One Million HHC Files

Eric Rechlin

HHC 2024 — September 21-22, 2024 — Nashville, TN

A brief background

- I’ve been archiving HP calculator files since I started hpcalc.org in 1997
- I commandeered the production of the HHC USB drive for HHC 2017
- Since 2020, I’ve been scanning all HP calculator-related books and manuals for literature.hpcalc.org

HHC 2024 USB Drive

- Collection of nearly everything I can find related to HP calculators, plus some other extras for other brands of calculators and other HP products
- Much of its contents is spread across the Internet — but some is not
- Last year had a 256 GB drive with 16 GB free
- Now on a 512 GB drive for the first time — has everything from all past years' drives and more
- Now with over 1 million files for the first time

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Challenges of a new drive

- Used Samsung 128 GB and 256 GB USB drives for the last several years — excellent “BAR Plus”
- 512 GB model just came out, but it’s unusually expensive — is it still the best option in 2024?
- Bought a variety of premium “512 GB” drives to find the best value — all made of metal and rated highly on Amazon
- Not all drives are made alike — far from it!

	Samsung BAR Plus	SSK 2-in-1 External SSD	PNY Elite-X	SanDisk Ultra Flair	SanDisk 2-in-1 Ultra Luxe	SanDisk Ultra Luxe
						
Part Number	MUF-512BE4/AM (BE3: silver)	SD301	P-FDI512ELTX-GE	SDCZ73-512G-G46	SDDDC4-512G-GAM46	SDCZ74-512G-GAM46
Price	$65-70	$53	$40	$37	$53	$42-45
Claimed size	512 GB	512 GB	512 GB	512 GB	512 GB	512 GB
Actual Size	513.2 GB	512.1 GB	495.9 GB	494.1 GB	500.3 GB	500.3 GB
Claimed speed	400 MB/s R	550 MB/s R 500 MB/s W	220 MB/s R 100 MB/s W	150 MB/s R 60 MB/s W	400 MB/s R	400 MB/s R
Actual Speed 2.5 G	350 MB/s R 110 MB/s W	380 MB/s R 380 MB/s W	178 MB/s R 40 MB/s W	140 MB/s R 42 MB/s W	360 MB/s R 166 MB/s W	350 MB/s R 166 MB/s W
Actual Speed 250 G	360 MB/s R 115 MB/s W	380 MB/s R 75 MB/s W*	175 MB/s R 28 MB/s W	138 MB/s R 28 MB/s W	350 MB/s R 160 MB/s W	350 MB/s R 160 MB/s W

* Note: The SSK SSD write speed dropped to 50 MB/s after about 50 GB had been written!

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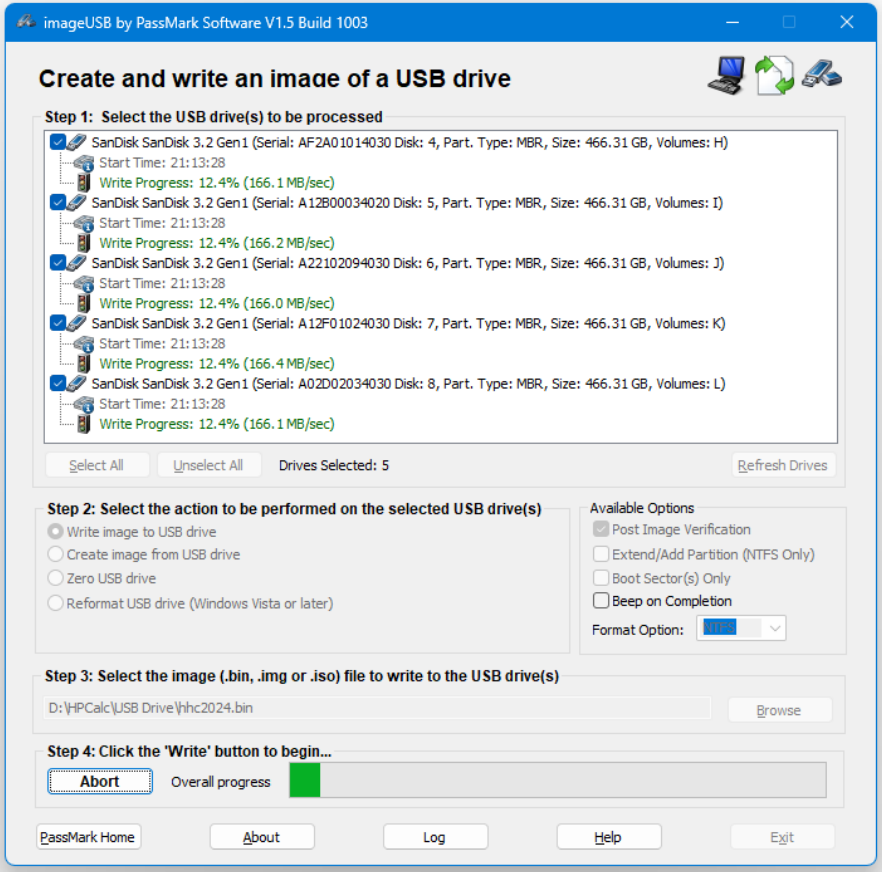
Producing the drives



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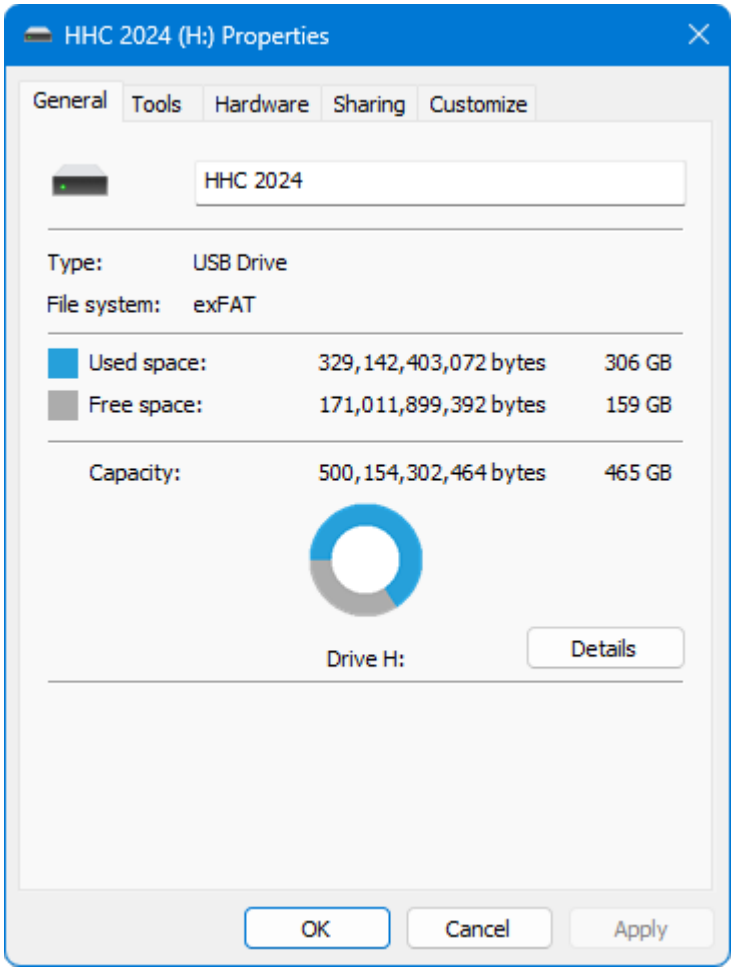
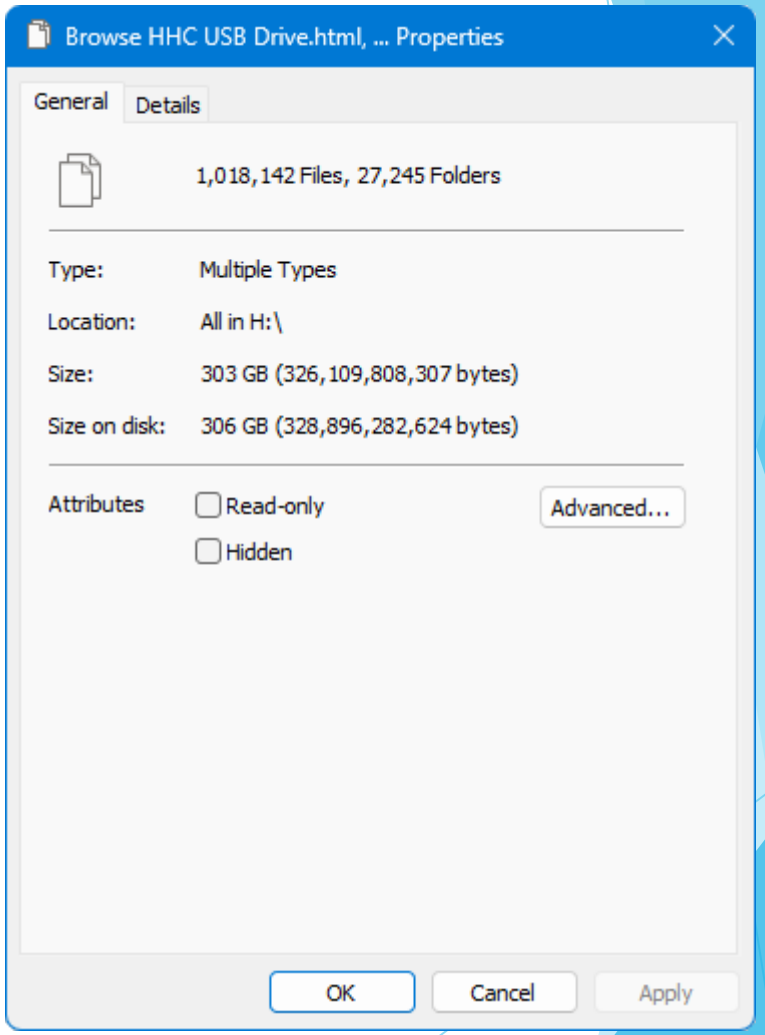

