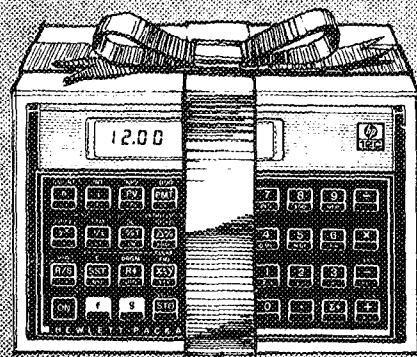


©1985

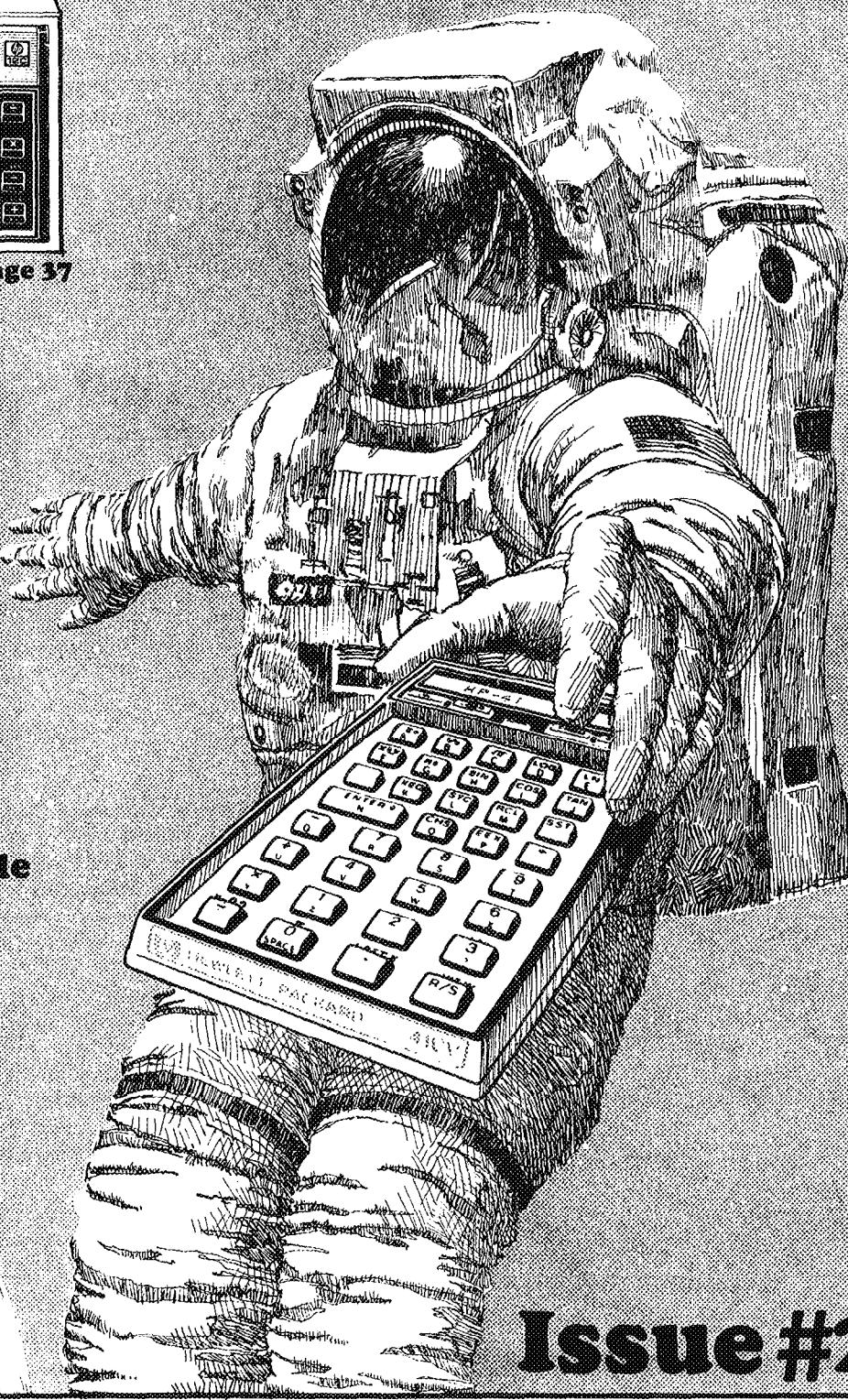
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HP EDUCATOC

CALCULATORS • COMPUTERS • BOOKS



See page 37



**The
Space Shuttle
Takes Along The
HP Programmable
Calculator—
You Can Too!**

See page 4



HEWLETT
PACKARD

Issue #29

27953 Cabot Road, Laguna Niguel, CA (714) 831-2637

NEW ARRIVALS!

ELECTRICAL CIRCUITS FOR STUDENTS

Using your
HP-41 Advantage
by Wadman and Coffin

Brand New



This could be all you ever need to calculate Voltages, Currents, and Powers in AC circuits! The program in this book allows for sinusoidal current or voltage sources, variable frequency, and passive elements of resistance, inductance and capacitance.

With a plain HP-CV you can 'crunch' a circuit of up to 4 nodes; with maximum Extended Memory added you can tackle up to 12 nodes. Plus, you can model mutual inductance, solve for input impedances and Thevenin's and Norton's equivalents, perform parallel-series or Y-Delta conversions, and much more.

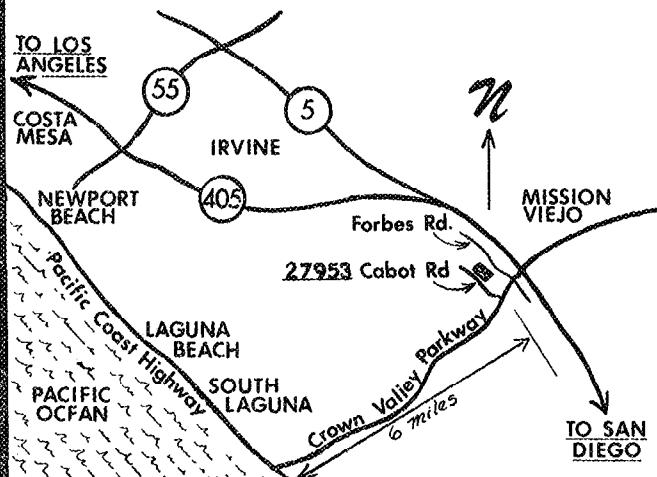
You'll get complete program listings, bar code, and easy-to-take instructions (plus an occasional smile). You'll need an HP-CV or CX with Advantage ROM.

Stock #41A-635, Advantage Circuits, 80p softbound \$9.95

**Need Software Help for Your IBM?
See Our Computer Software Section.**

VISIT OUR STORE!

We're located in Orange County, California, near the intersection of Interstate 5 and Crown Valley Parkway (across the freeway from Mission Viejo Mall).



WHAT IS THE HP ADVANTAGE?

The Advantage is a Brand New 12K ROM Module for the HP-41 — it gives you ALL THREE SPECIAL CALCULATORS, the HP-12C and HP-15C and HP-16C, right inside your 41. Look:

- Time Value of Money Functions (similar to the 12C)
- Comprehensive Matrix and Vector Math, Simultaneous Equations on Real and Complex Numbers, Solve for roots of $f(x)=0$, and Integrate (similar to the 15C)
- Number Base Conversions and Boolean Logic (similar to the 16C)
- Curve Fitting • Differential Equations • Coordinate Transformations

Plus, all these subroutines are Menu-Driven, Fast, and User-Accessible. And it just takes up 1 of your 41's 4 module ports!

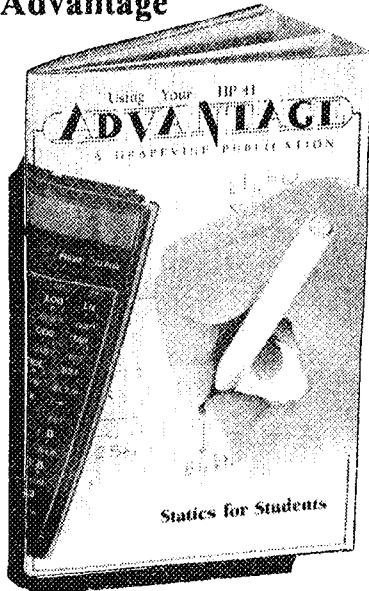
Stock #15055 (Advantage Module) \$42.95

STATICS FOR STUDENTS

Using your HP-41 Advantage

by Wadman and Coffin

Brand New



Breeze through the hundreds of homework, test, and exam problems you encounter in a statics class — just use this book's program and your HP-41CV or CX and Advantage ROM.

Merely draw the picture for your calculator, inputting coordinates of pertinent points and known loads on the structure. Then you choose either to sum the known moments and forces about the origin, or to input the orientation of 3 unknown reactions and solve for their magnitudes — it's that easy!

You can solve the internal forces of a structure by the 'method of sections' with a few keystrokes — that's power! Yet you can quickly calculate simple things, too, like the supporting reactions of a cantilever beam.

Comes with program listings, bar code, and easy-to-take instructions. There's even a review of statics principles and the math.

Stock #41A-634, Statics Advantage, 80p softbound \$9.95

IT'S EASY TO ORDER — use the order form at the rear of this catalog (it folds up to be its own envelope with printed address)

EduCALC

Dear Customer,

If you already have your HP-41, you know that you can control a printer or cassette drive with an HP-IL Loop. But did you know you can optimize the performance of your race car (as well as your space shuttle) or automate your lab so it will run itself overnight? Just check the stuff I have for you in the HP-41 and HP-11 sections. Here are more reasons to order from me.

EASE and **CONVENIENCE**. No driving, no parking, no elbowing through crowds, no rude clerks. Just relax and choose in comfort—then give us a call or drop your order in the mail. I'll get it to you fast.

ASSURANCE and **INSURANCE**. I insist that you get what you want. If not, just send it back to me in new condition after two weeks. I'll send you an instant, no-questions-asked refund—and you and I will still be good friends. So go ahead and order, even if you aren't quite sure.

EXACT DESCRIPTIONS and **FULL DISCLOSURES**. You can trust my catalog—it tells you everything you need to know. No gimmicks and no salesmen spouting misinformation.

PRICE SAVINGS with **BIG DISCOUNTS**. Compare us on price alone!

NEW PRODUCTS and **UNIQUE ITEMS**. Find out about them here—along with things that other sources can't offer you.

MORE CHOICE and **FULL STOCKS**. Nowhere else can you expect to find everything for portable computation.

NO PRESSURE, just **CONFIDENCE**. Since 1976 we've been serving the U.S. and state governments, the armed forces, many universities, and, as well, both large and small corporations. I invite you to join these professionals now as an EduCALC customer.

Sincerely,

Jim Carter
Manager



Meet the ready-to-help people at EduCALC

Edie	Michelle	Carla	Shirley	Nadine	Chuck

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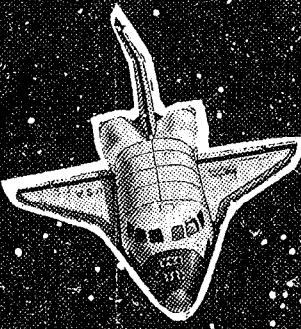
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The Space Shuttle takes along the HP-41 Programmable Calculator—
you can too!



\$165.95
HP-41CV



\$249.95
HP-41CX

WHICH MODEL DO YOU CHOOSE?

Get the maximum memory, most functions, and clocking capabilities — built right in — in the up-to-the-minute HP-41CX. Or, choose the economical HP-41CV for now — you can easily expand it later with plug-in memory and function ROMs. The differences are explained below.

- **Big Main Memory:** 319 data registers or 2233 bytes of program and data memory.
- **Additional Memory:** 124 registers or 868 bytes of "expanded" memory built-in (optional for the CV with Extended Function/Memory Module).
- **Even that is Expandible:** plug in 1 or 2 Extended Memory Modules — each will increase your memory by 238 registers or 1666 bytes—the possible grand total (for all models) is 919 registers or 6433 bytes!
- **24K Operating System:** 200 built-in functions at your fingertip (12K system with 128 functions in model CV, expandable to 24K with Extended Functions/Memory Module).
- **It is a Clock, Calendar, Alarm, Timer, and Stopwatch:** your HP-41 can become the heart of a time-based system controller (optional with Time Module for model CV).
- **Continuous Memory:** programs and data are remembered while your unit is OFF — no need to reprogram it.
- **Lots of Software for Your Profession:** there are many Application Pacs now—for math, science, engineering, business and finance, surveying, navigation, etc. See below in this catalog. Plus magnetic cards, cassettes and bar codes to load many other programs, including over 6000 in the Users' Library.
- **4 Quick and Easy I/O Ports:** just plug in ROM software modules, memory modules, interfacing and more.

• **Take it with you, Anywhere:** it's only 205g (7.2 oz.). With its LCD display you'll get about 6 months use from a set of alkaline batteries which are included (rechargeable batteries optional).

- **RPN Logic:** you see intermediate results of calculations, recover from errors easily.
- **ALPHANUMERIC, User-Definable Keyboard:** assign your own programs to any key — use ordinary words for prompts and labels.
- **Full Documentation to HP Standards of Excellence:** complete, readable manuals and handy quick-reference guides included.
- **You Get the Whole Kit:** tough carrying case, 4 alkaline batteries, keyboard overlay, Users' Library subscription card.

Stock #HP-41CV, List \$225 (Owner's Hndbk. Incl.)... \$165.95

Stock #HP-41CX, List \$325 (Owner's Hndbks. Incl.)... \$249.95

NEED ACCESSORIES?

Stock #H-302, HP-41 Standard Applications	\$5.00
Stock #82152A [Overlay Kit]	\$9.95
Stock #82172-5 [Blank Overlays] 5	\$6.50
Stock #82172A [Blank Overlays] 50	\$54.95
Stock #82120A [Rechg. Bat. Pak]*	\$34.95
Stock #82059D [Recharger]	\$18.95
Stock #82111A [Replacement Soft Vinyl Case]	\$9.95
Stock #41-561 [12 V DC Adaptor]	\$29.95

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NEED EXTRA OWNER'S MANUALS?

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— HP-41 Systems —

PRINTER/PLOTTER

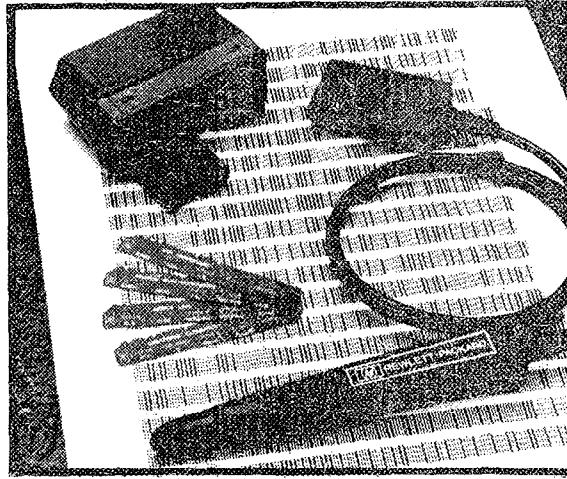
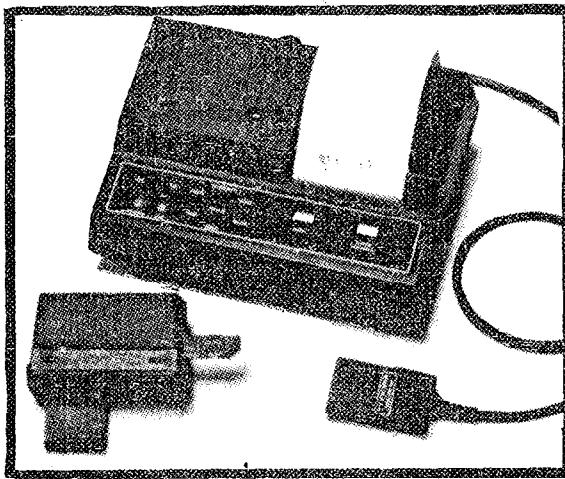


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OPTICAL WAND



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Card Reader

Optical Wand

Use this to edit programs, check long calculations, or present your results in graphic form. The HP-41 Printer/Plotter is a whisper-quiet, battery-operable thermal printer which easily plugs into the HP-41. It gives you numeric, upper and lowercase alpha, double-wide characters, plotting capability and intensity control for optimum contrast and readability. It even allows you to define your own "special" characters. Portable and lightweight, the HP-41 Printer/Plotter operates on batteries. The batteries can be recharged with 82059D AC recharger which is included with the product.

Stock #82143 [Printer] List \$385 \$309.95

(Owner's Hndbk. Incl.)

Stock #H-704, HP-82143A Prntr/Pltr

Owner's Hndbk, Spanish \$10.00

Stock #82045A [Therm. Paper] blue, 6 rolls \$8.50

Stock #82175A [Therm. Paper] black, 6 rolls \$8.50

Stock #82033A [Rechg. Bat. Pk.] \$24.95

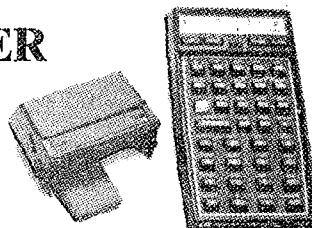
Stock #82059D [Recharger] \$18.95

Stock #82037A [Reserve Power Pak] \$59.95

Stock #41-561 [12 V DC Adaptor] \$29.95

CARD READER

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The HP-41 Card Reader (and writer) lets you save programs and data on small magnetic cards. This "smart" Card Reader keeps track of cards as they are read and it even prompts you for the next card. A security feature permits a program to be run but not reviewed or altered through normal operations. An added bonus is that it also accepts program cards from the HP-67 and HP-97 calculators. (Owner's Hndbk. Incl.)

