

London!

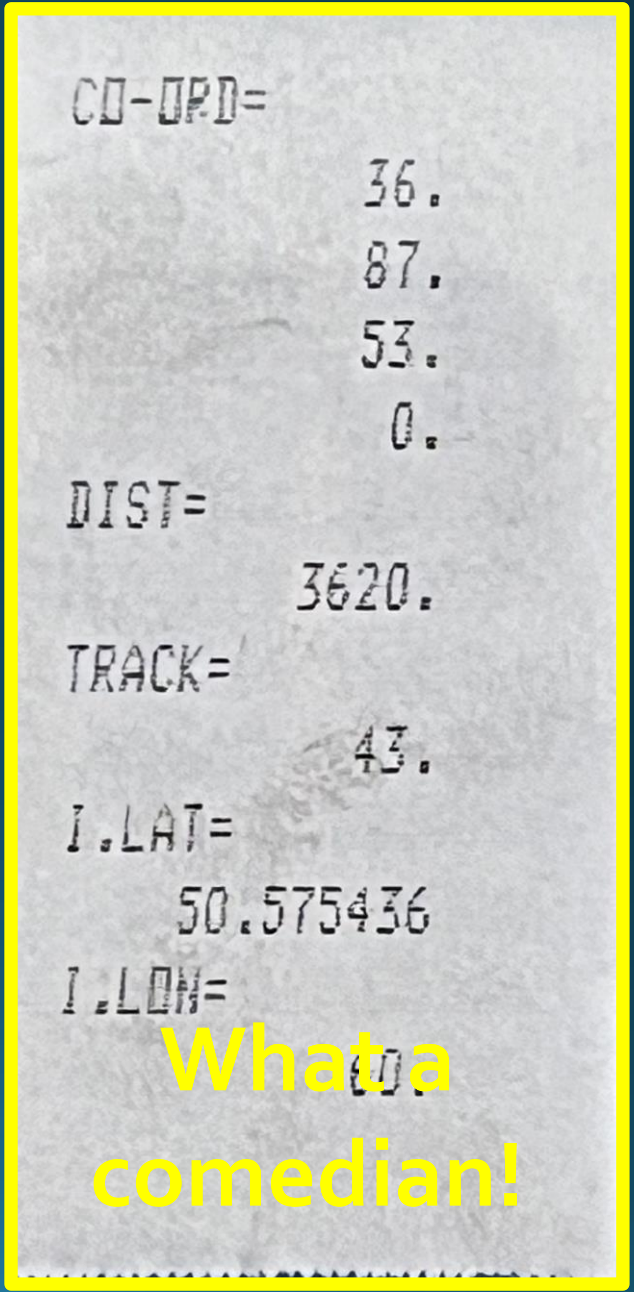
case, along

Nashville to

Wlodek's great

London.

circle route home.



References:

1. Andrew Menadue creator of the CNC'd cards. Help with low coercivity cards and all things card reader oriented. Silicium and HP Museum member.
   - Youtube channel: Menadue. Check it out, lots of great content!
   - Search for PC-1300S card creation.

2. Jamel Tayeb 2024 supplied the Japanese manual for translation.
   - https://jameltayeb.com/2016/05/21/end-of-an-era
   - https://jameltayeb.com/2024/04/13/sharp-pc-1300s-user-guide

3. Kiyosh Akima (2013) HP Museum and HHC2013
   - http://kakima.tripod.com/funprogs/pc1300s.html

4. Search HPMuseum: sharp pc-1300s
5. Search Silicium: sharp pc-1300s

And now back to the regularly scheduled program,

Over to you Richard!