HHC 2024 (H:) Properties
General
Tools
Hardware
Sharing
Customize
HHC 2024
Type: USB Drive
File system: exFAT
Used space: 329,142,403,072 bytes 306 GB
Free space: 171,011,899,392 bytes 159 GB
Capacity: 500,154,302,464 bytes 465 GB
Drive H:
Details
OK
Cancel
Apply


Browse HHC USB Drive.html, ... Properties
General
Details
1,018,142 Files, 27,245 Folders
Type: Multiple Types
Location: All in H:\
Size: 303 GB (326,109,808,307 bytes)
Size on disk: 306 GB (328,896,282,624 bytes)
Attributes
Read-only
Hidden
Advanced...
OK
Cancel
Apply

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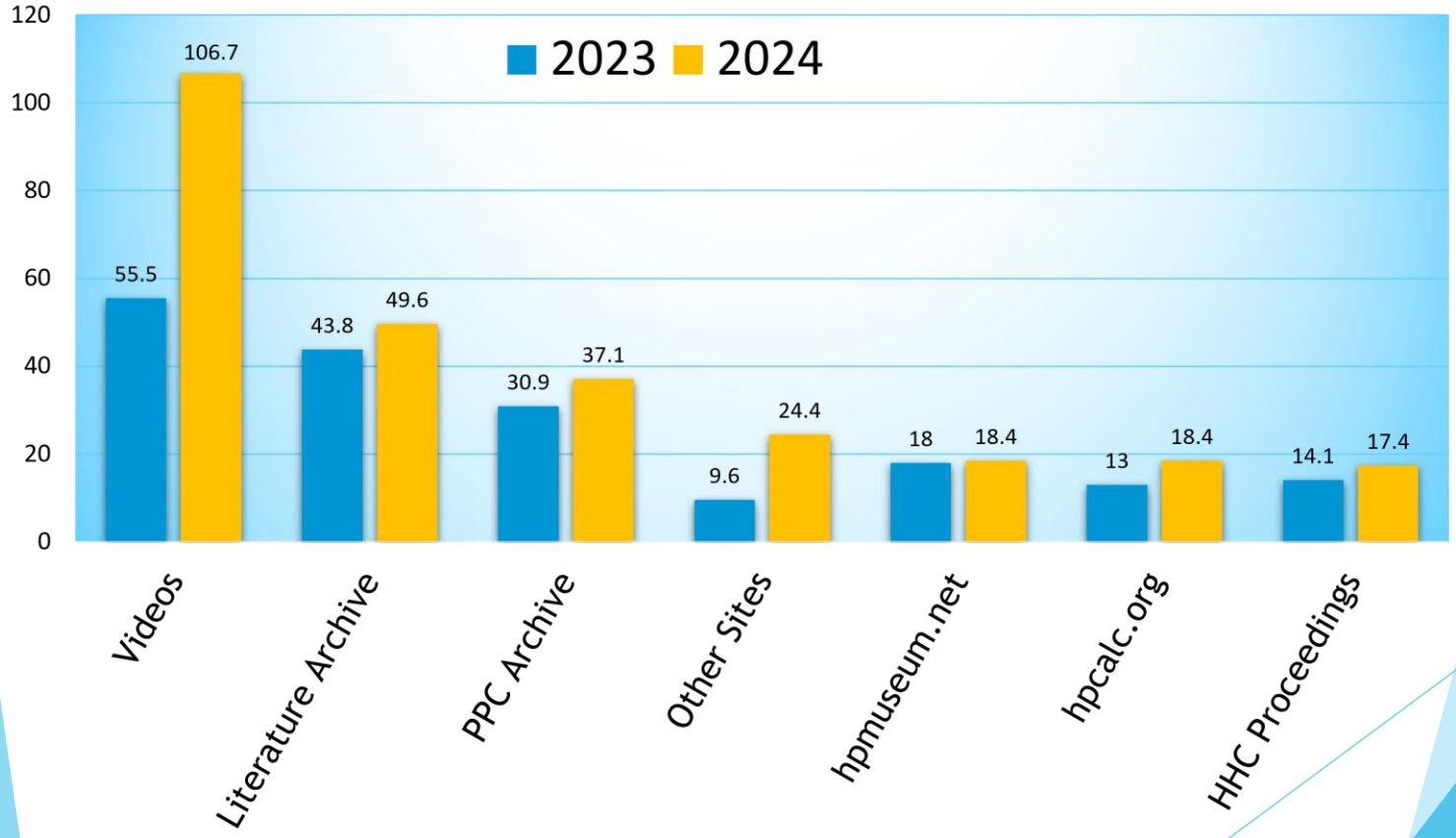
What's taking up all the extra space?