Stock #82104 [Card Reader], List \$195 \$159.95

Stock #13142 (Mag Card Holder) \$4.25

Stock #H-702, Crd. Rdrs. Owner's Hndbk, Spanish \$10.00

Stock #13141 (Mag. Cards) 40, no holder \$15.95

Stock #13143 (Mag. Cards) 120, no holder \$39.95

Stock #13206 (Mag. Cards) 1000, no holder \$235.95

NEED EXTRA OWNER'S MANUALS?

Stock #41-90526 HP-41CV Owner's Man-Basic Oper. \$10.00

Stock #41-90474, HP-41CX Owner's Hndbk, Vol. I \$10.00

Stock #41-90492, HP-41CX Owner's Hndbk, Vol. II \$15.00

Stock #H-701, Card Readers Owner's Hndbk \$ 5.00

Stock #H-703, HP-82143A Prntr/Pltr Owner's Hndbk \$ 5.00

Stock #H-705, Optical Wand Owner's Hndbk \$ 5.00

Stock #H-707, "Creating Your Own Barcode" Man. \$12.50

Stock #H-711, HP-IL Video Interface Owner's Hndbk \$10.00

Stock #H-714, Ext. Funct./Mem. Mod. Owner's Hndbk \$10.00

Stock #H-715, Time Mod. Owner's Hndbk \$10.00

Stock #41-90531, Operation in Detail (CV) \$14.95

HP-41 Modules

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MORE MEMORY FOR YOUR HP-41

Do you ever run out of memory—and have to discard programs and data you want to save? Why not exploit the fantastic potential of your HP-41—get yourself the freedom of enough space, NOW!

QUAD MEMORY MODULE *Special \$39.95*

Plug in only 1 Quad Memory Module to add 256 registers or 1,792 bytes — then your "HP-41C/Quad" has the same memory capacity as the HP-41CV (HP-41C only). *\$39.95*
Stock #82170 (Quad Memory Module) List \$75 \$63.75

HP-41 Modules continued



EXTENDED FUNCTIONS for the HP-41CV or HP-41C Quad

Plug in the Extended Functions/ Memory Module (EFM) to get 868 more bytes of memory — plus many new functions you can call on, such as: Clear all key assignments, Delete named program and all following it, Restore flag status, Create data file, Directory of Extended memory files, Replace last program in main memory, Purge file, Copy text file to mass storage—38 in all. (Owner's Man. Incl.)

Stock #82180 (Ext. Funct./Mem. Module) List \$75 .. \$63.75

EXTENDED MEMORY



for the HP-41CX or HP-41CV/EFM or HP-41-C/Quad/EFM

Plug in 1 or 2 Extended Memory Modules—each module adds 238 registers or 1666 bytes to your machine. With both added you'll have a grand total memory space of 6433 bytes, including 4200 bytes of extended memory.

Stock #82181 (Extended Memory Module) List \$75 .. \$63.75

TIME MODULE



The Time Module expands your HP-41 computing system with time information and time-controlled operations. Using the quartz-crystal controlled Time Module, your HP-41 can become the heart of a time-based system controller, an alarm clock, an appointment reminder, a calendar, a timer, even an advanced stopwatch. Already built into 41-CX. (Owner's Manual Incl.)

Stock #82182 (Time Module) List \$75 .. \$63.75

Stock #90395, Time Module Solution Book .. \$14.50

DOUBLE EXTENDED MEMORY MODULE

S. O. S.

for the HP-41CX or HP-41CV/EFM or HP-41C/Quad/EFM

New

Use only one port—this single module contains two 82181 extended memories, so you'll save a port for other uses. Guaranteed 1 year, through EduCALC.

Stock #41-600 (Double X Mem Module) List \$185.00 \$149.95

TRIPLE MODULE—DOUBLE X MEM PLUS X FUNCTIONS



Use only one port— you save two ports! This single module contains two 82181 extended memories plus one 82180 extended functions. Guaranteed 1 year.

Stock #41-601 (Dbl X Mem/XFNS Triple Module) List \$285.00 ... \$235.95

TRIPLE MODULE from S. O. S.

Stock #41-627 (Math Statistics plus two 82181 extended memories) .. \$219.95

Stock #41-614 (HP-41 + EXTENDED I/O) 219.95* Refundable with the later purchase of the module.

PPC ROM

**Special Price
for Manual Only****PPC**

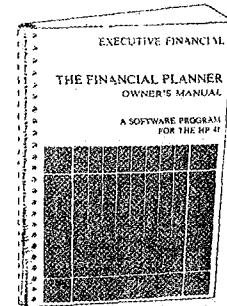
The PPC ROM is an 8K Custom ROM module manufactured by HP for PPC, an independent user organization. The accompanying 500-page manual exhaustively documents the use of its 122 programs in 4 categories — math, peripheral, utility, and synthetic. State-of-the-art programs allow you to sort registers, alpha compare, do matrix operations, create synthetic instructions, assign any 2-byte function to a key, analyze barcode, do multiple function and precision plotting, perform calendar operations, count bytes, fit curves, compute derivatives, do financial calculations, integrate, and much, much more. The most powerful HP-41 ROM available, and the best value to boot.

The PPC ROM contains 67 synthetic programs. The 500-page manual is an excellent source of information for intermediate users of SP who want to learn more.

Stock #A-518 (PPC ROM) List \$95 .. \$84.95

Stock #A-518M, Manual only* .. \$12.95

THE FINANCIAL PLANNER



If your goal or business is to use capital and end up wealthy, then read on. This group of 7 programs fills the 8K ROM and combines the ability and portability of the HP-41 with the expertise of a group of financial professionals to provide you with simple financial solutions of almost any long-term complex financial problem. It's easy to use; the machine asks the questions and then provides the answers. It covers the following subjects: Indexed income, retirement income analysis, mixed calculations compound interest, financial programs, and amortization.

It's complete with an easy-to-use 52 page manual. Use it with any HP-41, printer optional.

Stock #A-544 (Financial Planner Module) List \$299 \$249.95

Stock #A544M, Financial Planner Manual* only .. \$20.00

ZENROM **New**

Zengrange

Synthetiker's delight — it's like doubling the memory of your HP-41. Just plug in this 4K machine-language ROM and ALL SYNTHETIC FUNCTIONS become automatic and commonplace, without key assignments or memory used. Keyboard overlay included to show all the options for synthetic text functions. RAM Editor function works anywhere in RAM. Machine Code Editor function accesses anywhere in ROM (edits any plugged-in MLIL or Protocoder II).

Carefully thought-out so it's easy and efficient to use. There is a manual with good, clear instructions — and whole chapters on the theory of Synthetics and Machine Code which even a beginner can read! (Owner's Manual Included)

Stock #A-550 (ZENROM) List \$115.00 .. \$99.95

Stock #A-550M, Manual only* .. \$19.95

— HP-41 Systems —

HORSE RACE HANDICAPPING PROGRAM

Brand New

Alameda
Management

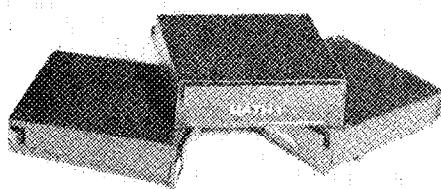
Put yourself at a real advantage over other bettors. Speed Machine II tells you when and how to bet to maximize your return on every dollar—combines fractional and final race times to select the top 4 horses in each race and tells you under what circumstances and at what odds to make your bet.

Contains statistics on every thoroughbred and harness track in North America, and it can store data on 120 horses at once. Includes stop-watch (CX only) and money-management functions.

Requires HP-CV or -CX (or HP-C with quad memory module). Plug-in module comes with keyboard overlay, manual and 800 service number.

Stock #41-533 (Speed Mach II module) List \$300.....\$259.95

APPLICATION PACS FOR THE HP-41 MODULES



Transform your HP-41 into an answer machine. These modules contain tremendous new power for your HP-41. Simply plug in the module and in some cases install a keyboard overlay and you have hundreds of hours of proven programming at your finger-tips. It's all pre-programmed with everything the experts could think of. Here are the available Application Pacs and the subject areas they cover. Complete with owner's manual.

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Clinical Lab and Nuclear Medicine

Clinical Chemistry • Beer's Law • Body Surface Area • Creatinine Clearance • Blood Acid-Base Status • Oxygen Saturation and Content • Red Cell Indices

Nuclear Medicine • Total Blood Volume • Thyroid Uptake • Radioactive Decay Corrections

Radioimmunoassay Statistics • Basic Statistics • Chi-Square Evaluation and Distribution • t Statistics • t Distribution

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Thermal and Transport Science

Equations of State • Polytropic Processes for an Ideal Gas • Isentropic Flow for Ideal Gases • Conduit Flow • Energy Equation for Steady Flow • Heat Exchanges • Black Body Thermal Radiation • Includes unit management system subroutines

Stock #15019.....\$32.95

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Alameda
Management

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Stock #15049.....\$39.95

ENGINEERING

Circuit Analysis

General Network Analysis • Ladder Network Analysis

Stock #15006.....\$32.95

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Circular Cams • Generation of a Four Bar Linkage • Progression of a Four Bar System • Forces • Standard External Involute Spur Gears • Helical Spring Design • Forced Oscillator with Arbitrary Function • Coordinate Transformation • Points on a Circle • Circle by Three Points • Unit Conversions

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Traverse, Inverse and Sideshots • Compass Rule Adjustment • Transit Rule Adjustment • Intersections • Curve Solutions • Horizontal Curve Layout • Vertical Curves and Grades • Resection • Predetermined Area • Volume by Average End Area • Volume by Borrow Pit • Coordinate Transformation

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Z-Factor • Gas Isothermal Compressibility • Gas Formation Volume Factor • Gas Viscosity • Pseudocritical Temperature and Pressure from Gas Gravity • Gas Properties from Composition • Oil Isothermal Compressibility • Oil Formation Volume Factor • Oil Viscosity • Gas-Oil Ratio • Bubble Point Pressure • Two-Phase Formation Volume Factor • Water Isothermal Compressibility • Water Formation Volume Factor • Water Viscosity • Gas-Water Ratio • Rock Compressibility • Total Isothermal Compressibility. Includes unit management systems subroutine.

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Section Properties • Beams • Simply Supported Continuous Beams • Columns • Mohr Circle Analysis • Strain Gage Data Reduction • Soderberg's Equation for Fatigue • RPN Vector Calculatot

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— HP-41 Systems —

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Financial Decision

Compound Interest Solutions • Internal Rate of Return • Modified Internal Rate of Return (FMRR) • Net Present Value • Loan Amortization Schedules • Depreciation Schedules • Bond Price and Yield • Days Between Dates

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Stock #15026 \$32.95

MISCELLANEOUS

Auto/Start Duplication ROM

Stock #15042 \$32.95

Aviation (for pre-flight use)

Flight Management • General Aircraft Weight & Balance Determining in-flight Winds • Flight Plan Position by one or two VORs • Mach Number & True Airspeed.

Stock #15018 \$32.95

Home Management

Home Budgeting • Travel Expense Record • Stock Portfolio Evaluation • Your Financial Calculator • Remaining Balance and Accumulated Interest • Tax Free Individual Retirement Account (IRA) or Keogh Planning • The True Cost of an Insurance Policy • Checking Account Reconciliation • Home Owner's Equity Analysis • The Rent or Buy Decision

Stock #15023 \$32.95

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Super Bagels • Biorythms • Craps • Hangman • Pinball • Space War • Submarine Hunt • Random Number Generator

Stock #15022 \$32.95

HP-1L Development Module

Stock #15043 \$73.95

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Rhumb-line Course and Distance • Great Circle and Distance • Dead Reckoning • Sight Reduction • Perpetual Almanac • Stars, Sun, Planets, Moon • Almanac Interpolator • Great Circle Position • Rhumb-line Position • Great-Circle Plotting and Voyage • Planning • Sight Reduction Table • Calendar Functions • Greenwich Sidereal Time • Star Almanac • Fundamental Arguments • Astronomical Coordinate Conversion • Longitude to Latitude • Input/Output Routines.

Stock #15017 \$44.95

Standard Applications Module

RPN Primer • Word Guessing Games • Arithmetic Teacher • Hexadecimal-Decimal Converter • Financial Calculations • Root Finder • Curve Fitting • Vector Operations • Blackjack • Calendar Functions

Stock #15001 \$32.95

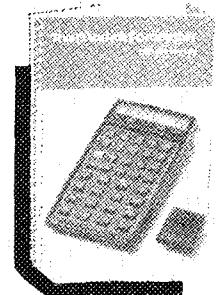
ADVANTAGE

Real and Complex Matrix Operations • Simultaneous Equations on Real and Complex Numbers • Solve (roots of $f(x)=0$) and Integrate (similar to HP-15C) • 3-dimensional Vector Operations • Complex Number Operations • Number Base Conversions and Boolean Logic (similar to HP-16C) • Curve Fitting • Roots and Evaluation of Polynomial Equations • Differential Equations • Coordinate Transformations • Time Value of Money (similar to HP-12C) • User-Accessible Subroutines.

Stock #15055 Advantage Module **New** \$42.95

MARKET FORECASTER

William Finnegan
Associates



Foretell the size and direction of Stock Market movement for the next 2 to 4 months — use this new program and a current copy of *Barron's*. You can literally see into the future utilizing an econometric model with a correlation to future market moves of $r = .90$ over the last 22 years. Over the same period, simulated returns were 33.6% to 42.3% per year, after commissions. On funds managed since 1979, the Market Forecaster has never had a losing year. In fact, it has tripled the performance of the Dow with half the investment exposure. Now you can use this same technology to tell when to buy stocks, mutual funds, or options, or when to retreat to the sidelines.

This amazing power comes in an HP-41 module with a keyboard overlay and manual of explanations and instructions. Price of Manual alone is deductible from later purchase of module. Order now — if you wait till tomorrow you'll be another day behind.

Stock #41-131 (41 Forecaster Module) List \$285 \$269.95

Stock #41-131B (41 Forecaster Manual) List \$22 \$20.00

— HP-41 Systems —

EXTENDED I/O MODULE

The module provides 59 functions which extend the I/O capabilities of the HP-41 beyond those provided by the HP-IL Module (82160). HP-IL Module is required for use with most functions of the extended I/O Module. With the Extended I/O Module, the HP-41 can be used to control HP-IL devices or non HP-IL instruments through HP-IL interfaces. The Extended I/O functions can be divided into 4 main categories:

1. MASS STORAGE FUNCTIONS
2. CHARACTER MANIPULATION FUNCTIONS
3. HP-IL CONTROL FUNCTIONS
4. ADVANCED CONTROL FUNCTIONS

Stock #82183 (Extended I/O Module) List \$75.....\$63.75

PLOTTER MODULE

The 8KB Plotter Module fits easily into one of the HP-41's four ports to give you bar code generation and plotting capabilities. The Plotter Module enables you to use your Series 40 computer with the HP7470A Graphics Plotter (opt. 003) to plot Series 40 barcode as well as non-HP barcode. It also enables a Series 40 to print Series 40 barcode using the HP 82162A Thermal Printer/Plotter. Take advantage of ready-to-go barcode generation programs or write your own. The Plotter Module also allows you to produce high-quality plots on HP's low cost, HP7470A Graphics Plotter. This Module contains 52 plotter functions to help you design your own programs.

Stock #82184 (Plotter Module), List \$75.....\$63.75

SURVEYOR'S CO-OP MODULE



Available by direct purchase for the first time!

What is a surveyor's greatest desire? Is it More Point Storage? Fewer Errors? More Efficiency? The Ability to Backsight on the Sun?

With this module in your HP-41 you can hold 400 points and work with thousands of points using a cassette or disc drive. You can compute true azimuth of backsight from sun without ephemeris. Interface with desk-top computers. Carry elevations and/or notes with North and East coordinates and compute by point number.

Stock #41-581 (Co-op Module) List \$295.....\$279.95

HP-IL INTERFACE MODULE



New
Low Price!

The HP-IL Interface Module plugs into any one of the four ports in the HP-41, connecting your handheld computer with an ever-growing family of HP-IL peripherals and instruments. The module gives your HP-41 control of up to 30 devices on the loop. There are three function sets supplied by the HP-IL Module: printer, mass storage, and general input/output (I/O). It includes such functions as Accumulate column into print buffer, List program lines, Print Y-axis, Plot function interactively, Print stack, Remove stored file, Store program onto Medium, Copy all storage registers into data file, Set interface to auto mode, Input status information from selected device, Set all devices to low power state, Trigger all devices set to respond and 43 more. (Owner's Hndbk. Incl.)

Stock #82160 [HP-IL Module] List \$125.....\$99.95

CCD MODULE (translated from *View* the German)

Dr. W. Baltes
& W. Kotz



New 8K microcode ROM adds more than 100 keywords to your HP-41—plus enhancements like lowercase characters and synthetics (STO M) right from the keyboard. Direct synthetic programming with normal keystrokes, and new CAT-, XEQ-, and ASN-funktions. PEEK & POKE utilities, with access to all RAM locations at byte level, and full handling of hex. 30 new math funktions handle matrices in RAM or X-Memory, new I/O funktions with error checking and formatted output.

Complete with English manual, quick reference guide and keyboard overlay.