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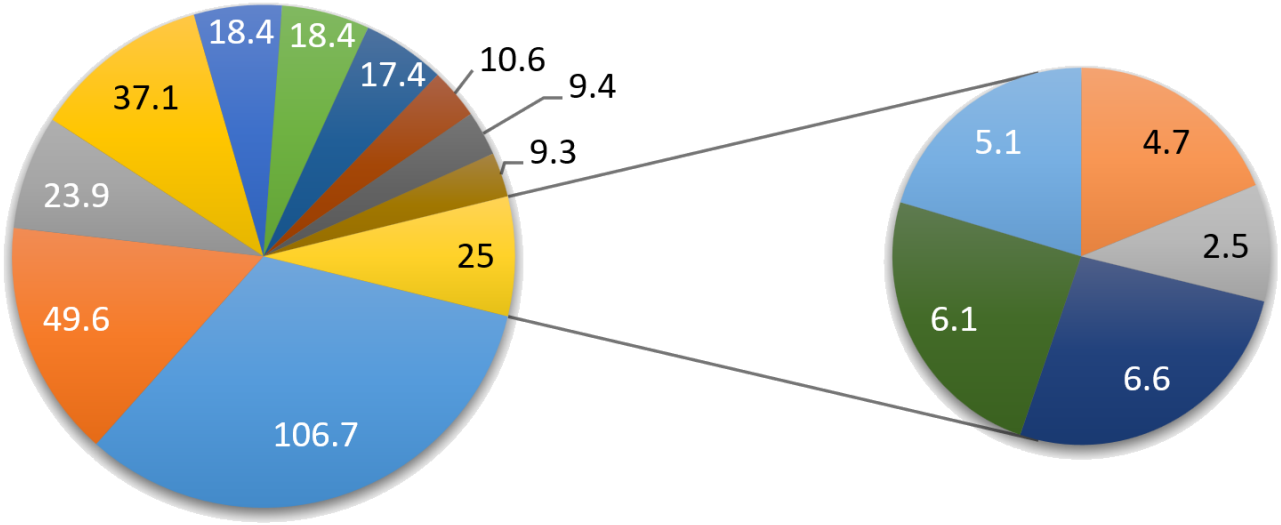
What's on the drive?



- Videos
- Literature Archive
- hparchive.com
- PPC Archive
- hpmuseum.net
- hpcalc.org
- HHC Proceedings
- Other sites
- Other
- hp41.org
- Other books
- HP Memory Project
- J-F Garnier
- Forums
- Valentin Albillo

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HHC Proceedings

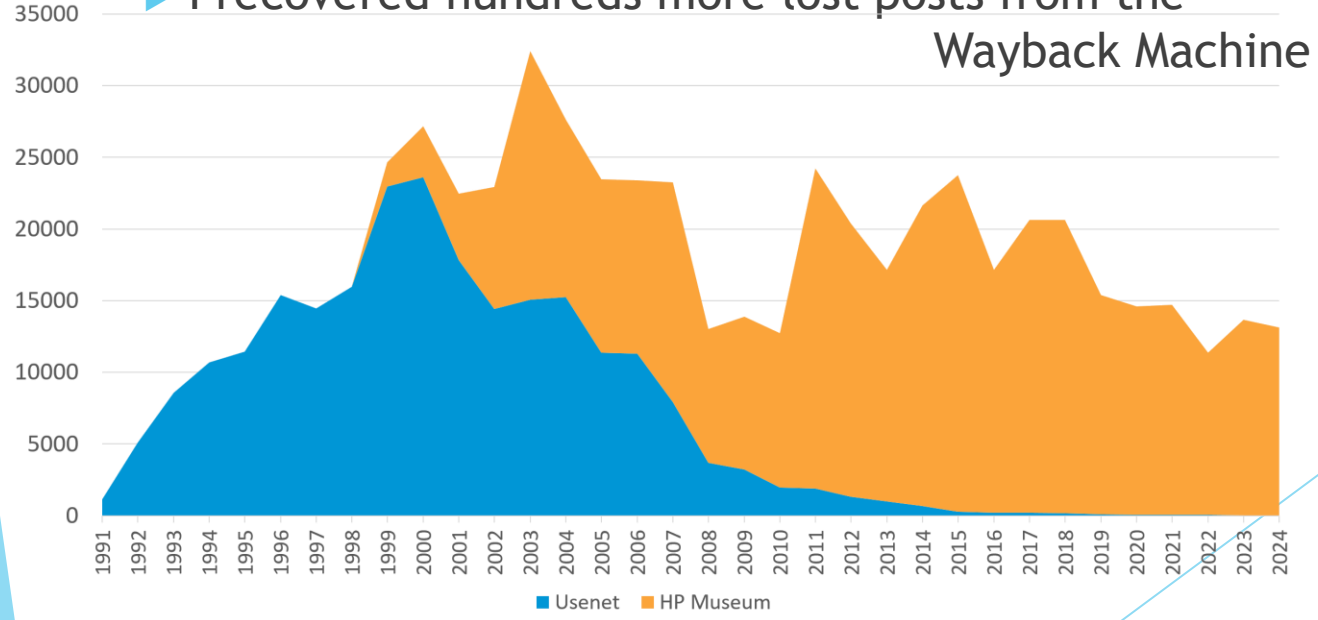
- This drive serves as the “electronic conference binder”
- All the presentations and handouts from this conference are here
- As always, all past electronic conference binders are included as well (since 2011)

Few or no changes to most sections

- Emulators: Updated Emu28, Free42, Plus42, Teenix
- Fonts: Added one new font
- hp41.org: Fewer than 20 updates
- hparchive.com: “HP Professional” publication added
- hpcalc.org: Over 150 updates, improvements to site mirroring (“home-grown” instead of WinHTTrack)
- hpmuseum.net: A few minor updates
- ROMs: Several HP 15c CE firmware files added
- PPC Archive: Actually a lot of changes, but Jake has all the news on that

Discussion forums

- comp.sys.hp48 has one more year of posts
  - Effectively dead now, with Google Groups no longer allowing posting to Usenet
- HP Museum Forum has one more year of posts
  - I recovered hundreds more lost posts from the Wayback Machine

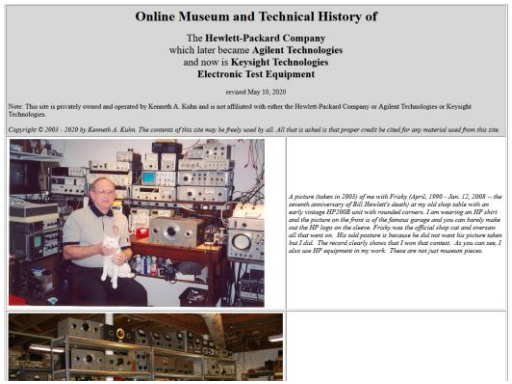


Newly archived sites

- Area48.com
  - Carlos Marangon's "HP 48/49 for beginners" site

- HP Memory Project
  - Marc Mislanghe's collection of equipment and documents related to HP in the 20th century

Newly archived sites (2)



Online Museum and Technical History of

The **Hewlett-Packard Company**
which later became **Agilent Technologies**
and now is **Keysight Technologies**
Electronic Test Equipment

revised May 10, 2020

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A picture (taken in 2003) of me with Frisky (April, 1990 - Jan. 12, 2008 -- the seventh anniversary of Bill Hewlett's death) at my old shop table with an early vintage HP200B unit with rounded corners. I am wearing an HP shirt and the picture on the front is of the famous garage and you can barely make out the HP logo on the sleeve. Frisky was the official shop cat and oversaw all that went on. His odd posture is because he did not want his picture taken but I did. The record clearly shows that I won that contest. As you can see, I also use HP equipment in my work. These are not just museum pieces.

THE OLD CALCULATOR WEB MUSEUM

Calculators | Wanted | Advertising | Articles | Links

Welcome to

THE OLD CALCULATOR WEB MUSEUM

Welcome to the Old Calculator Web Museum. Let me introduce myself. I'm Rick Bensene, the curator of this museum. I live in a rural area outside of Oregon City, Oregon USA (near the end of the Oregon Trail), called Beavercreek, and am a computing/ network/telecommunications professional. I've been a fan of all kinds of technology since I was a youngster. I have had a fascination with calculating machines, most specifically, electronic calculating machines, since I first saw a desktop electronic calculator when I was very young. I have carried this fascination with me through my life, and the Old Calculator Museum is a reflection of the passion I have with these wonderful old relics of our technological history.

The museum pages aren't fancy, focusing on content rather than frills. This museum is devoted to preserving, documenting, and sharing the technology of desktop electronic calculating machines -- from the very beginning of the electronic calculator in the early 1960's through the early beginnings of the pocket calculator of the early 1970's. Much of the technology that we enjoy today, such as personal computers, smart phones, tablets, gaming systems, and myriad other devices with microprocessor "brains", have their genesis in the technologies developed as a result of the electronic calculator.