Stock #A-562 (CCD Module).....\$149.95

XQ2 KEYBOARD

Brand New

LAITRAM

LAITRAM XQ2

05	—	1 SWK 2 GR8 3 PRT	1 IMA 2 DTA 3 ARCH	1 NSD 2 APPC 3 APIC
T	—	4 PRT 5 GR8 6 IMA	7 DTA 8 ARCH 9 NSD	10 APIC 11 APPC 12 APIC
A	RUN	7 VPR 10 c 5 b	7 PRT 6 DTA 5 b	13 AVIN 14 CASE
C	MS	7 PRT	14 CAT 15 XEQ	15 ASN 16 BSCN 17 WDTN
E	RND	4 PRT	16 FMT 17 XEQ	18 RDS 19 DATES
X	PRT	1 PRT 2 GR8 3 PRT	19 XEQ 20 XEQ	20 CAT 21 XEQ
P	PRG	2 GR8	21 XEQ 22 XEQ	22 XEQ 23 XEQ
R	PLOT	9 PLOT	23 XEQ 24 XEQ	24 XEQ 25 XEQ
M	PRG	9 PLOT	25 XEQ 26 XEQ	26 XEQ 27 XEQ
S	PRG	9 PLOT	27 XEQ 28 XEQ	28 XEQ 29 XEQ
G	PRG	9 PLOT	29 XEQ 30 XEQ	30 XEQ 31 XEQ
H	PRG	9 PLOT	31 XEQ 32 XEQ	32 XEQ 33 XEQ
I	PRG	9 PLOT	33 XEQ 34 XEQ	34 XEQ 35 XEQ
Z	PRG	9 PLOT	35 XEQ 36 XEQ	36 XEQ 37 XEQ
04	+	1 A 2 B 3 C	4 D 5 E 6 F	7 G 8 H 9 I
Z	APPEND	2 X 3 L	5 M 6 N 7 O	8 P 9 Q 10 R
—	REG	3 T 4 U	7 V 8 W 9 X	11 Y 12 Z
X	MEAN	7 T 8 X	13 R 14 D	15 E 16 F 17 G
S	SQRT	4 LBL	18 G 19 R 20 D	21 E 22 F 23 G
E	CEIL	5 XEQ	24 G 25 R 26 D	27 E 28 F 29 G
F	CEIL	6 XEQ	28 G 29 R 30 D	31 E 32 F 33 G
B	MOD	7 RPN	31 G 32 R 33 D	34 E 35 F 36 G
M	9 P.M.	8 LBL	35 G 36 R 37 D	38 E 39 F 40 G
G	9 DEC	9 LBL	37 G 38 R 39 D	41 E 42 F 43 G
R	9 SIGN	10 LBL	40 G 41 R 42 D	44 E 45 F 46 G
D	20 DEC	11 LBL	42 G 43 R 44 D	46 E 47 F 48 G
O	3 OCT	12 LBL	44 G 45 R 46 D	48 E 49 F 50 G
N	3 OCT	13 LBL	46 G 47 R 48 D	52 E 53 F 54 G
03	X	10 T 11 U	12 V 13 W 14 X	15 Y 16 Z
Y	BST	1 S 2 RPN 3 SWAP	4 T 5 E 6 F	7 G 8 H 9 I
—	—	7 SWAP 8 T	10 V 11 W 12 X	14 Y 15 Z
X	—	9 RPN	13 V 14 W 15 X	17 Y 18 Z
S	—	10 SWAP	15 V 16 W 17 X	19 Y 20 Z
W	—	11 RPN	17 V 18 W 19 X	21 Y 22 Z
—	—	12 SWAP	19 V 20 W 21 X	23 Y 24 Z
02	X	13 T 14 U	15 V 16 W 17 X	19 Y 20 Z
SST	—	18 RPN	21 V 22 W 23 X	25 Y 26 Z
—	—	19 SWAP	23 V 24 W 25 X	27 Y 28 Z
—	—	20 RPN	24 V 25 W 26 X	28 Y 29 Z
—	—	21 SWAP	25 V 26 W 27 X	29 Y 30 Z
—	—	22 RPN	26 V 27 W 28 X	30 Y 31 Z
01	L	23 T 24 U	25 V 26 W 27 X	29 Y 30 Z
SHIFT	—	28 RPN	31 V 32 W 33 X	35 Y 36 Z
—	—	29 SWAP	32 V 33 W 34 X	36 Y 37 Z
—	—	30 RPN	33 V 34 W 35 X	37 Y 38 Z
—	—	31 SWAP	34 V 35 W 36 X	38 Y 39 Z
—	—	32 RPN	35 V 36 W 37 X	39 Y 40 Z
—	—	33 SWAP	36 V 37 W 38 X	40 Y 41 Z
—	—	34 RPN	37 V 38 W 39 X	41 Y 42 Z
—	—	35 SWAP	38 V 39 W 40 X	42 Y 43 Z
—	—	36 RPN	39 V 40 W 41 X	43 Y 44 Z
—	—	37 SWAP	40 V 41 W 42 X	44 Y 45 Z
—	—	38 RPN	41 V 42 W 43 X	45 Y 46 Z
—	—	39 SWAP	42 V 43 W 44 X	46 Y 47 Z
—	—	40 RPN	43 V 44 W 45 X	47 Y 48 Z
—	—	41 SWAP	44 V 45 W 46 X	48 Y 49 Z
—	—	42 RPN	45 V 46 W 47 X	49 Y 50 Z
—	—	43 SWAP	46 V 47 W 48 X	50 Y 51 Z
—	—	44 RPN	47 V 48 W 49 X	51 Y 52 Z
—	—	45 SWAP	48 V 49 W 50 X	52 Y 53 Z
—	—	46 RPN	49 V 50 W 51 X	53 Y 54 Z
—	—	47 SWAP	50 V 51 W 52 X	54 Y 55 Z
—	—	48 RPN	51 V 52 W 53 X	55 Y 56 Z
—	—	49 SWAP	52 V 53 W 54 X	56 Y 57 Z
—	—	50 RPN	53 V 54 W 55 X	57 Y 58 Z
—	—	51 SWAP	54 V 55 W 56 X	58 Y 59 Z
—	—	52 RPN	55 V 56 W 57 X	59 Y 60 Z
—	—	53 SWAP	56 V 57 W 58 X	60 Y 61 Z
—	—	54 RPN	57 V 58 W 59 X	61 Y 62 Z
—	—	55 SWAP	58 V 59 W 60 X	62 Y 63 Z
—	—	56 RPN	59 V 60 W 61 X	63 Y 64 Z
—	—	57 SWAP	60 V 61 W 62 X	64 Y 65 Z
—	—	58 RPN	61 V 62 W 63 X	65 Y 66 Z
—	—	59 SWAP	62 V 63 W 64 X	66 Y 67 Z
—	—	60 RPN	63 V 64 W 65 X	67 Y 68 Z
—	—	61 SWAP	64 V 65 W 66 X	68 Y 69 Z
—	—	62 RPN	65 V 66 W 67 X	69 Y 70 Z
—	—	63 SWAP	66 V 67 W 68 X	70 Y 71 Z
—	—	64 RPN	67 V 68 W 69 X	71 Y 72 Z
—	—	65 SWAP	68 V 69 W 70 X	72 Y 73 Z
—	—	66 RPN	69 V 70 W 71 X	73 Y 74 Z
—	—	67 SWAP	70 V 71 W 72 X	74 Y 75 Z
—	—	68 RPN	71 V 72 W 73 X	75 Y 76 Z
—	—	69 SWAP	72 V 73 W 74 X	76 Y 77 Z
—	—	70 RPN	73 V 74 W 75 X	77 Y 78 Z
—	—	71 SWAP	74 V 75 W 76 X	78 Y 79 Z
—	—	72 RPN	75 V 76 W 77 X	79 Y 80 Z
—	—	73 SWAP	76 V 77 W 78 X	80 Y 81 Z
—	—	74 RPN	77 V 78 W 79 X	81 Y 82 Z
—	—	75 SWAP	78 V 79 W 80 X	82 Y 83 Z
—	—	76 RPN	79 V 80 W 81 X	83 Y 84 Z
—	—	77 SWAP	80 V 81 W 82 X	84 Y 85 Z
—	—	78 RPN	81 V 82 W 83 X	85 Y 86 Z
—	—	79 SWAP	82 V 83 W 84 X	86 Y 87 Z
—	—	80 RPN	83 V 84 W 85 X	87 Y 88 Z
—	—	81 SWAP	84 V 85 W 86 X	88 Y 89 Z
—	—	82 RPN	85 V 86 W 87 X	89 Y 90 Z
—	—	83 SWAP	86 V 87 W 88 X	90 Y 91 Z
—	—	84 RPN	87 V 88 W 89 X	91 Y 92 Z
—	—	85 SWAP	88 V 89 W 90 X	92 Y 93 Z
—	—	86 RPN	89 V 90 W 91 X	93 Y 94 Z
—	—	87 SWAP	90 V 91 W 92 X	94 Y 95 Z
—	—	88 RPN	91 V 92 W 93 X	95 Y 96 Z
—	—	89 SWAP	92 V 93 W 94 X	96 Y 97 Z
—	—	90 RPN	93 V 94 W 95 X	97 Y 98 Z
—	—	91 SWAP	94 V 95 W 96 X	98 Y 99 Z
—	—	92 RPN	95 V 96 W 97 X	99 Y 100 Z

Access any HP-41 function with 1, 2, or at most 3 keystrokes — spelling functions is no longer necessary! Just plug the XQ2 ROM into your C, CV, or CX, install the easy-to-use keyboard overlay, and turn on your instrument. It will wake up with only 16 keys active — and you will begin saving hours of key-punching labor!

Ted Wadman, coauthor of *An Easy Course in Programming the HP-41*, advises that: **Anyone who is heavily into programming the HP-41 will find it worth their time to become familiar with this keyboard. It's a thoughtful design.** Of course, it isn't perfect — you can't use it with the ZENROM or any program that uses local ALPHA labels, such as finance ROMs.

Stock #41-630 (XQ2 Keyboard) module.....\$119.95

— HP-41 Systems —

OILWELL1 MODULE for the HP-41 *Brand New*

Daly Drilling

Increase Safety and Efficiency — Reduce Workload for day-to-day Supervisory Staff by automating calculations.

Capacities, Displacements, Volumes, Weights, Pressure Losses, Surge-Swab Pressures, E.C.D.'s, Mud Rheology, Optimized Bit Hydraulics, Pipe Specs, Wireline Work Done, and much more.

Requires HP-41CV, CX, or 41-C with 2 memory modules Card Reader and Printer recommended. Complete and detailed, 200p wire-bound Manual included, plus handy, summary Field Operating Cards.

Stock #41-628 (41-Oilwell1) module..... \$219.95

HYDRAULICS PAC for the HP-41

Hydracomp

This Program Module, Keyboard Overlay and 43p. User Manual converts your HP-41 into a powerful hydraulics engineering tool. Analyzes system design problems and then supplies solutions. Pays for itself in minutes for Engineering Sales or Service Personnel! It is a valuable learning tool, too, with English input prompts and output labels. 6 PRESSURE Programs (unit conversions, drop with flow, hose/pipe/tube-sizing, fluid compression). 4 VOLUME Programs (unit conversions, liquid/gas change with temperature, accumulator sizing), 3 VISCOSITY Programs (conversions, value/orifice sizing), 5 AREA Programs (cylinder area/sizing, single/double rod cylinder sizing, ram sizing), 6 ROTARY POWER Programs (hydrostatic/winch transmission sizing, pump bearing life, kw $\frac{1}{2}$ hp conversion, pump hp), 4 TEMPERATURE Programs (unit conversions, change with throttling, gas-pressure change, heat-exchanger sizing). Descriptive literature available on request.

Stock #41-148 (Hydraulics Pac)..... \$99.95

CELESTIAL NAVIGATION with HP-41 *Brand New*

MNP STAR

Flight Deck Programs by a 2000-hour pro — useful to Marine Navigators and Astronomers, too.

All come on magnetic cards with complete documentation and instructions.

Local Hour Angle, Sidereal Hour Angle, Polaris Latitude; plus navigator's intercept for Stars, Sun, Moon, and Planets. For detailed descriptions, order Stock #AF-N LIT, FREE. Stock #41-631 (Celestial Nav-41) List \$48..... \$43.95

TORNADOBLOCK FORECASTING for the HP-41

Brand New

MNP STAR

Effectively guides you through the development of the Activity Area in 4 stages, then describes the Tornado Block. Stock #41-632 (Tornado Block-41)..... \$15.00

TECHNICAL INDICATOR PROGRAM

Carlson/
Jenkinson

With this program and just two minutes per day you can calculate your own market indicators—fresh daily for the NYSE, ASE, NASDAQ, or other markets. You get all sixteen of them: McClellan Oscillator and Summation Index, Trader's Index, Advance-Decline Line and Oscillators, Magic-T and Volume Oscillators. Then you use the easy guidelines and examples to interpret overbought/oversold conditions and get buy/sell signals, determine bottoms and forecast tops. No programming experience necessary. Requires HP-41CV calculator (or HP-41C with Quad Module). Includes descriptions, instructions, examples and interpretations for all indicators.

Stock #41-99, Technical Ind, 67p comb-bound..... \$29.95

Stock #41-99MC (Magnetic Card for this program)..... \$9.00

Stock #41-99BC (Bar Code for this program)..... \$5.00

CMT-110 CUSTOM ROM DEVELOPMENT TOOL

CMT

Emulates 4K, 8K, and 16K EPROM Modules for the HP-41 — so you can design your own software with maximum flexibility and lowest investment. It's about the size of the HP-41 and uses standard-size EPROMS in Zero Insertion Force sockets.

Stock #CMT-110 (ROM Tool)..... \$215.95

SILJAK POLYNOMIAL ROOTFINDER

Sierra Digital
Research

Solve every polynomial, even those with complex coefficients, and without even having to guess any starting values or having to find derivatives. Algorithm comes from the *Journal of the Association for Computing Machinery*, handles any degree up to 10, has accuracy of 1.E-6.

You'll need an HP-41CV with Ext. Functions Module and either Card Reader or Cassette Drive.

Stock #41-577 (Siljak mag cards)..... \$16.95

Stock #41-578 (Siljak microtape)..... \$22.95

OS-41 *New*

AN OPERATING SYSTEM for the HP-41 and PERIPHERALS

Beers/Beers

Take one GIANT STEP, you 41 users — here are more than 70 programs which automate various tasks of data and program manipulation for you. You'll be able to quickly transfer/duplicate files/programs to/from tape/disc/main memory/X-mem in barcode/ASCII/program/data form. On the way you can sort alphabetically or create new files as desired.

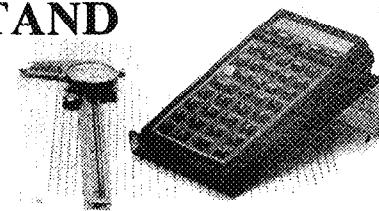
All these programs come in barcode, and there's an extraordinary 472-page manual that gives you state-of-the-art options, warnings and examples in abundance — an education in itself! This is written from both sides of the fence — the authors are a professor and his son, now an HP Customer Support Engineer.

Stock #41-591, (OS-41 with Barcode)..... \$41.95

—HP-41 Systems—

DESKTOP STAND for the HP-41

Also Fits HP-21, -22,
-32, -33



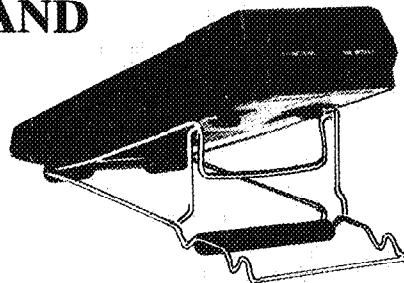
Digital Key Systems

Just the right working angle for your head and eye. Smoky acrylic, simple and handsome. Or, available in solid oak.

Stock #41-597 [HP-41 Acrylic Stand] List \$14.95 \$9.95
Stock #41-642 [HP-41 Oak Stand] \$14.95

HP-41 STAND

Computer Bases



If you prefer to tilt your machine instead of your head for the best viewing angle then this is your answer. It is made of stainless steel and easily attaches to the bottom of your HP-41 (super adhesive). It allows 2 positions of viewing, supports a card reader, still fits in the original case and looks good.

Stock #A-538 [HP-41 Stand] List \$12.95 \$11.95

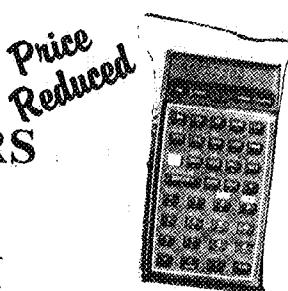
PROTECTOR for HP-41 CALCULATORS

COMP-U-BAG

Zip out dirt and moisture—
you can use your calculator
right in the oil field (or the pillow fight) if it's in one of these
flexible, transparent bags (not sealed against pressure); used
daily, each bag will last a couple months.

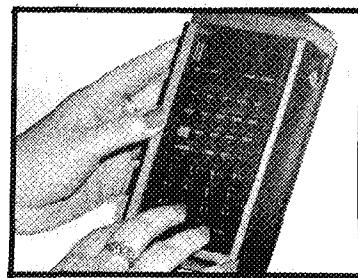
Fits into leather field cases, with easy access to plug-in
ports.

Stock #A-543 [Comp-U-Bag] \$1.50
or buy 10 for \$13.50



UGLY PROTECTIVE CASE

Brand New



You can key your HP-41 right through the transparent face of this dust, scratch, and impact resistant case. You won't like its looks while you're using it, but it will help your 41 survive some fairly hazardous duty. Made of soft plastic and foam with belt ring on back.

Stock #41-610 [Ugly41 Case] List \$24.95 \$22.95

BATTLE CASE FOR YOUR HP-41

Zenrange



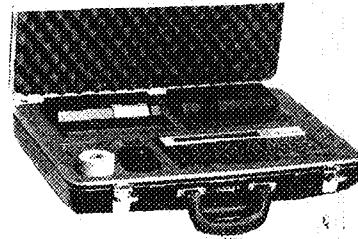
Hazardous duty for your calculator? This beauty meets NATO specs for infantry use under battlefield conditions—nuclear flash, vibration and drop tested, submerged under 1.5 meter water for 2 hours. It floats with your HP-41 inside.

The British Army calls it "Robust," and you'll call it impressive! It's made of cast PBT plastic with rubber shock lining, and it has provision for a lanyard or for lashing to field-pack or thigh.

Stock #41-557 [HP-41 Battle Case] List \$150.00 \$98.95

HP-41, HP-71, HP-75 SYSTEM CARRYING CASE

This case was designed by O'Neil Product Development, Inc. exclusively for EduCALC. Tim O'Neil used his experience as an HP-41 user to develop this unique design. Fifteen foam blocks have been pre-cut to fit a variety of peripherals. Just pull out the appropriate blocks for your configuration. Wires may be run under the foam and the lid removed to permit in-case operation. The case is lockable and measures 18" x 13" x 3 1/2".



Stock #A-608 [Carrying Case] List \$89.95 \$69.95

LEATHER CALCULATOR CASES

These hard leather calculator cases are perfect for outdoor applications such as surveying, constructions, or a machine shop environment. They are made of high quality, 7 to 8 ounce cowhide. A belt loop is available on the back of each case (except 41-570). They are light tan in color and give a very professional look outside or inside the office. Sizes are available for the HP-41 with or without a card reader, HP-10, 11, 12, 15, 16 or the TI-58/59. For the HP-41 without card reader there's also a version with windows in back, so you can use your 41 without removing it.

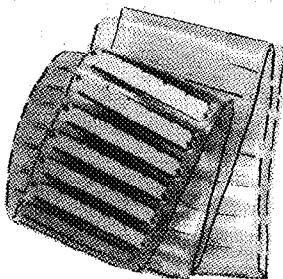


Stock #A-511 [Case: HP-41 without CR] List \$35 \$32.95
Stock #A-512 [Case: HP-41 with CR] List \$45 \$39.95
Stock #A-513 [Case: HP-10 Series] List \$35 \$32.95
Stock #A-514 [Case: TI-58/59] List \$38 \$34.95
Stock #A-512P [Case: HP-41 with Portextender] \$54.95
Stock #41-570 [HP-41 Open Back Case] \$36.95

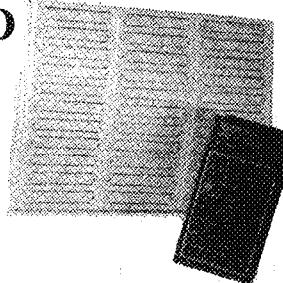
— HP-41 Systems —

MAG CARD HOLDER

This unique soft plastic magnetic card holder with 40 individual slots will add organization to a cluttered world. If your collection of HP-41 mag cards is more than 10, this could be your best \$2.50 investment.
 Stock #A-524 [Magnetic Card Holder] \$2.50



HP-41 MAG CARD HOLDER

IMTEC*New*

Fights Chaos! Transparent plastic loose-leaf 8½" x 11" sheet with 66 welded pockets for cards. Printed forms inside show which cards are out-of-file and where they go.
 Stock #41-568 [HP-41 Card Sheet] \$3.95

BATTERIES

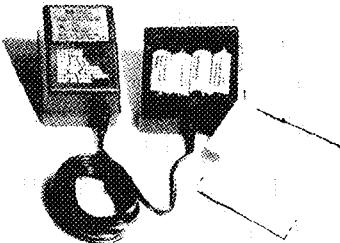
Stock #N-CELL [Alkaline Battery for HP-41]

Requires 4 ea. \$0.98

Stock #N-NICAD [Rechargeable Battery for HP-41]

Requires 4, Recharger not included ea. \$3.98

HP EXTENDED USE RECHARGER & BATTERIES

New

Save on batteries and have reserve power to boot! The 92266A (recharger and batteries) charges 4 NiCad N-cells. The 92266B battery set contains 4 full-size NiCad N-cells with twice the capacity of the battery pack. And the recharger works outside the HP-41 so you can recharge spares without sacrificing portability.

Stock #92266A [HP-41 Recharger/Bats] List \$40 \$36.95

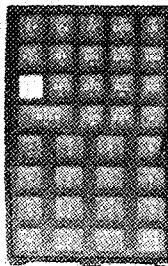
Stock #92266B [4 NiCad N-cells] \$14.50

TOUCHPAD

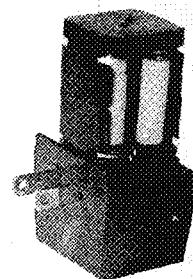
 **HEWLETT PACKARD**

It will keep your HP-41 safe from coffee or other problem liquids or particles. This plastic membrane snaps into place over the keyboard. All of the button nomenclature has been reproduced.

Stock #82200 [Touchpad] List \$20 \$18.95



N-CELL NICAD RECHARGER SYSTEM

Ledford Micro*Brand New*

Power to go! This looks a bit home-made, but it costs ½ as much as the factory-made recharger (and its charging electrons are of the same consistently high quality as Hewlett-Packard's). It has full-size N-cells which give triple the power of the 82120A pack, and there's no need to discard an entire pack when one cell fails.

There are two versions, RSN 1 with the charger rig and 4 NiCads, and RSN X with charger rig, 8 NiCads, a battery holder (like the one you got with your 41) and capture sleeve. And EduCALC guarantees your satisfaction with this and every other product we sell.

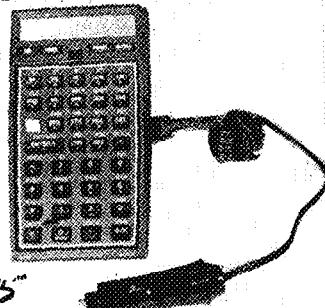
Stock #41-RSN1 [Charger, 4 cells] \$26.95

Stock #41-RSNX [Charger, 8 cells, holder] \$39.95

CIGARETTE-LIGHTER ADAPTER

S.O.S.

Power-up on the go! Replaces HP-82059 charger (except for RS-232 interface) for HP-41 or its printer, cassette drive or ThinkJet printer.



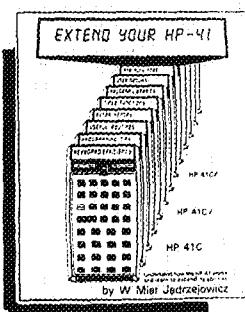
Available Dec. 85

Stock #41-561 [12VDC Adapter] \$29.95

EXTEND YOUR HP-41

by Włodek Mier-Jedrzejowicz

This is the definitive work on the HP-41!



A great collection of ideas for users (new or expert) who want to have details of HP-41 system capabilities not explained in the HP manuals.

Beginners will find out how much more the standard functions can do and how to use them efficiently.

Experts will see new tricks of the author's and old tricks they have forgotten.

Covers plug-in modules, HP-41 and HP-IL peripherals and devices, using extended functions, and using and understanding Synthetic Programming techniques

Stock #41-621, Extend HP-41, 300p, softbound \$29.95

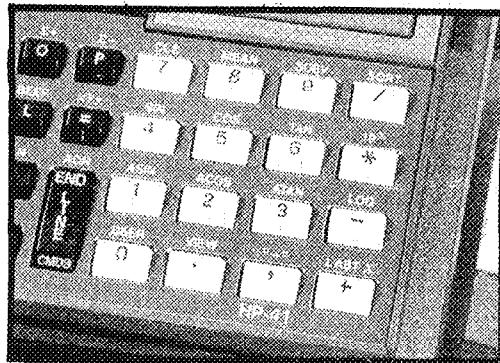
—HP-41 Systems—

Price Reduced TURBO-41

5 TIMES THE MEMORY!

5 TIMES THE SPEED!

5 LANGUAGES...[†]



Fantastic
New

Imagine using this professional tool in your work—you can display the whole stack after each operation—display the command stack—add new functions in RAM.

Gigantic memory—up to 10,000 DIRECT-ACCESS DATA REGISTERS. 12-digit mantissa and 3-digit exponent numerical accuracy. Implements IEEE floating-point math exception handling.

Best of all, it's multi-lingual. In real time you can calculate (or program) in HP-41 keystroke language—one key per function with immediate execution. A second real-time mode is command-line language—an RPN computer language for immediate execution at end-of-line. In yet a third mode, you can type in any algebraic expression as it is printed and it will be evaluated and the result returned to the X-register.

That's 3 real-time calculation modes. There are also 2 full-sized computer languages available for subroutines—BASIC and FORTH. All in all, the functions and commands you'll be using are:

- HP-41 Emulator System, with 147 built-in standard HP-41 functions, plus 23 additional HP-41 functions and operations unique to this emulator. You execute a function just by spelling it out (fewer keystrokes than the 41).
- Complete BASIC language of 240 functions, statements, and operations, plus 12 BASIC keywords for access to the HP-41 and FORTH systems and to textfiles.
- Complete FORTH language system (including compiler), with 335 built-in FORTH words, enhancing the FORTH '83 standard with added floating-point, string, HP-IL, and file-handling words.
- Special Functions, like Statistics with 15 independent variables.

That's not all—you can transfer HP-41 programs from the HP-41 to your TURBO-41 and run them from 3 to 8 times as fast. This will require an optional HP-IL plug-in interface, plus an HP-41 with IL option. What you'll have to work with in your TURBO-41 is

- READ41 program, for automatic program transfer from HP-41 User Language into ASCII text, so you get a replica of the HP-41 program listing.

● Text Editor program, for editing these HP-41 programs (and other text files). You can modify or delete lines, insert comments, etc. You can also save the program in this form to optional magnetic media, printer, etc.

- TRANS41 program, for translating HP-41 programs into the emulator system and compiling it. Then you can use the HP-41 functions RUN, GTO, XEQ, RTN, and END just as on the 41.

What this means is that you can access the huge HP-41 software base—either your own programs or published ones—and run them on a much faster machine with a gigantic memory.

Your FREE BONUS is FORTH—the natural growth-path for an HP-41 programmer. You can expand your RPN skills into this new language—it is similar in spirit to HP-41 language, but provides vastly improved performance and power.

This impressive machine is available now, and you've earned it. It will pay for itself many times over by extending your power and by saving your time. Of course it's expensive. But you are saving real money by buying from EduCALC and eliminating the middleman.

The TURBO-41 is not an HP item—it's our own package consisting of the HP-71B computer with the HP48K Translator Pac plug-in ROM, plus keyboard overlay for HP-41 key assignments, together with Owner's Manuals, Reference Manual, Quick Reference Guide, blank overlays, batteries, and case. Since the HP manuals contain no tutorial material, we also include for you the book *Starting Forth* by Leo Brodie.

The instrument weighs less than a pound and runs 60 hours on four disposable AAA batteries (AC adapter optional—same as for HP-41).

Stock #TURBO-41, Package List Price \$667 \$499.95
See software, books and accessories described in our HP-71 section.

See printers, card readers, monitors, etc., described in our HP-IL section.

We can hard-wire the Translator Pac into your machine for an additional charge (allow 3 weeks).

Stock #A556-1 [HP-71 Hard Wire] \$39.95

Super-Turbo 41

Everything above, PLUS 32K additional RAM and Translator Pac hard-wired right in—what a handheld!

Stock #ST-41 [Super-Turbo-41] \$939.00

IND 41 1984

Card File of All Published Programs

Complete! A card file in book form containing almost every HP-41 program which has ever been published in a technical magazine or a book in any language. The cards are classified by subject or application with cross-references, so it's easy to use. Each card gives complete bibliographic data so you can find the original article plus an abstract of the article in its original language. Any requirements of specific models of calculator or peripherals are noted. Addresses of original publishers are listed, so you can write for copies of magazines.

Comments here are written in both French and English. These cards are personal files of the author. The PPC Club in Delft (the Netherlands) helped prepare them and they are published by the main French users' club, PPC-T.

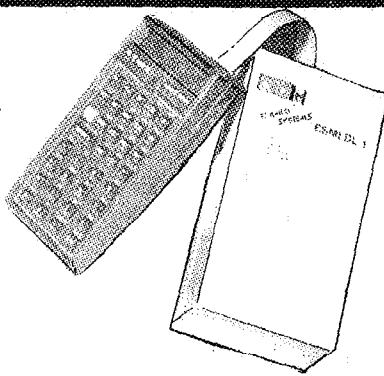
Stock #41-593, IND 41 1984, 62p softbound \$14.95

—HP-41 Systems—

MLDL EPROM BOX

Eramco

New



Not for beginners! Of course, the utilities supplied here will allow anyone to use the 8K RAM that is included to store enormous programs. With a little skill, you'll be able to copy the contents of ANY ROM into this RAM with COPYR, make improvements, and store the results on tape. You could even maintain an entire library of ROM images on one or two cassettes.

But with increasing skill, you'll have the full power of M-code at your fingertips. This is also an EPROM BOX (up to 6 pairs of EPROMS, and 24K) so you can make up your own EPROM's to tackle big jobs — RAM is then freed for data and you'll get quicker executions, plus you'll have lots of RAM for data. Storing programs in EPROM is worth the cost, since you'll avoid the dreaded MEMORY LOST.

All in all, this system and a 41CX can support a 70K ROM/RAM operating system — that's not bad for a vertical hand-held, is it?

Stock #41-564 [MLDL Unit] List \$495 \$399.95

HP-41 PORT-X-TENDER IF YOU'VE EVER RUN OUT OF PORTS FOR YOUR HP-41C/CV, THIS IS THE ANSWER!!

The Port-X-tender will fit the new HP-41 CX but (unlike the HP-41C or CV) it can be used with a maximum of 2 extended memory modules.



The PORT-X-TENDER will accept ROM application and extension modules, RAM memory modules and peripheral devices. Six additional slots are provided which gives you a total of 10 positions for modules and/or devices. Four memory modules and two extended functions/memory modules may be used to greatly increase the memory size. If this isn't enough, you can add a second PORT-X-TENDER. The PORT-X-TENDER plugs into port #3. It's about the same size as the HP-41 with a card reader (7" x 3" x 5/8") and attaches to the bottom of the HP-41. Six of the seven slots may be switched on or off to select specific devices and/or modules in or out of the user's system. A 6-volt lithium battery in the extender preserves RAM memory (plugged into the extender slots) when disconnected from the calculator. A built-in battery tester checks both the battery in the extender and the cells in the calculator. The unit is complete with a 40 page owner's manual and a carrying case large enough for the PORT-X-TENDER, HP-41 and Cardreader.

Stock #A-530 [Port-X-Tender] List \$150 \$139.95
Stock # PX-28L [Battery] List \$7.10 \$6.95

EPROM BOX

An EPROM box the size and shape of a card reader! It plugs in just like the card reader (using only one port), but it stores up to 32K of EPROM storage. Now you can have huge application programs or giant amounts of fixed data at your fingertips.

Application areas include survey calculations, oil field computation, flight support, insurance analysis and other areas where small size and large memory requirements are essential. Programming for the EPROMs can be accomplished through the EPROM Programmer (Stock #A-615) or for larger and faster programming requirements leased equipment from Hand Held Products is available.

For additional information call (704) 541-1380 or write for literature, Stock #A-526 LIT.

Stock #A-526 [HHP-PE, including 8K blank EPROM]
List \$349.00 Please allow 3 to 4 weeks for delivery \$335.95



Hand Held
Products

NOT ENOUGH HP-41 PORTS?

Combine two or three HP-41 modules into one!

Dual Modules - Combine a Single Memory, Quad Memory, Extended Memory or Timer Module with each other or any normal Application Pac.

Triple Modules - Combine one Extended Functions and two Extended Memory Modules (this is the most common), or any one normal Application Pac with two Extended Memory Modules (HP-41CX).

Special Triple - For the HP-41C, one Quad Memory, Timer and any normal Application Pac.

HP-IL Conversion - Your HP-IL can be combined with either the HP-IL Development, Extended I/O or Plotter module. The PPC ROM is considered a normal Application Pac for these conversions. All conversions are warranted by Edu-CALC (not HP) for 1 year after conversion. Please allow 2 to 3 weeks, list any modules that you are enclosing for conversion on the order form and indicate that they are supplied by you. Price of service does not include modules.

Stock #A-531D [Double Module Conversion] \$30.00
Stock #A-531T [Triple Module Conversion] \$55.00
Stock #A-531S [Special Triple Conversion] \$65.00
Stock #531L [HP-IL Conversion] \$45.00

HP-41 CODING SHEET

EduCALC

Use this professional tool to get professional results that look professional. With these two-sided, 11 x 17 inch forms you can jot it all down: There's systematic space for Keyboard Labeling, System Configuration, Card Labels, Function Assignments, 224 Program Steps with Comments. Plenty of room, and it's so easy with this form to organize everything and remind yourself of details.

Now you'll be able to compose programs faster, with fewer bugs. Your associates will be able to read and follow your programs, and they'll be impressed by this format.

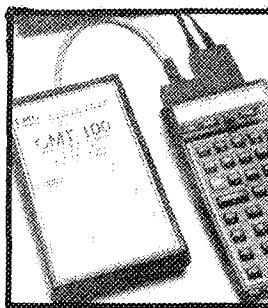
Stock #41-572 [HP-41 Coding Sheets] 25 sheets \$ 6.95
Stock #41-573 [HP-41 Coding Sheets] 300 sheets \$69.50

—HP-41 Systems—

CMT-100 APPLICATION MODULE SIMULATOR

CMT

New



Stores either 4K or 8K of your program or data in one CMOS or NMOS EPROM which you plug into this small device. It connects directly to any HP-41 port. Use it to back up crucial programs, to develop custom modules, or to store tables or databases. Easy to update periodically. EPROM programming service is offered by CMT and EduCALC. Complete with owner's manual.

Stock #CMT-100 [EPROM BOX] List \$165 \$155.95

CMT-200 DATA ACQUISITION AND CONTROL SYSTEM

CMT

New



You can run a parallel printer or even an oil refinery with this little I/O marvel which plugs directly into an HP-41 port. Has 8 open drain N-channel FET outputs, 8 high impedance inputs, 2 handshake control lines, and 2 special functions lines which allow the 41 and an external device to power each other up — all fully hazard protected. 38 new software functions. Complete with owner's manual.

Stock #CMT-200 [Data Acquisition Pak] List \$250 \$239.95

Stock #CMT-200-OM, Owner's Manual only* \$9.95

*Cost may be applied to the purchase of the unit at a later date.