For more information about the museum, please see the FAQ (Frequently Asked Questions).

The Old Calculator Museum is always looking for old electronic calculators of interest. If you have an old calculator that was made between 1950 and 1975, the museum may be interested in making it a part of the collection. For more information about specific machines the museum is interested in acquiring, see the WANTED page. If you have an old calculator which seems to fit these interests and are looking for a new home for it, please send an EMail with information about your calculator.

NOTICE

Visitors to the Old Calculator Museum web site may note a lack of major updates to the site over the course of about three and a half years. This isn't for lack of passion or desire to do so. The curator of the museum has been confronted with a series of challenges since the early part of 2019 that that have caused significant disruption to the curator's life. The story is long and personal, and is best left private. It is hoped that by late 2023 progress will start to be made toward adding more content. There is a large backlog of new calculators to document as well as a lot of updates to existing exhibits that need to be made. Thank you all for your patience and understanding during this difficult period.

Click in any of the "displays" to jump to the areas indicated.

- Online Museum and Technical History of The Hewlett-Packard Company
  - Kenneth Kuhn's collection of photos and scans
- The Old Calculator Museum
  - Rick Bensene's collection of 1960s and 1970s desktop calculators

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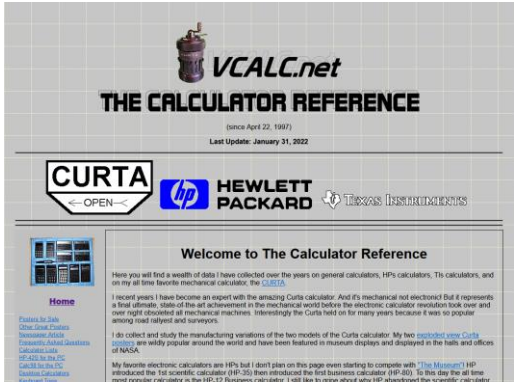
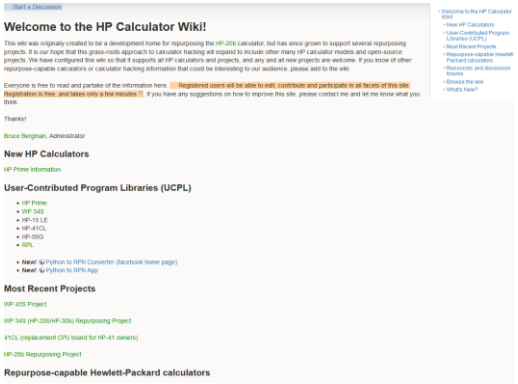
Newly archived sites (3)

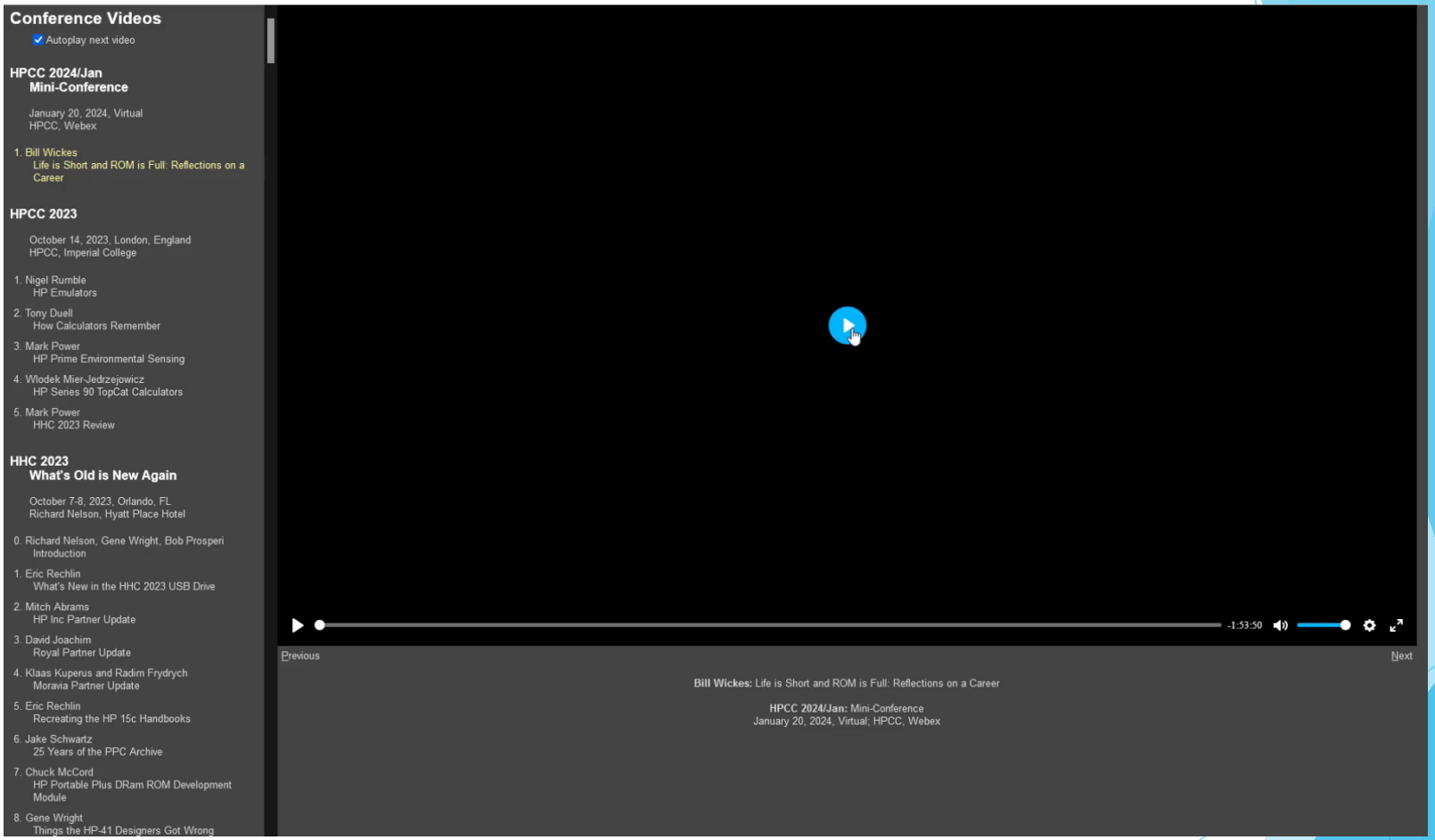




- VCALC.net
  - Rick Furr's collection of HP calculators and Curta mechanical calculators
- technical.swissmicros.com
  - SwissMicros' technical resources for their calculators
- Wiki4HP.com
  - Bruce Bergman's no-longer-online wiki, mostly about repurposing projects for recent HP calculators
- HP Series 80 groups.io files
  - Updated since last year with a bunch of new files

More videos

- The drive has plenty of space, so I added the remainder of the videos I recorded at HHC conferences — 51 GB added
- 2011 through 2018 were already on the HHC Videos drive, but are now here too
- HHC 2023 and HPCC's October 2023 mini-conference
- HPCC's January 2024 virtual mini-conference
- A couple other videos