EPROM SERVICES

Your program or data can now be burned into an EPROM. All you need to supply is your program/data on a cassette tape or magnetic cards. What you get is an EPROM containing your program/data. This EPROM can then be plugged into one of several EPROM boxes (see HHP-PE). The following information should be supplied: type of EPROM box, XROM number for EPROMs (one for each 4K used), EPROM name or header (8 characters), and any special information. Please allow 4 weeks for delivery; your cassette tape or magnetic cards will be returned. Duplicates can be produced at 15% of the original cost. Prices include the cost of the EPROM.

Stock #A-263 (4K EPROM) \$60.00

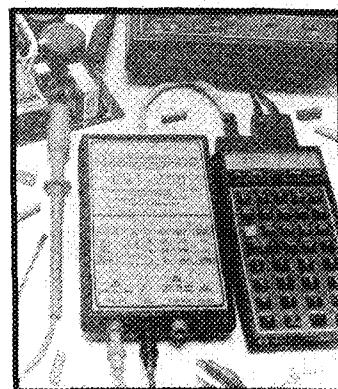
Stock #A-264 (8K EPROM) \$85.00

Stock #A-265 (16K EPROM) \$120.00

CMT-300 PROGRAMMABLE RECORDING MULTIMETER

CMT

Brand New



See review in March 1985
PPC Journal

This gadget looks dumb. It's about the size of a calculator, but there are no buttons, no switches, no readouts. So it was hard for us to believe that when you plug it into your HP-41 you get a 3½ digit DMM, autoranging, auto-polar, with 15 ranges for AC/DC voltage and current, and resistance. That's not bad for a friendly, low-power, dual-slope integrating A/D converter. We even found we could program the 41 to process the readings, so we got ALPHA readouts, relative reference % readings, or dB, as well as equational processing for signal analysis and statistics for data reduction. Then we realized that with the right transducer we could read any type of data such as RPM, pH, temperature, moisture, light intensity etc. By then we were so impressed we didn't believe the price of \$350.

So you can imagine how we felt when we found out this thing has dozens of built-in firmware programs of its own. For instance, it can be set to start tomorrow at noon and record both windspeed and temperature once-a-minute for 12 hours (if your 41 has clock functions) and print or record on cassette or disk if you wish.

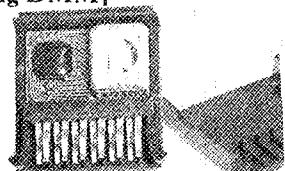
This little phenomenon will be useful for remote-site monitoring, production or diagnostic testing, quality control and assurance, automated lab measurements, datalogging and analysis, line monitoring, as bench equipment, and anywhere a DMM is used but automation is desired. With the CMT-300 it even gives control based on measurement.

CMT-300 just plugs into any HP-41 port — it comes with test probes, keyboard overlay, 56p. manual and 90-day warranty.

Stock #CMT-300, [Pgrmbl Recording DMM]

List \$350 \$319.95

CUSTOM EPROM MODULES for the HP-41



You can have your own programs burned into a custom EPROM in SMALL QUANTITIES! These are the same size as HP modules and just plug into any port. That means you can test market just a few, or supply just a few of your salesmen with proprietary programs. The cost is \$115 for 8K, or \$175 for 16K Bankswitched (\$50 programming charge for 8K modules, \$10 for duplicates). Send your programs on cassette tape or disc. Allow 2 weeks. Also see EPROM Programmer, page 19.

Stock #41-595 [CMT 10-8K] List \$135 \$115.00

Stock #41-609 [CMT 10-16K] List \$195 \$175.00

Programming worksheet available at no charge.

— HP-41 Systems —

16K RAM STORAGE UNIT

Eramco



New Gear—Not for beginners—and useless without an operating system (just like an Extended Memory Module is).

But use it with the ZEN ROM or the MLDL EPROM Box and you get this enormous 16K RAM capacity for your MCODE applications.

The RAM Storage Unit is a small flat plastic box that fits right underneath your HP-41 and plugs into a port. It has room for batteries to preserve memory for at least 6 months when unit is disconnected from calculator. Manual included.

Stock #41-RSU-1 [16K RAM] \$259.00

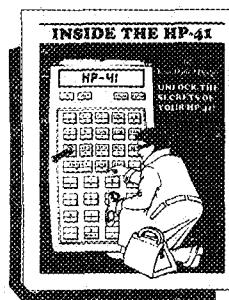
INSIDE THE HP-41

by Jean-Daniel Dodin

(translated from the French)

by Mary-Denise Dodin
and I. Vandebroeck)

revised and edited by
Wilson W. Holes

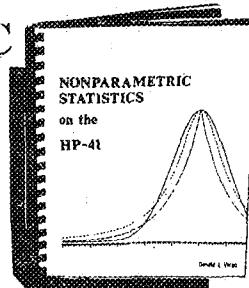


Discover the secrets of your HP-41! Here is your tour through its inner workings. Learn about memory structure, the status registers, the byte grabber, synthetic programming, and microcode—the language of the HP-41's microprocessor. See examples of the intricate internal programming of the HP-41, the microcode that makes the HP-41 what it is.

Stock #41-355, Inside HP-41 softbound, 256p \$18.95

NONPARAMETRIC STATISTICS QUICK & EASY ON THE HP-41

by Don Vargo



ATTENTION behavioral, biological and physical scientists: if you're using these popular new methods with a stat pak on a big computer, you're in for a pleasant surprise! On your HP-41 these same tests become straight-forward and forgiving, and errors are easy to correct.

13 tests in all, for One Sample and Matched Observations, Two Samples' Location and Dispersion, Analysis of Variance, Goodness of Fit, and Independence. These programs have a common treatment here, with complete discussions and examples. The manual begins with an introduction to nonparametric methods and a brief review of elementary statistics.

Requires an HP-41CV or HP-41C with quad memory module, and familiarity with inferential statistics.

Stock #M-307, Nonparametric Stat., 166p softbound \$16.95
Stock #M-307BC, Barcode for above \$9.95

SOLUTION BOOKS FOR THE HP-41 ONLY \$14.50 EACH!

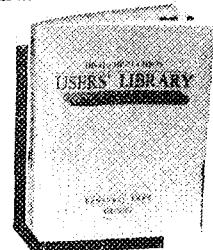
The solution books provide step-by-step keystroke listings for specific problems in specific disciplines. Although they are not as convenient as the application modules, they cover more programming details in many of the same areas. They are perfect for the person who is involved in specific programming solutions, program modifications, or as a reference program library. The following is a list of the available areas that they cover.

Antennas	Stock # 90093	\$14.50
Business Statistics/Marketing/Sales	90094	14.50
Calendars	90145	14.50
Chemical Engineering	90100	14.50
Chemistry	90102	14.50
Civil Engineering	90089	14.50
Control Systems	90092	14.50
Electrical Engineering	90088	14.50
Fluid Dynamics & Hydraulics	90139	14.50
Games	90099	14.50
Games II	90443	14.50
Geometry	90084	14.50
Heating, Ventilating & Air Conditioning	90140	14.50
High-Level Math	90083	14.50
Home Construction Estimating	90096	14.50
Lending, Savings, & Leasing	90086	14.50
Mechanical Engineering	90090	14.50
Optometry I (General)	90143	14.50
Optometry II (Contact Lens)	90144	14.50
Physics	90142	14.50
Real Estate	90136	14.50
Small Business	90137	14.50
Solar Engineering	90138	14.50
Structural Design (cassette based)	90441	35.00
Surveying	90141	14.50
Test Statistics	90082	14.50
Time Module Solutions I	90395	14.50

1985 Edition

USERS' LIBRARY SOFTWARE CATALOG FROM HP for the HP-41, 71 and 75

*Brand
New*



About three thousand programs for the HP-41, most of which are also available for the HP-71, plus a couple hundred for the HP-75—all cross-indexed by subject and author and described concisely. All are available from HP on your choice of media (mag cards, mini-cassette or 3½" disc) with thorough documentation, about \$12.00 each. The list of topics is enormous—from crop science to computer science, from payroll to marketing, plus every engineering specialty and every field of numerical math and statistics, and physics, and chemistry, and social sciences. Some of these will work for you.

Stock #41-202B, Users' Library Cat., 220p softbound \$4.95

— HP-41 Systems —

“SOUP UP” YOUR HP-41 WITH SYNTHETIC PROGRAMMING

When you press the keys on your HP-41 in PRGM mode, instructions are entered into program memory. Many of these instructions contain more than one byte. Using special techniques to pull apart these bytes and recombine them with other bytes, you can synthesize an extensive set of new instructions which are not described in the Owner's Handbook. The creation and use of these instructions is Synthetic Programming (SP). It provides a wide range of extended capability for your HP-41.

As a simple example, the synthetic instructions STO M and RCL M allow the rightmost 7 character positions of the ALPHA

register to be used for general-purpose numeric storage. Many SP capabilities are useful in day-to-day applications, while some are simply fun to play with. If you like your HP-41, you'll like synthetic programming!

Hewlett-Packard does not support SP in any way. They will not answer any questions on SP, and synthetic techniques are not even hinted at in the HP-41 owner's manual. If you want to find out more about SP, consult some of the references on this page. Isn't it time you found out what you have been missing?

EduCALC does support Synthetic Programming!

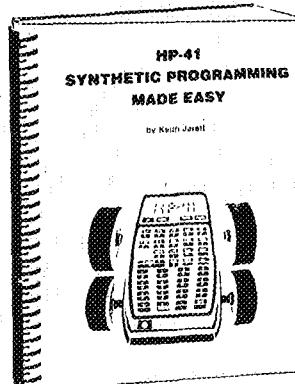
HP-41 SYNTHETIC PROGRAMMING MADE EASY

by Keith Jarett

The best introduction to SP for the uninitiated. Highly readable, it uses all the latest simplified techniques, including “byte grabbing” and “byte loading”, to make the learning fun and easier than ever before.

Contains up-to-date programs, including Extended Functions and Time Module applications. Includes a plastic Quick Reference Card (P-92C) for Synthetic Programming. All the basics are here, with a full cross-reference to other sources. By Chapter 3 you will be able to key up synthetic programs from the HP User's Library or any other source. No peripherals or modules required, but card reader, XFUNCTION module, or wand will be helpful. Barcode for all programs is included.

Stock #P-146 HP-41 Synthetic, 192p spiralbound..... \$16.95

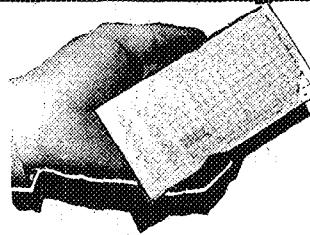
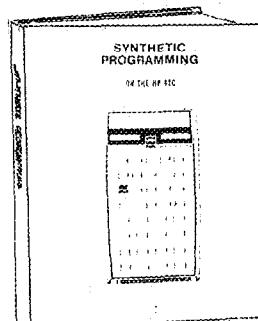


SYNTHETIC PROGRAMMING ON THE HP-41C

by William Wickes

The first and still the most complete and detailed book on the subject. Some of the techniques covered are: Addition of 21 “new” display characters; transformation of the alpha register into 4 additional registers, to use as a scratch pad which does not disturb data stored by other programs; enhanced user control over the 56 user and system flags, such as clearing all 56 simultaneously; SIZE finding automatically is less than 2 seconds; rapid alphabetizing of alpha data; alpha character-string processing; 6 new TONE frequencies plus variation of TONE duration; improved key assignment control, like SF 14 or GTO IND X on a single key. A card reader or wand would be very helpful.

Stock #P-92 Synthetic Prog., 96p softbound..... \$10.95

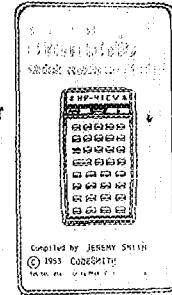


QUICK REFERENCE CARD FOR SYNTHETIC PROGRAMMING

Durable 3-color plastic card showing flag functions and byte equivalences. An indispensable aid for synthetic programming. Stock #P-92C, (Quick Ref. Card) plastic card..... \$2.75

HP-41 SYNTHETIC QUICK REFERENCE GUIDE

Compiled by Jeremy Smith Now printed on
“indestructible” paper

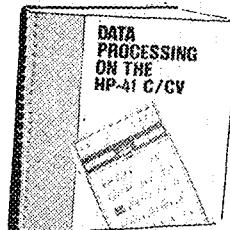


Charts, Tables and Diagrams that you'll need for Synthetic Programming collected from books and journal articles. This compilation is in compact, pocket form—it contains no explanations or examples, though references are given (e.g. to the books by Wickes, Jarett, and Reinstein).

Stock #P-147, Quick Ref. Guide, 40p softbound..... \$5.95

DATA PROCESSING ON THE HP-41

by William Phillips



That's right—DATA PROCESSING on your calculator! You know the HP-IL turns your HP-41 into a PERSONAL COMPUTER with cassette memory and printer. Now a pro teaches you how to use this power.

First he surveys the hardware, RPN and simple programming. Then he describes structured techniques for program design. Then file creation and file processing are explained. Two large programs are studied in detail as examples (one is a useful Cash Register and Running Inventory Program.)

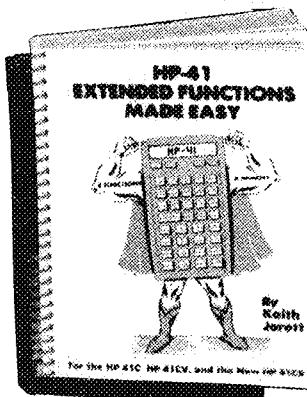
Stock #P-165, Data Processing, 147p spiralbound..... \$16.95

— HP-41 Systems —

HP-41 EXTENDED FUNCTIONS MADE EASY

by Keith Jarett

IF YOU OWN AN HP-41 CX
OR AN EXTENDED FUNC-
TIONS MODULE, YOU NEED
THIS BOOK!



The Extended Functions/ Memory module (built into the HP-41CX) is the most powerful module that Hewlett-Packard has ever made for the HP-41. However, the *Owner's Manual* barely scratches the surface of its capabilities. *HP-41 Extended Functions Made Easy* is the definitive book on the subject, by a leading expert on the HP-41 system. The book describes each function fully, giving examples and typical uses.

The book contains many powerful application programs: a mailing list manager, a text editor, a root finder, differentiator, integrator, and much more. Several utility programs make the extended functions more powerful, convenient, and fun to use.

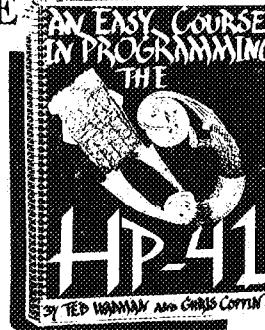
Stock #P-206, Extended Functions, 240p spiralbound \$16.95

AN EASY COURSE IN PROGRAMMING THE HP-41

by Wadman/Coffin

Beginners, look no further. Here is your book—straight forward and clear, brief and free of technobabble. This treatment is itself programmed, so if you have some experience, you are led quickly to the topic you need. Authors Ted Wadman and Chris Coffin are former HP employees, and they know their stuff—and they also know how to make it easy and make it fun.

Stock #P-193, Programming HP-41, 255p spiralbound \$17.95



HP-41 MCODE FOR BEGINNERS

by Ken Emery

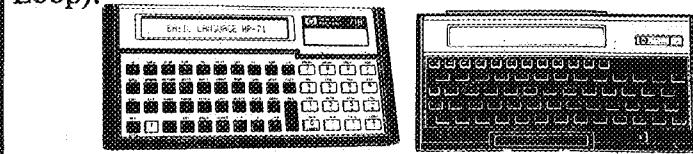
Learn to be an Insider, step-by-step. Ideas and techniques are introduced one-at-a-time and illustrated with programs—so you'll quickly be able to set up the function address table and write a simple program which accesses the mainframe ROM's. All programs are fully documented and demystified.

Advanced programmers will find a complete explanation of the display, including the new one that accesses additional LCD characters and allows alteration of the contrast. There's also a *first-time* Description of the memories HP uses for the display. Other new stuff includes an explanation of partial key sequencing as used by the ZEN and CCD ROM's.

Stock #41-374, Begin MCODE, 72p \$24.95

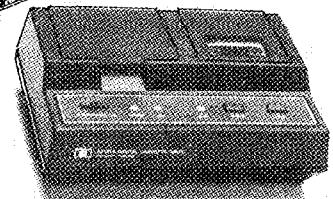
— HP-IL Peripherals —

Your HP-41, HP-71 or HP-75 can plug into any of the following if it is equipped with the HP-IL (Interface Loop).



DIGITAL CASSETTE DRIVE

 HEWLETT
PACKARD



The Digital Cassette Drive uses a digital-quality mini-cassette, capable of storing up to 128K bytes of information. Files can be located by name easily on the cassette drive. Rewind time is under 30 seconds and read/write operations are executed at nine inches per second, with search speed at 30 inches per second. All tape movement is under microprocessor control. Buffer space is provided in the Drive for temporary storage of directory information to help minimize access time and tape motion. The HP82161A can locate files when under program control. It also features STANDBY mode, enabling an HP-IL controller to turn the Drive on or off remotely. This unique feature helps extend system battery life and allows for system operation in remote applications.

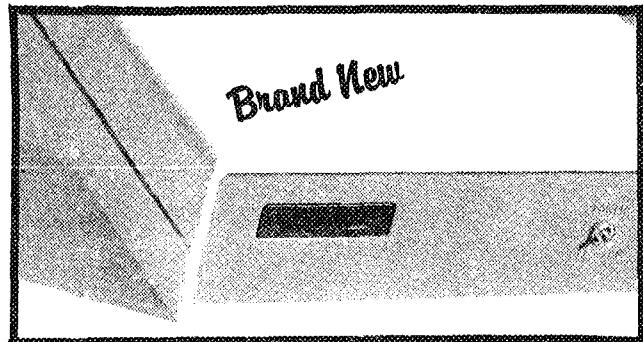
The Drive uses a two-motor system to move the tape past a two-track magnetic head specially designed to resist data alteration due to externally generated magnetic fields.