Conference Videos
Autoplay next video
HPCC 2024/Jan
Mini-Conference
January 20, 2024, Virtual
HPCC, Webex
1. Bill Wickes
Life is Short and ROM is Full: Reflections on a Career
HPCC 2023
October 14, 2023, London, England
HPCC, Imperial College
1. Nigel Rumble
HP Emulators
2. Tony Duell
How Calculators Remember
3. Mark Power
HP Prime Environmental Sensing
4. Wlodek Mier-Jedrzejowicz
HP Series 90 TopCat Calculators
5. Mark Power
HHC 2023 Review
HHC 2023
What's Old is New Again
October 7-8, 2023, Orlando, FL
Richard Nelson, Hyatt Place Hotel
0. Richard Nelson, Gene Wright, Bob Prosperi
Introduction
1. Eric Rechlin
What's New in the HHC 2023 USB Drive
2. Mitch Abrams
HP Inc Partner Update
3. David Joachim
Royal Partner Update
4. Klaas Kuperus and Radim Frydrych
Moravia Partner Update
5. Eric Rechlin
Recreating the HP 15c Handbooks
6. Jake Schwartz
25 Years of the PPC Archive
7. Chuck McCord
HP Portable Plus DRam ROM Development Module
8. Gene Wright
Things the HP-41 Designers Got Wrong
-1:53:50
Previous
Next
Bill Wickes: Life is Short and ROM is Full: Reflections on a Career
HPCC 2024/Jan: Mini-Conference
January 20, 2024, Virtual; HPCC, Webex

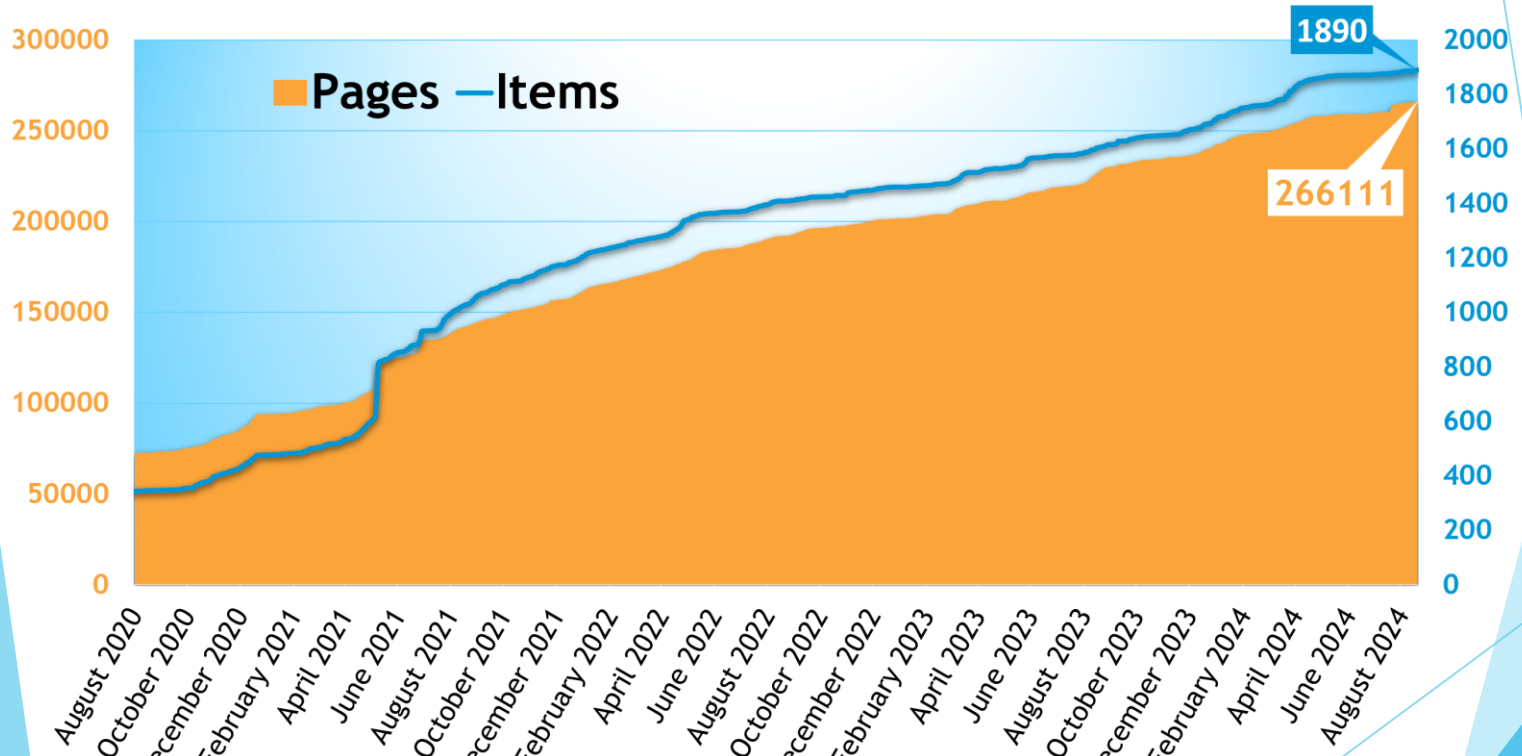
HHC 2024

Literature Archive additions

- Comprehensive collection of HP calculator documentation
- 31,000 more pages in 243 more books than last year
- PDFs sourced from HP:
  - 545 items totaling 87,802 pages
- PDFs sourced from the user community:
  - 1345 items totaling 178,309 pages
    - 915 of these, with 123,698 pages, were scanned by me
- Total is 1890 items with 266,111 pages (49 GB)
- Also available online:

  https://literature.hpcalc.org

Literature archive size over time



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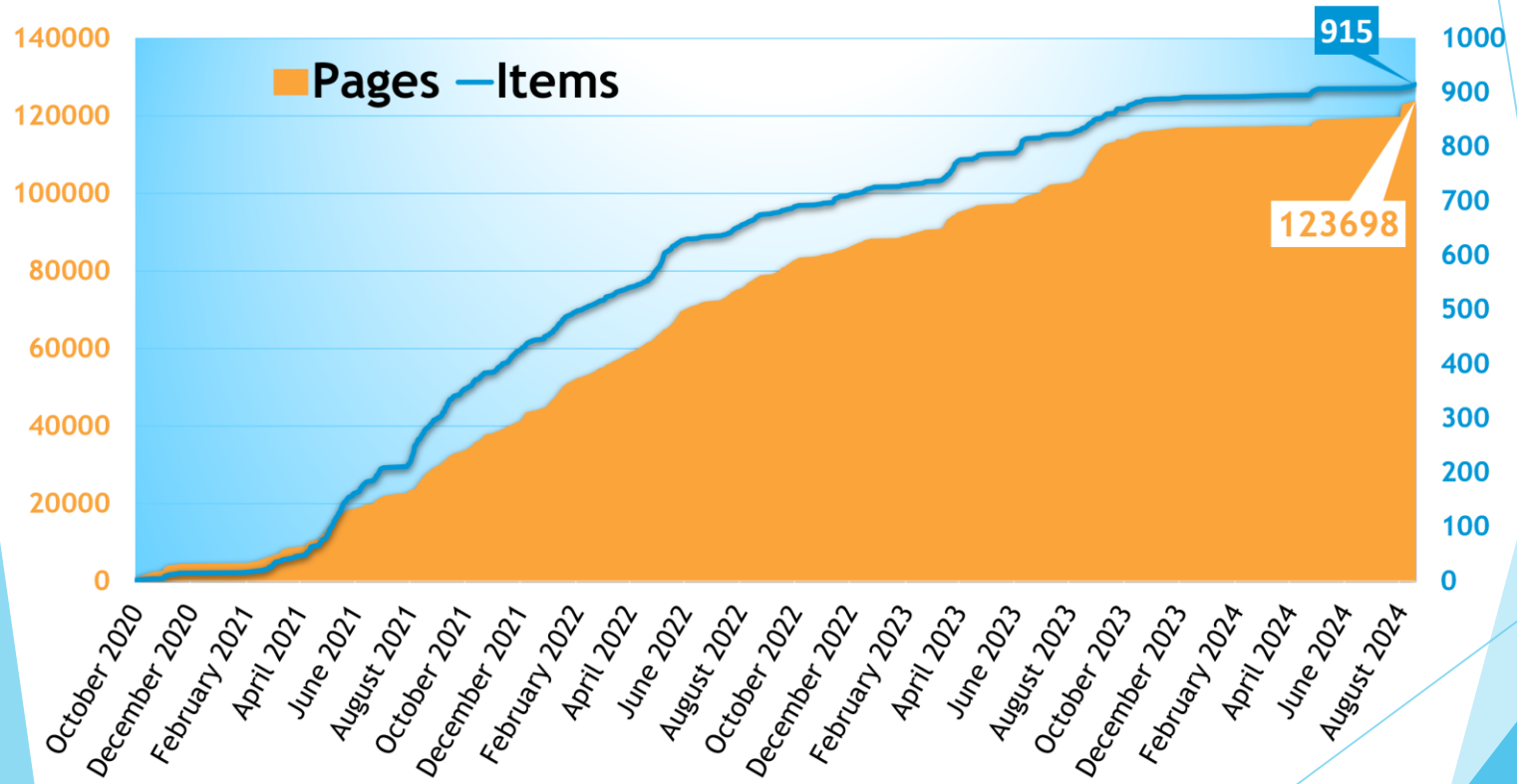
Number of items I scanned over time