Stock #82161 [Digital Cassette Drive] List \$550 \$479.95
(Owner's Hndbk. Incl.)

Stock #82176A (Data Mini Cass.) 1	.....	\$9.50
Stock #82176-10 (Data Mini Cass.) 10	.....	\$88.95
Stock #82167A (HP-IL Cable) ½ meter	.....	\$5.95
Stock #82167B (HP-IL Cable) 1 meter	.....	\$7.95
Stock #82167D (HP-IL Cable) 5 meters	.....	\$9.95
Stock #82033A [Rechg. Bat. Pk]	.....	\$24.95
Stock #82059D [Recharger]	.....	\$18.95
Stock #82037A [Reserve Power Pk]	.....	\$59.95

— HP-IL Peripherals —

ANALOG TO DIGITAL INTERFACE FOR HP-IL

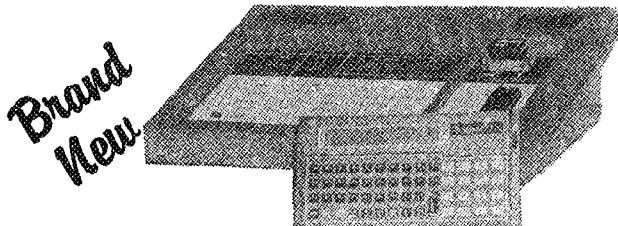


If you would like to combine the calculating power of the HP-41, 71 or 75, with the output of your best piece of lab equipment/process monitor/chart recorder/etc., or perhaps all of them, then this is what you need.

It's an 8 channel, 4½ digit, analog to digital interface that connects to any HP interface loop. Power consumption is 50ma while operating and .5ma in standby. One of the unique features is a built-in relay for power-gating external circuitry. It operates on a built-in lead acid battery and internal charger. The battery supplies power for 24 hours of continuous operation. A programmable gain amplifier provides for four ranges ± 40, 160 or 640 millivolt or 2.5 volt. One optically isolated 8 bit digital output port is available. Maximum resolution is 2 microvolts suitable for a thermocouple. Thermocouple reference junction is built-in.

Stock #ADC-71 [A-D Interface] List \$750.00 \$649.95
AVAILABLE MID DECEMBER, 1985.

HP/IL EPROM PROGRAMMER

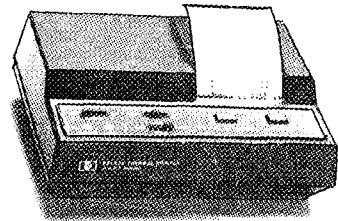


Now you can load EPROM's with data or programs for your HP-41, HP-71 or any other application. It has a built-in HP-IL interface, RS-232 interface, or it can even be used as a stand alone unit.

The HP/IL interface supports the Mountain Computer command set, plus EPROM to RAM, RAM editing, and programming from RAM functions. With the EPROM Programmer's 32K of RAM, you can make direct copies of EPROM's up to a size of 256K bits (27256). The programmers' IL and RS-232 interfaces both support Intel and Motorola hex format files. With the optional IL-622 accessory you can program your own CMT-10 EPROM's for use in the HP-41. Software listings for using the IL-615 are included, programs on magnetic media available separately. Available in October.

Stock #IL-615 [EPROM Programmer] List \$1450 .. \$1,249.95
Stock #IL-622 [CMT-10 Programming Fixture] \$495.00
Stock #IL-623(HP-41 Control Sftwr) Card, tape or disc \$15.00
Stock #IL-624(HP-71 Control Sftwr) Card, tape or disc \$15.00
Stock #IL-625(HP-75 Control Sftwr) Card, tape or disc \$15.00

THERMAL PRINTER/ PLOTTER (82162A)



This HP-IL compatible Printer/Plotter provides you with numeric, upper and lowercase alpha, doublewide characters, and intensity control for optimum contrast and readability.

The chief enhancements of the HP82162A over the HP 82143A dedicated Printer/Plotter are a 101-character buffer for enhanced graphics capabilities and a FORMAT function which automatically centers or justifies copy to the left and right margins.

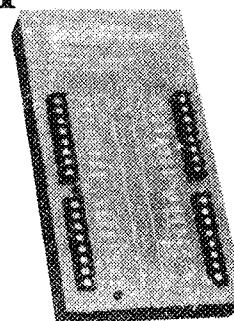
The Printer/Plotter also supports STANDBY mode, so that any HP-IL controller on the loop can manage its power consumption. HP-IL ensures that the HP82162A will be compatible with future HP-IL devices.

Print speed is 24 characters/second. A rechargeable battery pack is supplied as well as a recharger. Operating time is three to six hours between charges.

Stock #82162 [Printer/Plotter] List \$450.....	\$379.95
Stock #82045A [Therm. Pap.] blue, 6 rolls	\$8.50
Stock #82175A [Therm. Pap.] black, 6 rolls	\$8.50
Stock #82033A [Rechg. Bat. Pk.].....	\$24.95
Stock #82059D [Recharger]	\$18.95
Stock #82037A [Reserve Power Pk.]	\$59.95
Stock #82167A [HP-IL Cable] ½ meter	\$5.95
Stock #82167B [HP-IL Cable] 1 meter	\$7.95
Stock #82167D [HP-IL Cable] 5 meters	\$9.95
Stock #41-561 [12V DC Adapter].....	\$29.95

A/D 8 IN/8 OUT INTERFACE

Ocean Scientific



Robotize your lab — automate your pilot production! HP-IL operation with eight analog inputs, eight latched TTL level outputs — set or reset any line anytime, masterclear, select input and output channels independently.

There's 12 bit analog resolution, 200mv full scale, and the interconnections are simple. It supports the HP-IL power-down feature and is battery-powered with charger included. All in one small self-contained package

Stock #A-563 [A/D Interface] List \$850 \$769.95

— HP-IL Peripherals —



VIDEO INTERFACE

Mountain Computer/
Hewlett-Packard

Price
Lowered!

This black box will transform the data stored in your HP-41, 71B, or HP-75 into a giant visual display on your TV monitor (or any television with an RF modulator). It takes advantage of your full screen by displaying up to 80 columns and 24 rows or it can be switched to 40 columns and 20 rows. The video format may be switched between NTSC (U.S., Canada, Japan) and PAL (Europe) standards. It uses the HP-IL for its connection and an AC adapter is provided for power. Characters can be displayed in inverse video (black character on white background). The display contains a memory for scrolling additional lines onto the screen. Use your HP-IL video system as an aid to program development or for making presentations.

Stock #92198 [Video Interface] List \$295 \$259.95
(Owner's Hndbk. Incl.)

HP-IL A/D INTERFACE

Ocean Scientific



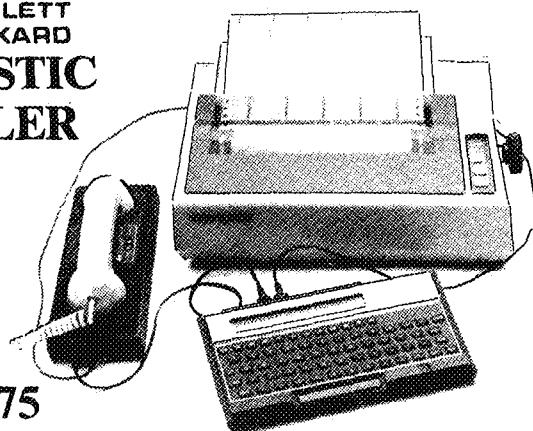
WOW! A combined analog to digital converter and interface between any analog or chart recorder output and the HP Interface Loop — this upgrades existing instrumentation to digital output (3½ digit/2000 count/11 bit resolution) plus full data reduction. It uses the program and computing power of the HP-41, HP-71, HP-75 or HP-85. Input ranges of 0-2 volt, 0-2 volt, or 0-20 volt. Data transfer to printer, cassette deck, etc. Use for Quality Control, Statistical Analysis, Clinical Assays. 4½ x 3½ x 1¼ inches, 110 volts. Literature available on request: order Stock #OS-510 LIT.

Stock #OS-510 [A/D Interface] List \$450 \$399.95
Stock #OS-510B [Opt. 8 hr. Batt. Pk.] \$49.95

 HEWLETT
PACKARD

ACOUSTIC COUPLER

for
the
HP-41,
HP-71
or HP-75



NOW YOU CAN COMMUNICATE ON A WORLD-WIDE BASIS VIA HP-IL

With only voice-quality telephone lines and a conventional telephone, this 300-baud modem lets you communicate with other computers in remote locations. It's battery operated and has all the little goodies such as STANDBY and automatic turn-off that you would expect from Hewlett-Packard.

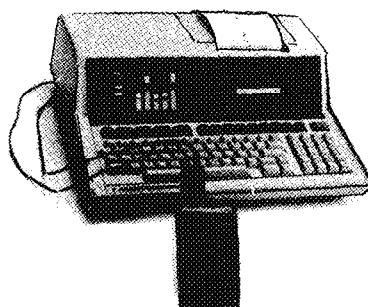
For the HP-41 you'll need the Extended I/O module (82183). For the HP-71 you'll need the Data Communications Pac.

For the HP-75 the Data Communications Pac software is the quickest and easiest way; however, you can also use the combination of the I/O Utilities Card (available in the HP-75 Utilities Solution Book, 75-13013) and Asynchronous Terminal Emulator Program which is available in the Acoustic Coupler Owner's Manual.

Stock #82168 [Acoustic Coupler] List \$495 \$428.95

GPIO INTERFACE

 HEWLETT
PACKARD



The GPIO Interface will enable you to use your HP-IL system to control equipment operating with parallel bus structures. This device contains the port buffering and a built-in power supply that operates from an HP standard AC adapter. (Included with the 82165A). Potential applications for the 82165A include interfacing to computers for data collection, interfacing to specialized devices in production or lab environments, and interfacing to devices such as printers with parallel interfaces. (Owner's Hndbk. Incl.)

Stock #82165 [GPIO Interface] List \$295 \$244.95

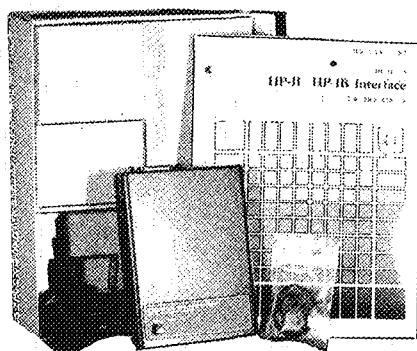
Stock #82167A [HP-IL Cable] ½ meter \$5.95

Stock #82167B [HP-IL Cable] 1 meter \$7.95

Stock #82167D [HP-IL Cable] 5 meter \$9.95

— HP-IL Peripherals

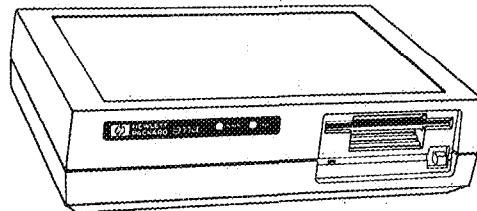
HP-IL/HP-IB INTERFACE



PORTABLE 3 1/2" DISC DRIVE for HP-IL



Reduced
\$150.



YOU CAN CONNECT THE HP-41, HP-71 OR HP-75 TO SOME OF THE MOST SOPHISTICATED COMPUTER EQUIPMENT ANYWHERE.

This interface expands your handheld's control and communications capabilities by linking low-cost HP-IL systems with high-performance HP-IB (IEEE488) computers and lab equipment. It gives you the option of using over 120 HP-IB compatible devices, not to mention many more offered by other manufacturers.

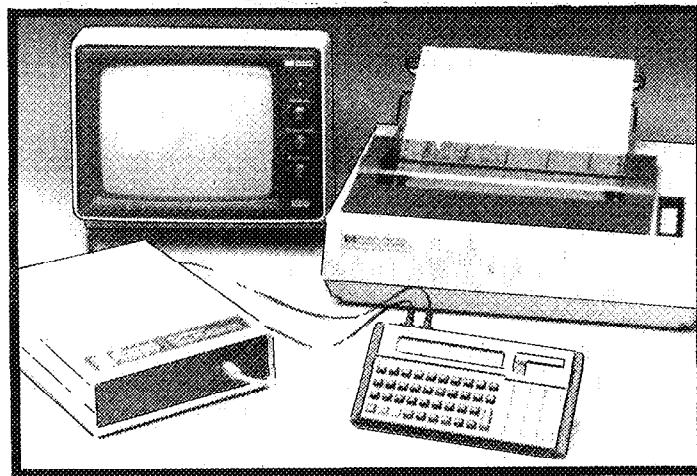
Literature available, Stock #82169 LIT

Stock #82169 [HP-IL/HP-IB Interface] List \$395..... \$334.95

VIDEO MONITORS— GREEN



See page 36 for other monitors.



Stock #82913 (12 inch Monitor), List \$325..... \$275.95

Stock #82912 (9 inch Monitor), List \$295..... \$249.95

NEED EXTRA OWNER'S MANUALS?

Stock #H-708, HP-IL Interface Module Owner's Hndbk \$10.00

Stock #H-709, Digital Cassette Drive Owner's Hndbk \$10.00

Stock #H-710, HP-82162A Thermal Printer/Plotter

Owner's Hndbk \$10.00

Stock #H-711, HP-IL Video Interface Owner's Hndbk \$10.00

Stock #H-712, HP-IL/GPIO Interface Owner's Hndbk \$10.00

Stock #9114-9000, 3 1/2" Disc Drive Oper. Man. \$ 4.00

Stock #2225-90033, ThinkJet Printer Ref. Man. \$ 9.00

Stock #82401-90001, HP-71 IL Owner's Man. \$15.00

At last, here's quick-access mass memory for series 40 or 70 machines (and for HP-110). Two sided, with 630K capacity, yet easily portable — it weighs 6 lbs. and is battery powered. Three inches high, with a footprint the size of typewriter paper. The 3 1/2" flexible discs are safer and more reliable than larger ones, due to the hard case and automatic shutter — and the drive automatically monitors wear and checks for defects at each insertion. Average data access time is 1/2 second and transfer rate is 6K/sec.

Complete with rechargeable battery, recharger, disc, one meter HP-IL cable, and manual.

Stock #9114 [HP Disk Drive], List \$799.00 \$649.95

Stock #92192A [3 1/2" Disc], List \$6.99 \$6.30

Stock #92191 M [Disc Carry Case—holds 5] \$3.25

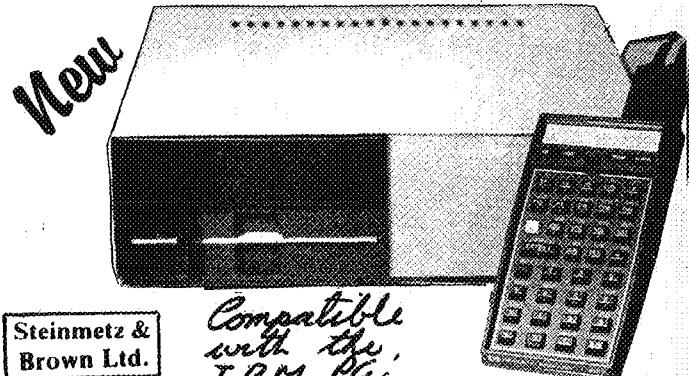
Stock #92191 Q [Desk Top File-25 discs] \$19.95

Stock #92192X [3 1/2" Discs-box of 10] \$59.95

Stock #88014A [Rechargeable Battery], List \$55 \$49.95

Stock #41-561 [12V DC Adapter] \$29.95

5 1/4" DISC DRIVES for HP-IL



Steinmetz &
Brown Ltd.

Compatible
with the
IBM PCs

QUICK MASS MEMORY for your HP-41, 71, 75 or 110-368K per disc, with a mean seek time of 1/4 second in use (or 1/2 seconds from idle). That's so fast compared to tape — and tape life is measured in 1000's of times. These drives use 5 1/4 double-sided, double density, soft-sectored discs — inexpensive and commonly available.

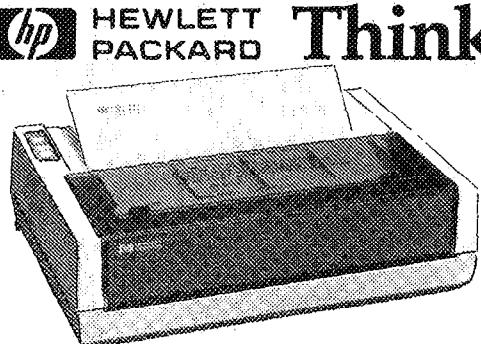
The HP-71 accesses 368K on each disc; the HP-41 and 75 require an extended I/O ROM or I/O Utilities Pac to access more than 131K. If you get the single disc drive, but later need more capacity or inter-drive copying, you can upgrade to dual drive anytime (for \$325 at the factory).

The single and dual-disc models both have the same slimline case (29x25.5x9 cm) on which a ThinkJet printer is stackable.

Stock #SB10161A [Single 5 1/4" Disc Drive] List \$635 \$535.95

Stock #SB10162A [Dual 5 1/4" Disc Drive] List \$895 \$749.95

HP-IL Peripherals



ThinkJet 80 Column ThinkJet Printer

Special \$379.95

Good thru Dec. 31. 1945

- **HP-IL DRIVEN:** Use it with your HP-41 or HP-71 or HP-75!!
- **PORTABLE:** Weighs $5\frac{1}{2}$ lbs., and it's battery powered!!
- **SUPER QUIET:** Revolutionary print-head operates well below 50db noise level.

- **COST EFFECTIVE:** Under \$400, yet traditional HP design for reliability.
- **FAST:** 150 Characters per second.
- **HIGH QUALITY PRINT:** With an 11x12 dot matrix, bidirectional, logic-seeking, 1KB buffer, and it does underlining or boldface in one pass!!