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What do I still need?

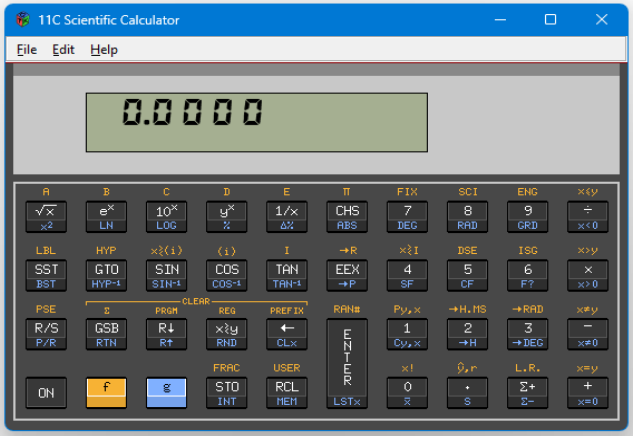
- Top priorities of books/manuals I need to scan:
  - HP-41 Real Estate Pac Quick Reference Guide
  - HP-41 Users' Library Solutions: Applied statistics I
  - HP-41 Users' Library Solutions: Taxes (1983)
  - Computer Science On Your HP-41 Using the Advantage ROM
- Also looking for more "internal" documentation:
  - Most service manuals I scanned are photocopies, not originals
  - More NOMAS listings, like HP-75 I/O ROM, 82104A Card Reader, 82180A Extended Functions, and 82905B Printer

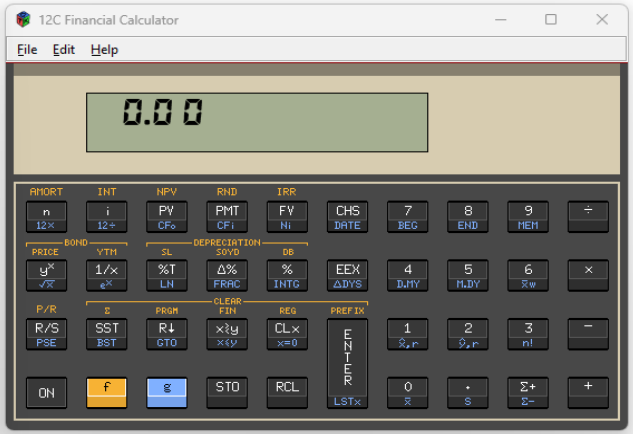
Goodies you may have missed

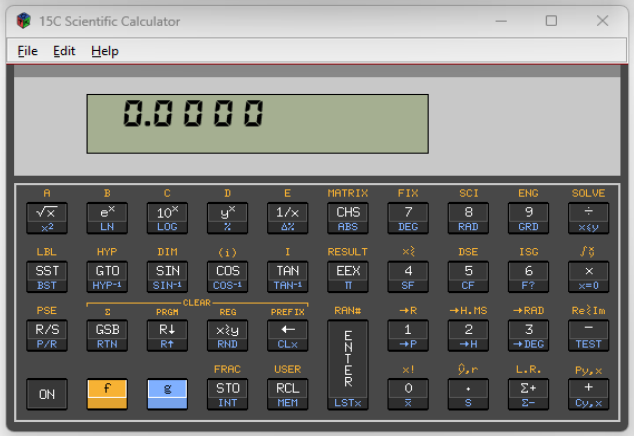
Emulators — Pioneer

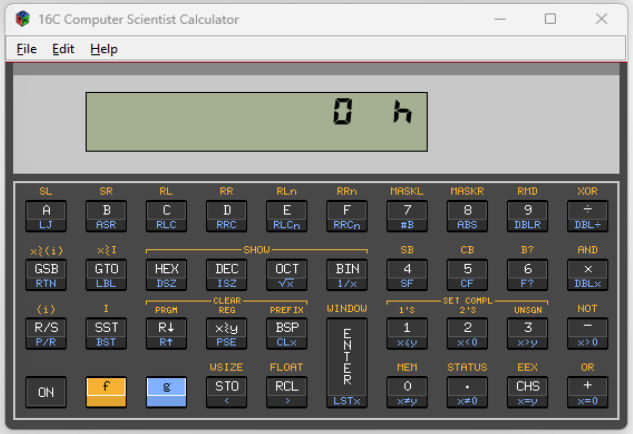
Emulators — RPL

Emulators — Voyager









HHC 2024

Emulators — Other LCD models

HHC 2024

Emulators — LED models

Emulators — Desktop models

Fun features in Teenix emulators

Fun features in Teenix emulators (2)

hp41.org: Users Library

00341C - Modified Crescent Curve Fitting.pdf
00344C - Twelve Letter Hangman.pdf
00351C - Area Under Curve (Barcodes).pdf
00351C - Area Under Curve.pdf
00361C - Wizard of Pinball.pdf
00363C - 41 Step Game.pdf
00366C - Diophantine Equations.pdf
00367C - Table look up using Lagranian Interpolating Polynomial .pdf
00369D - Advanced Star Advanced.pdf
00390C - Roots of Polynomials (Barcodes).pdf
00390C - Roots of Polynomials.pdf
00391C - Differential Equation Systems.pdf
00392C - Triangle Solution -- Automated.pdf
00397C - Piloted Linear Regression.pdf
00407C - Characteristic Polynomial of a Square Matrix (Barcodes).pdf
00407C - Characteristic Polynomial of a Square Matrix.pdf
00408C - Area of Land by Point-To-Point.pdf
00433C - 41 Star Identification.pdf
00440D - 67 Sequences.pdf
00463D - Game of Life (9x9).pdf
00476C - High Res Plot Routine.pdf
00477C - Curve Fitting (Barcodes).pdf
00477C - Curve Fitting.pdf
00479C - Petals Around The Rose.pdf
00499D - Battleship I.pdf
00501D - Baseball.pdf
00508C - Sunrise Sunset and Twilight.pdf
00520C - Yacht Racing Rules Judge.pdf
00522D - 67 Forty-Four.pdf
00524C - Banner.pdf
00537D - Championship Golf.pdf
00538D - Roulette Deluxe.pdf
00549C - Annual Growth Rate of Investments.pdf
00552D - Forty-Four; A Game of Deduction.pdf
00555C - Multiple Linear Regression (Barcodes).pdf
00555C - Multiple Linear Regression.pdf
00555D - Baseball.pdf
00556C - Polynomial Regression (Barcodes).pdf
00556C - Polynomial Regression.pdf
00564C - Function Scanner.pdf
00577C - Row Plot High Res.pdf
00586D - Football.pdf
00597C - Hot Air Balloon.pdf
00597C - Hot-air balloon.docx
00609C - Fitting Polynomials of Degree M to Data (Barcodes).pdf
00609C - Fitting polynomials of Degree M to Data.pdf
00616D - Objective (Tank War).pdf
00626D - 67 Game of Life #3.pdf
00648D - 67 Arithmetic Progression.pdf
00653D - 67 Twenty-five digit multiply.pdf
00655C - Space War Interactive.pdf
00657C - RAD 50.pdf
00663C - 41 Maze Construction.pdf
00687D - 67 Roulette #3.pdf
00702C - 41 Gear Frequencies.pdf
00709C - Concentrations and Disolutions Chemistry.pdf
00727D - 67 Jack of Eagles.pdf
00732C - Plot 3 Functs on Graph.pdf
00733D - 67 Roulette.pdf
00734D - 67 Jotto (Word Guess).pdf
00739D - 67 Daytona 500.pdf
00741C - Multiple Regression 1.pdf
00747D - 67 Football #2.pdf
00761D - 67 Calendar Functions.pdf
00763C - High Res Plotter.pdf
00766D - Equation of Particle Motion.pdf
00771C - 41 Lunar Day Converter Astrophoto exp guide.pdf
00788C - Eqation of Particle Dynamics.pdf
00788C - Equation of Particle Dynamics.pdf
00796C - True Battleship.pdf
00825D - 67 Golf with putting.pdf
00833C - 41 Fourier Series.pdf
00834C - Banner Printer.pdf
00848C - 41 Hexadecimal - Decimal Conversions.pdf
00850D - 67 Number Hunt.pdf
00853D - 67 Orbitor.pdf
00862D - PDP-11 Oct -To-Dec Conversions.pdf
00866C - Wompus.pdf
00868C - Fast Fourier transform I.pdf
00869C - Partial Fraction Expansion.pdf
00873D - 67 Basketball.pdf
00874D - 67 Ping Pong.pdf
00875D - 67 Ping Pong #2.pdf
00888D - 67 Mastermind.pdf
00900C - The Caves.pdf
00903C - Reversi Alternate Version.pdf
00903C - Reversi.pdf
00925C - Data Packing.pdf
00929C - 41 Chess 5x5.pdf
00948C - 41 Tic Tac Toe.pdf
00959D - 67 Programmer's Bell Slot Machine.pdf
00961C - Biorhythms.pdf
00964D - 67 Robot Trap.pdf
00981C - 41 Tabulator.pdf
01010C - 41 Precession of Right Ascension and Declination.pdf
01127C - Elev on VC.pdf
01173D - 67 Wumpus Hunt.pdf
01196C - Bode General Transfer.pdf
01196C - Bode General Transfer.zip
01201C - Programmed Equations.pdf
01220C - 41 Wars.pdf
01294C - 41 Cyclone Efficiency.pdf
01299C - Multiple Linear Regression.pdf
01333C - Nonlinear Curve Fit Using Simplex Fcn Minimization.pdf
01370D - Blackjack.pdf
01403C - 41 Cooling Load Calculations.pdf
01412D - Matrix Game - Calculator Learns to Learn.pdf
01448C - Programmer Plus.pdf
01471D - 67 Slalom Ski.pdf
01475C - Interchangeable Solutions.pdf
01475D - 67 Rational Tic Tac Toe.pdf
01495D - 67 Baseball.pdf
01497D - 67 Crack the Vault.pdf
01511D - 67 Pinochle.pdf
01530C - Cubic Spline Interpolation.pdf
01532D - 67 Moon Lander Continuous.pdf
01581D - 67 Sink the Yamamoto.pdf
01593C - The Ultimate Calendar.pdf
01602D - 67 Factor Finder.pdf
01616C - Double Precision Hex Conversion.zip
01616C - Double Precision Hexadecimal Conversion.pdf
01630C - 41 Internal Rate of Return.pdf
01650D - 67 Random Number Generator.pdf
01694C - Symbolic Logic.pdf
01733C - 41 Numerical Integration.pdf
01763C - Swords-Sorcery.pdf
01763C - Swords-Sorcery.zip
01767D - 67 Magic Squares #2.pdf
01768C - Superelevation.pdf
01798D - 67 Bridg-It.pdf
01800D - 67 Fortress.pdf
01816D - 67 Monopoly II.pdf
01829D - 67 Unbreakable Cipher.pdf
01838C - Equipment Costs.pdf
01838D - 67 Poker.pdf
01884D - 67 Noughts & Crosses.pdf
01888C - Curve Fitting.pdf
01918D - 67 Keno.pdf
01927D - Advanced Battleship.pdf
01957C - Flow Computations.pdf
01957C - Flow Computations.raw
01957C - Flow Computations.zip
01977C - Baseball Fever.pdf
02013C - Stocks File and Evaluation.pdf
02039D - 67 Super Bagels.pdf
02077C - Word Processor.pdf
02089C - New Moon and Full Moon Day of Month (Improved).pdf
02115C - Stoichiometry of a Chemical Reaction.pdf
02172C - Smooth.pdf
02185C - M-M-S Queue Characteristics.pdf
02211C - Road Grade.pdf
02284C - 41 Sort-Merge for Extended Memory ASCII Files.pdf
02311C - 3 Wire Leveling.pdf
02335D - Star Wars.pdf
02372C - HP-15C Print Code.pdf
02400C - 41 Checkbook Extended.pdf
02418C - Audio Tape Counter Time Convert.pdf
02567C - General Chemistry I.pdf
02578 - Saturation pH.pdf
02592C - Survey Supplement.pdf
02676C - EM Matrix Operations.pdf
02762C - 41 Xfunction Star Trek.pdf
02845D - 67 Space War Plus.pdf
02864C - 41 Submarine Hunt.pdf
02900D - 67 Telepathy.pdf
02913D - 67 Game of 15.pdf
02921D - Lem Lander.pdf
02925D - 67 3D Tic Tac Toe.pdf
02962D - 67 Mine Field.pdf
02999D - Predicting The Apparent Wind.pdf
03037D - 67 Unsymmetrical Vertical Curves.pdf
03055D - 67 Prime Tester.pdf
03100D - 67 Bowling.pdf
03116 - EM File Manager.pdf
03130D - 67 Keno Special.pdf
03134 - 41 Project Planning and Scheduling.pdf
03139D - Curve Fitting.pdf
03150 - Simplex.pdf
03153 - Spreasheet.pdf
03249 41 - Telephone Directory.pdf
03250D - Doppler Effect.pdf
03288D - 67 Checkers.pdf
03290D - Doppler Effect - Interchangeable Solutions.pdf
03319 - 41 Memo and Expense Note Pad.pdf
03398D - Simple 2D Star Trek (2).pdf
03398D - Simple 2D Star Trek.pdf
03837D - 67 Random Number Generator #3.pdf
03859D - 67 Graeco-Latin Square.pdf
03949D - Relativity.pdf
03952D - 67 How Old Are You.pdf
03954D - 67 Down the Middle.pdf
03958D - IQ Tester.pdf

HHC 2024

02335D

Program Description I

Program Title: Star Wars

Contributor's Name: Bruce Hansen
Address: 220 Iris
City: Lansing State: MI Zip Code: 48917