We were skeptical when we first heard from HP about this new printer. A glance at the specs above makes it seem like having your cake and eating it too. The explanation is simple but startling: "THINKJET" stands for THermal INK JET, which is a highly innovative technology that scales down all the virtues of big, fast ink-jet printers to a portable size. It cost HP five and a half years of research and development, with a big-bucks budget—and, naturally, they expect it to be very popular (which means that you should **let us know** right away that you want yours).

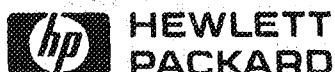
InkJet means that tiny drops of ink are squirted onto the paper, so the printhead never actually touches the paper. That's why it's so quiet. That's also why it needs 'no ribbon'; instead, you simply replace the printhead for just \$7.95. The ink cartridge is right in the head—enough for more than 500 pages of text. Incidentally, "Thermal" means that the head boils the ink to paint it onto the paper.

MORE FACTS: Size 3.5" Hx11.5" Wx8.1" D-6 $\frac{1}{2}$ " print line on 8 $\frac{1}{2}$ " paper—graphics resolution 96x96 or 192x96 dots per inch—text resolution 11x12 dots per character—print

pitches: normal, expanded, compressed, expanded-compressed-print modes: boldface, underline—6 or 8 lines per vertical inch—rich ROMAN8 character set, for Danish, Dutch, English, Finnish, French, German, Italian Norwegian, Portuguese, Spanish, and Swedish—pin feed for fanfold paper and friction feed for single sheets—8.5" x 11" paper or size A4(21.0 x 29.7 cm)—product life 3,500,000 lines or 100,000 pages—20 watts max, operates from 50° to 104°F.

Stock #2225B (ThinkJet Print, IL version) List \$495	\$399.95
Stock #82167A (1/2 Meter Cable)	\$8.95
Stock #82199A (Battery Pack)	\$34.95
Stock #92261A (Printhead Cartridge)	\$8.95
Stock #82167B (1 Meter Cable)	\$7.95
Stock #82167D (5 Meter Cable)	\$9.95
Stock #92261M (Ink-Jet paper) 500 single sheets	\$9.95
Stock #92261L (Ink-Jet paper) 1000 sheets, fan fold*	\$25.95
Stock #92261N (Ink-Jet paper) 2500 sheets, fan fold*	\$46.95
Stock #92261S (Acrylic Printer Stand)	\$49.95
Stock #92250V (Dust Cover)	\$14.95

* Add \$10.00 for Foreign Shipment

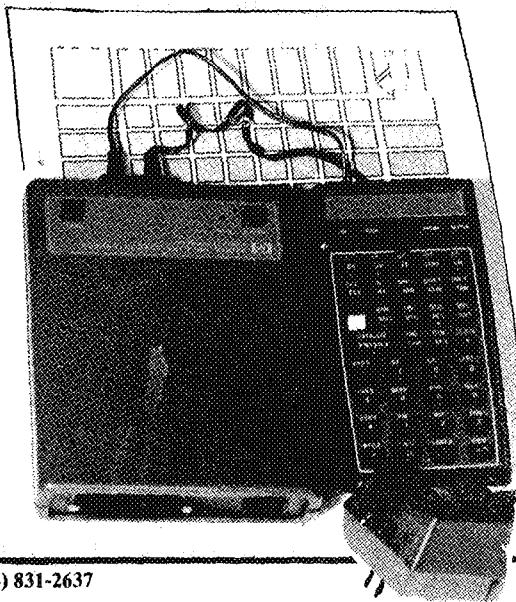


RS-232 INTERFACE

THE MOST POPULAR COMMUNICATIONS INTERFACE IS NOW AVAILABLE FOR YOUR HP-41, HP-71 OR HP-75.

The HP-IL/RS-232C interface is fully asynchronous and bit-serial which lets your handheld talk to and work with other computers, terminals, peripherals, and modems. It features an input and output buffer, interface control logic, function keys and local or remote operating states. Extended I/O module required for most applications.

Stock #82164 [RS-232 Interface] List \$295 \$249.95



— HP-IL Peripherals —

SAVE THESE NUMBERS

HEWLETT-PACKARD

Technical Information (503) 757-2004
Repair Service (503) 757-2002

TEXAS INSTRUMENTS

Technical Information (800) 842-2737
General Information (800) 232-3200

PPC

Personal Programming Center, a California based users' group dedicated to advancing the application art of personal computing. Membership includes the PPC Calculator Journal subscription (714) 754-6226
Telephone Bulletin (714) 549-7674

CHHU

"Chew," is a volunteer, member-supported group of HP users dedicated to applying the HP machines of today. Membership includes the *CHHU Chronicle* subscription:

Telephone (714) 754-7757
Telephone Bulletin (Rec. Message) (714) 754-4537

TI PPC

TI Programmable Calculator Club includes coverage of the TI-66 and CC-40 as well as the TI-59. Membership includes TI PPC Notes newsletter subscription, P.O. Box 1421, Largo, FL 34294

HP-IL CONVERTER

Axonix



This component can be used with a microprocessor-based device to provide HP-IL communication capabilities. A device such as a printer, plotter or instrument becomes an HP-IL peripheral. Four primary functions are performed — HP-IL Interface, GPIO Interface, Transfer Buffer and Control Logic. A 5 volt DC supply voltage is required. A 34-pin connector with provision for appropriate connections to the host device (GPIO data buses, GPIO handshake line, HP-IL interfacing lines and indicator lines) is provided. Possible configurations include 8-bit parallel, 16 bit parallel and negative or positive true logic. The dimensions are 4.3 x 1.8 x .68 inches with the HP-IL connectors and 34-pin connector at opposite ends.

Interfacing the converter to a host device requires experience in digital electronics.

Stock #82166 [HP-IL Converter] \$145.95

Stock #82166LIT (Literature Only) N/C

The following manuals are not supplied with the 82166.

Stock #82166-90002, HP-IL Converter Tech Manual... \$10.00

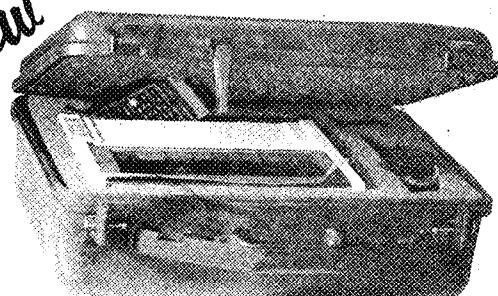
Stock #82165-90012, HP-IL Converter Manual

Supplement \$8.00

Components for the 82166 without the printed circuit board or case may be purchased using Stock #92166K. See page 22.

BATTLE CASE FOR THINKJET PRINTER OR DISC DRIVE SYSTEM

*Brand
New*



220 VOLT POWER SUPPLY—

EUROPEAN PLUG

If you would like us to trade your 82059 (110 volt) power supply when ordering a cassette drive or printer for a 82066B (220 volt) power supply, add \$15.00 and indicate the following:
Stock #82066 EXCHANGE [220 volt P.S.] \$15.00

HP-IL CONVERTER PARTS

The following parts may be ordered for the HP-IL converter on an individual basis as shown below. Standard capacitors and resistors are not listed. Parts are not returnable.

5061-4306	Panel Receptacle -	\$7.60
9100-4226	Transformer, HP-IL -	12.00
ILB3-0003	IC, HP-IL -	24.00
1820-2810	IC, Microprocessor -	22.20
0410-1305	Crystal, 4 MHZ -	4.00
9100-1631	Inductor, 56 mh -	1.25
92166 KIT	One each of the above -	65.00
1810-0651	Hybrid Chip -	18.00

HP-IL TECHNICAL INFO



HP-IL Interface Specification

Stock #82166-90017 \$20.00

HP-IL Interface Kit Technical Guide

Stock #82166-90020 \$ 9.00

HP-IL Integrated Circuit Users Manual

Stock #82166-90016 \$15.00

HP-IL Development Module Owner's Manual

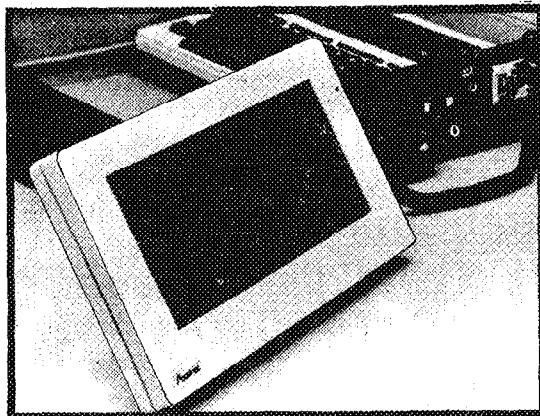
Stock #41-90449 \$ 6.00

If your printer or disk drive accompany you in battle, they'll gain years of life by using this unusual case. It's air-tight, waterproof (to 10 feet), and crush resistant. It's made of hi-impact black ABS and looks like a military design. The interior foam is die cut to hold a Thinkjet Printer or HP Disc Drive, an HP-41 or 71 and small accessories. 18" x 14" x 7" external size. Stock #IL-626 [Printer Case] List \$120 \$99.95

— HP-IL Peripherals —

THINVIEW LCD PORTABLE MONITOR

Axonix



Yes, that's right—a PORTABLE MONITOR for your portable computer. You get a full page: 25 lines of 80 characters each, yet it's only 1 inch thick and weighs 3 lbs. Serial (RS-232) and parallel interface ports built in—supports NEC 8201. HP-IL interface optional—supports HP-41, 71 or 75.

Internal NiCad batteries (included) allow 16 hours use on a 4 hour recharge—AC operation also. Bezel is Lexan and housing is ABS—so it really can take rough service (10g shock test, any axis)! Currently being tested.

Stock #TV25 [Thin View LCD] List \$850 \$759.95

Stock #TVHP-IL [HP-IL/TV25 Interface] \$144.95

UNIVERSAL CARRYING CASE

Designed for professionals who need hard copy in the field. It's made of water repellent, padded tan nylon, measures 8" x 7" x 3.5" and weighs only 7.5-oz.



Simply slip your 82143 or 82161 Printer or Cassette Drive into one of the handy compartments and put your HP-41 or HP-71 in the other. Each compartment has a two-way zipper for easy access. It comes with a detachable shoulder/hand strap and also belt loops.

Stock #A-554 [Carrying Case] List \$30.00 \$25.95

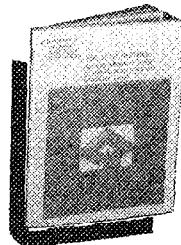
THE HP-IL SYSTEM: AN INTRODUCTORY GUIDE TO THE HEWLETT-PACKARD INTERFACE LOOP

by Kane/Harper/Ushijima

This is the definitive guide to the new Hewlett-Packard

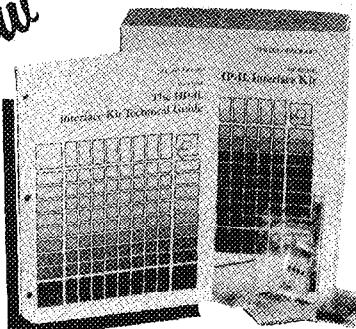
Interface Loop. The Loop is a bit-serial interface that links the HP-41 or the HP Series 70 personal computers to a new generation of compact peripherals. Summaries of all HP-IL remote messages and message sequences are also included.

Stock #P-134, HP-IL System, 106p softbound \$17.95



HP-IL CONVERTER KIT

Brand New

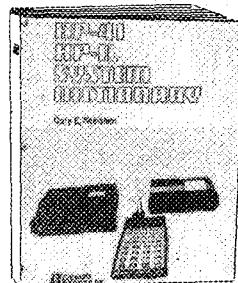


The HP-IL converter kit provides the special components necessary for building HP-IL into your product. Included are: the HP-IL integrated circuits, the HP-IL transformer set, the HP-IL panel receptacle, complete component-level documentation, four complete sets of parts for prototype evaluation, and HP-IL development software for use on HP-41 and HP-71 systems.

Stock #82166C [Converter Kit] List \$395.00 \$349.95

HP-41/HP-IL SYSTEM DICTIONARY

(PPC Dictionary) *Special Price \$6.95*
by Cory Reinstein and updated by PPC



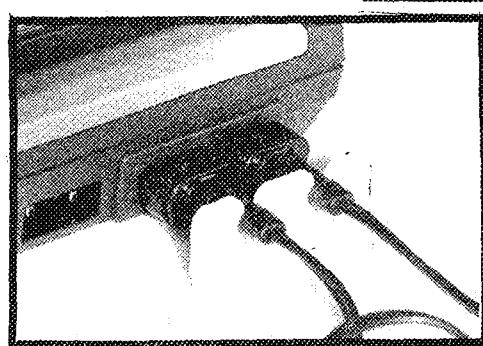
Updated in September 1983 from its original printing in 1982, it reflects the latest knowledge in this fast moving field. It includes over 900 of the most-used functions. Each function is described, outlined, and cross-referenced to other functions it might affect or those that can be used with it. Also included is an execution timing chart for HP-41 functions, a subroutine decision table, special "synthetic" instructions to use to assign any function to any key and methods to produce 128 tones, reference charts for the printer and time module, and lots more.

Stock #P-102, HP-41/HP-IL, 91p softbound \$6.95

HP-IL CABLE CLIPS

Megg

Brand New



Save time and frustration with these little plastic PIL-CLIPS by clamping together each pair of HP-IL cable heads for quick plug-in. Easily installed and removed, can be marked with pen or pencil for identification.

Stock #IL-619 [PIL-CLIPS] pkg. of 6 \$2.95

— HP-71 Systems —



HEWLETT
PACKARD

Well
Low Price

New HP-71B



- **BASIC Language** — 240 instructions!
- **CALC mode** — quick, easy computations!
- **BIG MEMORY** — 17.5 K, expandable to 33.5K!
- **STATISTICS** — 15 variables!
- **MATH** — FFT; 45 x 45 matrices, more
- ***FINANCE** — NPV, IRR, more!
- ***TEXT EDITOR** — manipulate, format!
- ***AC CIRCUIT ANALYSIS** — 72 branches, 24 nodes!
- ***SURVEYING** — large, integrated program!

*indicates optional module



Is this the world's most compact REAL COMPUTER? OR Is it the world's most powerful REAL CALCULATOR? HERE ARE THE FACTS. YOU DECIDE —

It speaks BASIC, with dynamically-declared variables and multi-line user defined functions. **BUT** it also has a CALC mode for quick, easy calculations, where you see intermediate results and recall them from a 5-level stack.

The rich programming language has more than 240 functions, statements, and operators. **AND** it includes enhancements like statistics with 15 independent variables, trigonometry, and IEEE floating-point math standards (12 digit precision). **FURTHERMORE**, variables are common to both modes, CALC and BASIC.

It has 17.5K RAM memory, expandable by 4K modules to 33.5K, and 64K ROM, expandable to a whopping 320K. **BUT** it weighs only 340g (12 oz.) and measures 7.5 x 3.8 x .5 inches.

It is fast, much faster even than the HP-41. **YET** it excels at technical computations, has Continuous Memory (remembers programs and data while OFF), and sports a clock and a calendar.

It has a block QWERTY keyboard, with typing aids for program entry. **AND** it has a 10-digit number pad, and the entire keyboard is redefinable.

It is an "open" machine, with a choice of two extra development languages, FORTH and assembly, so there is

going to be lots of software written for it. **YET** the 3 media options are ROMs, Cassette Tapes, and Magnetic Cards. **SO**, it's readily customizable.

The HP-IL plug-in option permits a variety of peripherals and instruments to be interfaced at 5,000 bytes/second — including printers, monitors, cassette drive, modem, plotter, or other computers. **HENCE**, there's a wide world of configurations, all with HP support, **YET** its LCD shows only 22 characters at a time from a scrollable 96 character line, and it runs for 60 hours on 4 disposable AAA batteries (AC adapter optional).

Powerful friendly applications software is available for MATH, FINANCE, TEXT EDITOR, AC Steady State CIRCUIT ANALYSIS, CURVE FITTING and SURVEYING. **BUT** there's no disc to spin — you'll just plug in a matchbook-sized module once, then call this specialized power from your keyboard.

It comes with Owner's Manual, Reference Manual, and Quick Reference Guide. **AND** also with a Blank Overlay, 4 batteries, User's Library/Third Party Software Card, and Carrying Case.

Calculator or computer, you're going to have a lot of fun.

Stock #HP-71B, List \$525 \$399.95

Stock #HP-71BLIT (literature) FREE

— HP-71 Systems —

HP-41 TRANSLATOR (48K)



Adds an HP-41 calculator mode to your HP-71 so you can do keystroke RPN calculating or programming with 147 standard HP-41 functions plus 23 unique new ones. Provides command and algebraic keystroke programming as well. Plus it translates HP-41 programs (your own or published ones) for your 71 and allows you to edit them, then run them superfast (3 to 8 times the speed of the 41). Transfer of programs can be done via an HP-IL loop.

Of course, this is a translator, not an emulator. You'll find some minor differences between working from your 71 keyboard and what you are used to on the HP-41—mostly simplifications of keying sequences. This software was programmed by William Wickes, who has written a nine page description of it in the *CHHU Chronicle*, V2N1 Jan/Feb '85.

As a FREE BONUS you get a complete FORTH language. It has a compiler and 338 built-in FORTH words which enhance the FORTH '83 standard with floating-point, string, HP-IL and file-handling words. All in all, with this module you'll have a 5-language machine (RPN, command, algebraic, BASIC, and FORTH) which can access the huge software library available for the HP-41. Isn't that a bargain for \$125?

Comes with Owner's Manual and Keyboard Overlay for HP-41 functions. The manual has *no* tutorial material so if you're a FORTH beginner you'll want to select a good book from our Advanced Programming section to get yourself started. Of course, you don't have to use FORTH at all to use this module but it's a natural language for you to expand into with your RPN skills.