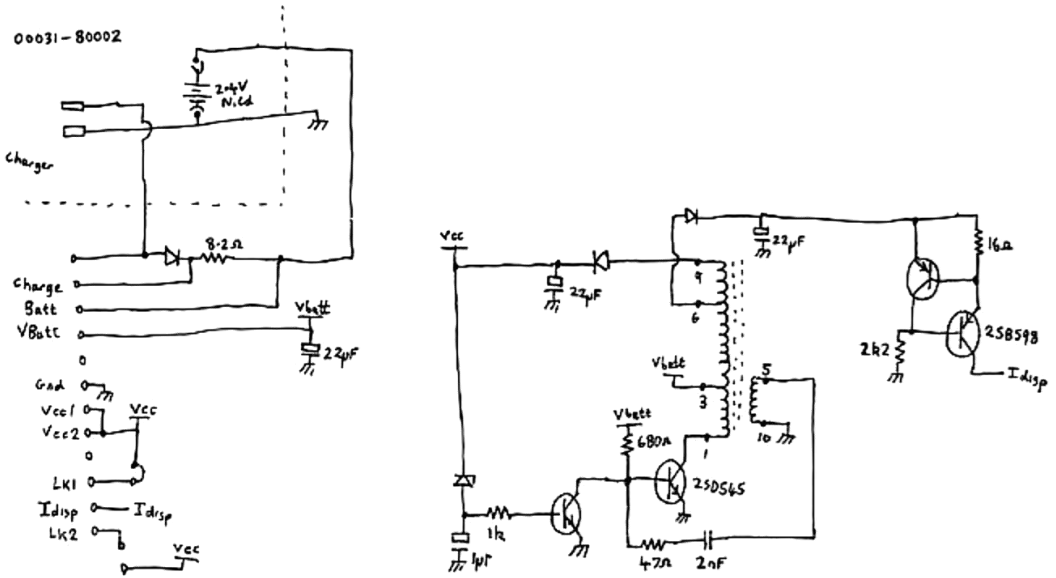
Program Description, Equations, Variables

Your mission is to fly your ship from an enemy planet (point 0,0) to your home base (point 100,100). On the way you will encounter from 2 to 9 enemy starships (you decide how may) which may move faster than you. You may move or shoot on each turn but the enemy shoots at you whatever you do. At the start of the game you are given 2 less missles than the number of enemy. At most you may move 20 units in any direction but remember that the enemy will follow and probably catch you no matter where you go. Your only advantage is that one of your shots may relocate (enemy ships aren't destroyed, just moved very far away out of firing range-theirs and yours) more than one enemy. For example, if more than one ship is 90° from you a shot there would move them all provided your shot passed within 4 units of them. If your ship gets within 5 units of the home base without being destroyed you win. A move is input as follows; ∠θ ENTER↵, Distance traveled, A(MOVE). If you move more than 20 units the move is set to 20. If you try to shoot with no shots left you will stay in the same place but the enemy will close in and shoot at you. To find your position hit RCL A for your X-position, RCL B for y-position. Use graph paper to keep tract of the game.

Operating Limits and Warnings

When taking a shot your ∠ should be from 0-180 or 0-⁻180. An input like 240° will be a miss even if this is where the vessel was.

HPCC Schematics — Tony Duell



HP32E Power Supply

Learning Modules

HP 12C Refinancing a loan

Example 2: Mark wants to buy a new car for his wife and agrees with a 1.5-year, $12,000 loan. The financial institution quotes this loan at 10.5%, compounded monthly. Six months later, Mark is offered an optional loan from another financial institution. The new loan is quoted at 9.25% and Mark asks that the number of payments be set to 12. A 1% fee will be added to the remaining loan balance for the principal of the new loan. What was the first loan monthly payment and what is the amount Mark is going to pay for the new one? Is it a good idea to change?

Solution: Set the known values for the first loan and calculate the PMT:

[1] [2] [0] [0] [0] [PV] [1] [0] [•] [5] [g] [12÷] [1] [•] [5] [g] [12x] [0] [FV] [PMT]

Figure 6

To calculate the remaining balance of the original loan after 6 months, press:

[6] [n] [FV]

Figure 7

To calculate the principal of the new loan, add 1% to this value, make it positive ([CHS]) and store it as the PV:

[1] [%] [+] [CHS] [PV]

Figure 8

To calculate the monthly payment of the refinanced loan, either FV, i and n must be updated accordingly:

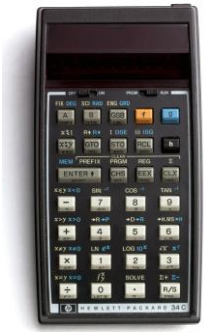
[0] [FV] [9] [•] [2] [5] [g] [12÷] [1] [2] [n] [PMT]

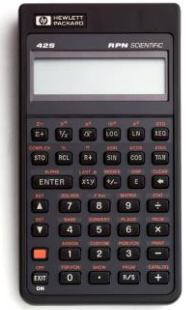
Figure 9

Answer: Both the original loan and the new loan monthly payments are respectively $723.45 and $725.87. Based on these figures, Mark should not refinance the loan, since his payment would increase.

HHC 2024

Press Photos





Greendyk Manuals

Section 4

Statistics Functions

A word about the statistics functions: their use is based on an understanding of memory stack operation (section 3). You will find that order of entry is important for most statistics calculations.

Probability Calculations

The input for permutation and combination calculations is restricted to *nonnegative integers*. Enter the y-value before the *x*-value. These functions, like the arithmetic operators, cause the stack to drop as the result is placed in the X-register.

Permutations. Pressing f Py,x calculates the number of possible different *arrangements* of *y* different items taken in quantities of *x* items at a time. No item occurs more than once in an arrangement, and different orders of the same *x* items in an arrangement *are* counted separately. The formula is

$$P_{y,x} = \frac{y!}{(y-x)!}$$

Combinations. Pressing g Cy,x calculates the number of possible *sets* of *y* different items taken in quantities of *x* items at a time. No item occurs more than once in a set, and different orders of the same *x* items in a set are not counted separately. The formula is

$$C_{y,x} = \frac{y!}{x!\,(y-x)!}$$

Examples: How many different arrangements are possible of five pictures which can be hung on the wall three at a time?

Keystrokes	Display	
5 ENTER 3	3	Five (*y*) pictures put up three (*x*) at a time.
f Px,y	60.0000	Sixty different arrangements possible.

Greendyk Manuals (2)

A common use of a branch is to create a "loop" in a program. For example, the following program calculates and displays the square roots of consecutive whole numbers beginning with the number 1. The calculator continues to compute the square root of the next consecutive whole number until you press R/S to stop program execution (or until the HP-41C overflows).

You may wish to clear some of the programs you have recorded in program memory so that you will have room to include the problems in this and following sections. Check CATALOG 1 to see the names fo the programs and delete the ones you don't wish to save using CLP *(clear program)*. Subsequent problems in the handbook assume that program memory has been cleared of all programs and no key assignments has been made.

Name the program ROOT and assign it to the TAN key location.

Keystrokes	Display	
PRGM GTO · ·	*00 REG 46*	Sets the HP-41C to program mode and to the end of program memory.
LBL		
ALPHA ROOT ALPHA	*01 LBL"ROOT*	The program name.
0	*02 0* _	
STO 01	*03 STO 01*	Stores 0 in R_{01}.
LBL 05	*04 LBL 05*	
1	*05 1* _	
STO + 01	*06 STO + 01*	Adds 1 to the current number in R_{01}.
RCL 01	*07 RCL 01*	Recalls current number from R_{01}.
XEQ		
ALPHA PSE ALPHA	*08 PSE*	Display current number.
√x	*09 SQRT*	Computes the square root of the number.
XEQ		
ALPHA PSE ALPHA	*10 PSE*	Displays square root of current number.
GTO 05	*11 GTO 05*	Transfers execution to the LBL 05 in line 4.
GTO · ·	*00 REG 43*	

Obtaining extra HHC 2024 USB drives

- One is included in your conference packet
- Additional drives may be purchased from my web site:

  https://commerce.hpcalc.org
- Price: US$80 (includes $25 donation to HHC, to subsidize your drives, which were not covered by your conference registration fee)

- Fine print: Most virus scanners will flag “ALREADY.COM” on this drive as a Trojan. This is understandable because of its functionality, but still a false alarm. Worse virus scanners will have other false alarms — ignore them, and even better, stop using them.

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