Stock #82490 (41 Translator ROM)* List \$125.....\$105.95

*Can not be used with the FORTH Assy. Module.

EPROM CHIPS FOR HHP MODULES New

EduCALC
Have your own programs in a 71 module.

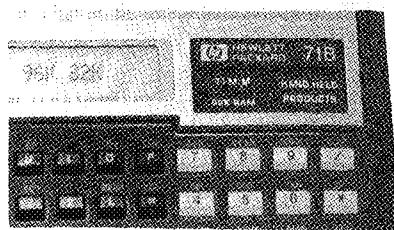
EduCALC offers EPROM chips and programming services, so you can have your own programs, with or without 32K added RAM, installed in the 71's card-reader space. Get a 32K EPROM (27256-200) for only \$100.00, programmed and installed, or a 16K (27128-200) for only \$75.00.

We also offer complete software and hardware for you to burn your own EPROM's yourself (using your 71 as controller). Call EduCALC for details—(714) 831-2637—ask for our Custom Products Coordinator.

GIANT RAM MEMORIES

Hand Held
Products

*Brand
New*



Up to 96K RAM power installs in seconds in the card-reader space of your 71 and becomes part of your main RAM. The 32K and 64K RAM modules have battery backup so they can be removed without fear of memory loss. The 32K RAM is also available with a 16-32K EPROM carrier, and the EPROM carrier is available alone from HHP in this same card-reader space format.

Put true desktop computer power in your handheld HP-71B!

Stock #71-602 [HHP-71 M/M 96K]	\$995.00
Stock #71-603 [HHP-71 M/M 64K]	\$695.00
Stock #71-604 [HHP-71 EPROM 32K]	\$99.00
Stock #71-605 [HHP-71 M/M 32K]	\$395.00
Stock #71-606 [HHP-71 RAM/EPROM 32K]	\$495.00

HARD-WIRE 32K RAM MEMORY

Your HP-71 can have an additional 32K of RAM memory (Stock #71-605) hard-wired. Allow 2 weeks.

Stock #71-616 [32K Hard-wire]	<i>New</i> \$89.95
-------------------------------	--------------------

Price does not include the 32K memory module.

MEMORY MODULE

Plug in up to four of these 4K RAM modules to increase user memory and storage capacity by up to 16K. Fits inside HP-71.

Stock #82420 (4K RAM)	List \$75.....\$65.95
-----------------------	-----------------------

HP-71B Programming Aids

This is an "open" machine; here are all the tools you'll need to develop your own sophisticated programs or to write proprietary software for it.

FORTH/ASSEMBLY DEVELOPMENT SYSTEM

(48k): Forth floating-point and string operations, 20 bit implementation, increase new vocabularies, sub. foreign error messages, Assembler — produce new Forth primitives, new BASIC keywords in LEX or BIN files.

Stock #82441 (FORTH/ASSY. Mod)	List \$150.....\$139.95
--------------------------------	-------------------------

SOFTWARE DEVELOPMENT UTILITY (Cass):

Up or down-load files from Series 80, IBM PC, and instructions for other PC's; use for program development, file and program transfer. Optional mag card can be ordered through EduCALC from the User's Library.

Stock #82440M (Mag Card)	\$5.00
Stock #82440 (CASS)	List \$35.00.....\$29.95

— HP-71 Systems —

SOFTWARE DEVELOPER'S HANDBOOK

Provides timesaving ideas and guidelines for consistency among programs written for the HP-71. A "cookbook" for applications programmers working with the HP-71. Recommended for independent software vendors.

Stock #71-90097M (Handbook with mag cards) \$45.95
Stock #71-90097 C (Handbook with Cassette) \$45.95
Stock #71-90097 D (Handbook with Disc) \$45.95

INTERNAL DESIGN SPECIFICATION (5 volumes):

Highly technical, complete documentation of the 71B hardware, bus, and operating systems

Stock #71-900068, Detailed Description \$50.00
Stock #71-900069, Entry Points \$50.00
Stock #71-900070, Source Code \$200.00
Stock #71-900071, Hardware Specs \$200.00
Stock #82401-90023, HP-IL \$50.00

HP-71B Accessories

Stock #82707A [Blank Mag Cards] 30 \$24.95
Stock #82708A [Blank Magnetic Cards] 100 \$69.95
Stock #82462A [Overlay Kit] 5 \$9.95
Stock #82715A [Notebook Card Holder] 5 \$9.95
Stock #82167A [HP-IL Cable] 1/2 meter \$5.95
Stock #82167B [HP-IL Cable] 1 meter \$7.95
Stock #82167D [HP-IL Cable] 5 meters \$9.95
Stock #82066B (AC Power Supply-220 volts) Euro \$24.95
Stock #AAA [Alkaline Battery for HP-71] Requires 4 \$1.10

HP-71B Application Pacs

It's like having an IBM mainframe computer, programmed for your profession, right in your hand! Each pac comes with a ROM module (16 or 32K) which fits neatly inside your 71B and complete documentation, written to HP's high standards. And, just look at these specs!

STATISTICS (32K)

WOW! 18 programs including Means and Moments, Histogram, Multiple Linear Regression, Paired t-Test, Unpaired t-Test, One-way ANOVA, Two-way ANOVA, Contingency Table, Mann-Whitney U Test, Kruskal-Wallis Test, Student's t-Distribution, F-Distribution, Chi-Square Distribution, Normal Distribution, Weibull-Distribution, Exponential Distribution, Binomial Distribution, and Poisson Distribution.

Stock #82489 (Statistics) List \$125 \$114.95

MATH (32K): Complete set of matrix functions — invert, transpose, conjugate, determinant, norm; dot product; sum, product, etc. — with size limited only by the enormous RAM memory (invert 45 x 45 real matrices, or 42 x 42 complex short, or 32 x 32 complex, and even larger ones with added RAM modules — all with friendly I/O prompts for entries, etc. Redimensioning of arrays, implicit as well as explicit. Binary/octal/hex/decimal conversions. Finite Fourier Transforms on up to 1024 complex points. Solve. Integrate, including multiple or improper integrals. Gamma, hyperbolic functions, plus IEEE Neighbor and Scaling. All commands extend BASIC.

Stock #82480 (32K MATH) List \$95 \$84.95

ACCOUNTING Revised SPREADSHEET

Paul Delman

Post income and expense items as they occur—at each month's end you'll have your report in 10 minutes. Menu driven ACCTGCAL program prints or displays monthly and year-to-date P/L statements, cash flows, percentages, comparisons, budget analyses, and surplus/deficit. Files for many different businesses can be created. Does monthly or cumulative report for a selected income or expense item. Revise inputs anytime or revise budget for "what-if" calculations.

Comes on disc or cassette tape—be sure to specify. Complete documentation includes two examples, an apartment complex and manufacturing firm. Requires HP-71B with one 4K Memory Module Printer, Cassette or Disc Drive, Video Interface and Monitor.

Stock #71-588 (ACCTGCAL) Disc or Tape \$79.95

FINANCE(16K): Time-value of money — n, i, PV, PMT, FV. Uneven cash-flow analysis, NPV, IRR, done on grouped flows with friendly prompting for input. Multiple file system of 71B stores data — in amounts limited only by memory size (so you'll tire of entering data long before you run out of capacity). Fast answers, can be sent to printer. Amortization schedules. Depreciation schedules: ACRS, Str. Line, declining balance, SOD.

Stock #82482 (Finance Module) List \$75 \$69.95

AC CIRCUIT ANALYSIS (16K):

Construct, analyze steady-state models using resistors, capacitors, inductors, transmission lines, voltage-controlled current sources, open or shorted stubs. Print/display gain/phase/gp. delay at any node or any frequency using linear or log instruments. Simulate/analyse passive/active filters, Operational/transistor amplifiers. Solve circuits of up to 72 branches and 24 nodes (requires 3 memory modules).

Stock #82481 (AC Circuit Module) List \$75 \$69.95

CURVE FITTING (32K): Fit a general (possibly non-linear) model function with up to 20 unknowns. Powerful data-entry routine. Determine local maxima or minima for a general real-valued function of up to 20 variables.

Stock #82484 (Curve Fitting Module) List \$95 \$84.95

SURVEYING (16K): Data file manipulation, up to 550 points: design, list, clear coordinates, duplicate points, balance traverse, and adjustment, rotate/translate points, scale coordinates. Coordinate Geometry: start, lines, curves, radial stakeout routines. Area/traverse computations.

Stock #82483 (Survey Module) List \$150 \$139.95

TEXT EDITOR (16K): Allows simple formatting of text output. Easy data entry and editing of TEXT files, transferred to and from HP-71B: Commands: text, edit, list, copy, insert, delete, search, format, sequencing, help. Generate memos, letters or notes.

Stock #82485 (Text Edit Module) List \$75 \$69.95

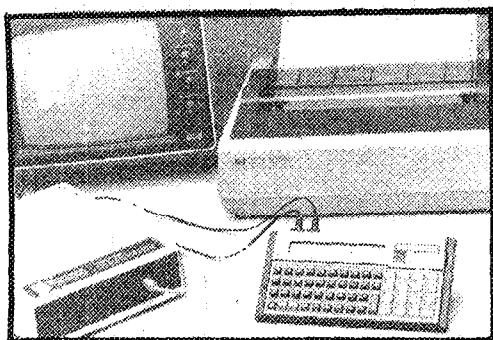
*Hook up your HP-71 to your IBM PC!
See "71 Talk" on page 70.*

— HP-71 Systems

DSPLEX71—DISPLAY SUPPORT UTILITIES for the HP-71

VSoft

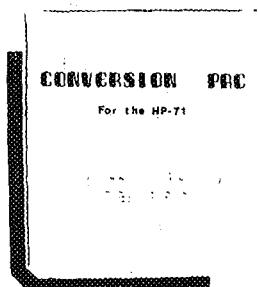
New



A 450 byte lexfile with 13 BASIC keywords to enhance and simplify programming. Makes full use of available video interfaces, both 32 and 80 column. Facilitates the development of menu-driven applications in BASIC by providing fast, easy-to-enter commands to control the display mode selection (80 column case), and selective screen clearing operations. Functions are also included to reverse strings, generate inverse video, and generate common control characters (LFS\$, CRS\$, FF\$).

Supplied on a magnetic card with complete documentation.
Stock #71-576 (DSPLEX71) mag card \$24.95

CONVERSION PAC



A Lex File with BASIC keywords to add Time, Temperature and Metric Units Conversions to your HP-71. There are 30 keywords in all—cubic meters to cubic feet, hrs/min/sec to decimal hrs, etc.

Stock #71-582 (71 Convert) card \$24.95
Stock #71-583 (71 Convert) specify disc or tape \$29.95

DATA COMMUNICATIONS PAC



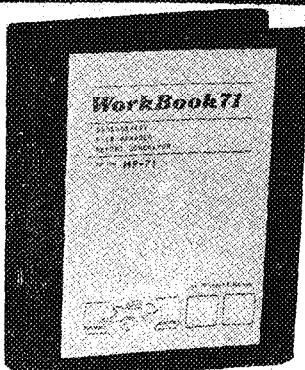
Use a phone line with this versatile terminal emulator to access other computer systems — you can connect to The Source, DJ News Retrieval, and other systems via a modem. Send/Receive electronic mail, make airplane reservations, get stock quotes fast. Incoming or outgoing data can be printed or displayed. Incoming data can be saved in a text file for later use—and there's a 500-character input buffer for reviewing information. Your programs can call all these DATACOMM features.

You'll need an acoustic or direct-connect modem or an RS232 interface, and you'll want a video interface or printer. Module plugs into one of four front ports on HP-71B.
Stock #82488 (DATACOMM) List \$150 \$139.95

WORKBOOK 71

Richard Harvey

Updated



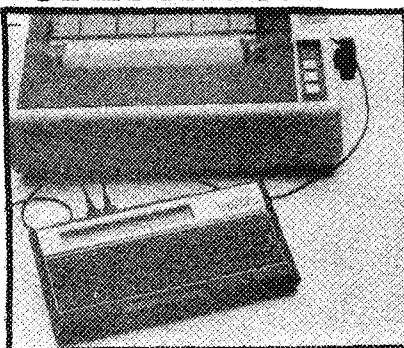
Spreadsheet, File Manager, Report Generator—a modern, all-in-one program of interrelated modules that works in your HP-71 without any accessories or added memory. Use it in your treehouse or space shuttle—it's as portable as your 71 itself. (When you aren't in the field a monitor will be useful and you may want a printer and disc drive.)

Gather data, analyze it, and generate reports—this modular system includes an Editor, Data Format Converter, Searcher and Report Formatter. Each compact module can operate separately from the others, yet can interact with other programs you may have.

Stock #71-611 (Workbook 71) Disc \$65.95
Stock #71-612 (Workbook 71) Cassette \$69.95

VSOS—SIMPLIFIED OPERATION SYSTEMS for the HP-71 and HP-75

New



Compact Executive and File Management programs that simplify execution of application programs and manage main RAM memory for HP-75 and HP-71 portable computers.

VSOS is a single application written in BASIC which assigns itself to a key and when executed provides nine Operation System functions at the press-of-a-key. Provides for loading and saving main RAM files from/to a designated mass storage device (including XMEM or PORT RAM) and for changing the designated device selection. VSOS will call any program in main RAM and the designated device. It will report the amount of available main RAM at any time, purge main RAM files, select the EDIT file, and the HP-71 version will also control file security. VSOS also provides password lock when used to turn off computer.

Supplied with complete documentation on a magnetic card. The HP-75 version is supplied in TEXT file form compatible with systems including the HP82718A POD. Nominal program size is 1000 bytes for the HP-75 and 1245 bytes for the HP-71.

Stock #71-579 (Simplified OS-71) \$29.95
Stock #75-580 (Simplified OS-75) \$29.95

— HP-71 Systems —

WANT TO SELL YOUR PROGRAMS?
WANT YOUR OWN IN-HOUSE ROM?
(minimum: 100 units)

EduCALC

New

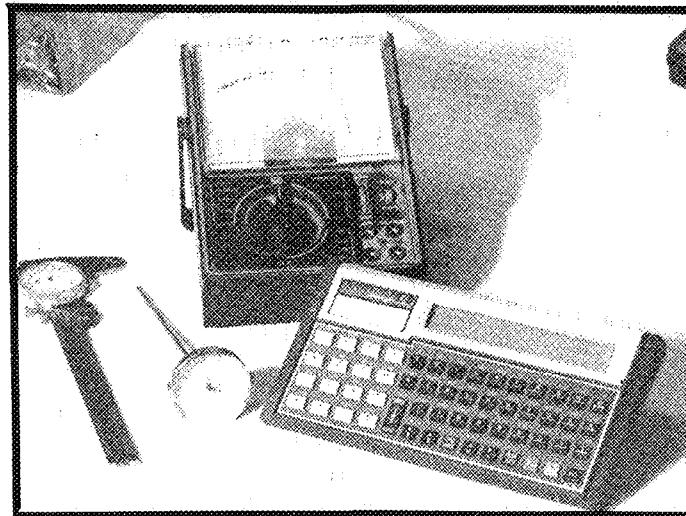
You can have your own HP-41, 71 or 75 programs made into an application module by HP, so it just plugs into the computer. Custom ROMs are feasible for as few as 100 units (50 for the HP-75), they take 10-12 weeks to manufacture. Prices for 4K HP-41 ROMs are \$95 each if you order 100, and \$33 each for 1000. For the HP-71, 16K ROMs are \$147 each for 100, \$55 each for 1000. The minimum order for the HP-75 is 50 units, 8 K, at \$145, 1000 are \$53 each. Larger ROM's are also available.

That's not all! You can get Custom Keyboard Touchpads or Overlays printed with your logo and key labels for as little as \$3 each. Or have your own Custom Magnetic Cards printed for as little as \$1.25 each. We can also supply a Software Development System so you can compose, edit, debug, and field test your program on a computer with big keyboard and display.

Call EduCALC for DETAILS: (714) 831-2637; ask for our Hewlett-Packard Custom Products Coordinator.

SUPERLEX 71 Conversion/Utility File

TITAN
Software

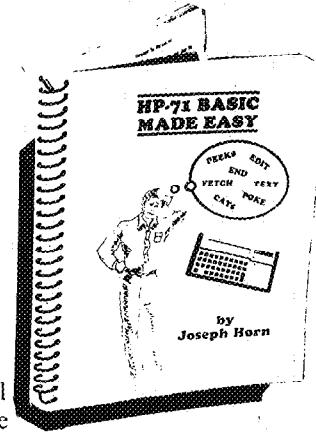


47 handy new BASIC keywords. There are 34 Time, Temperature and Metric Unit Conversions — cubic meters to cubic feet, hrs/min/sec to decimal hrs., etc. It also contains 13 keywords that control the AC and ALARM annunciators, quick contrast and display scroll control, lowercase string conversion, a running clock keyword, and more. All keywords may be used in programs or from the keyboard. Comes on card, disc or tape.

Stock #71-637 (Superlex Card) List \$49.95 \$45.95
Stock #71-638 (Superlex Disc) List \$54.95 \$49.95
Stock #71-639 (Superlex Tape) List \$54.95 \$49.95

HP-71 BASIC MADE EASY

by Joseph Horn

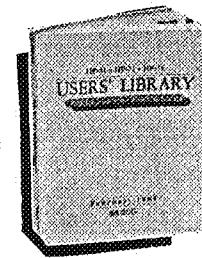


What your owner's manual doesn't reveal! Learn how to use CALC mode and the command stack as efficiently as RPN. Learn BASIC and operation system tricks including PEEKing and POKEing. Try some of the fascinating, fun and elegant BASIC application programs, or modify them to fit your needs. Use the alphabetical syntax guide for quick reference when you are programming. An excellent tutorial and an indispensable reference, this is the definitive work on BASIC and the HP-71 by the world's foremost expert of the subject.

Stock #71-354, HP-71 BASIC, softbound \$18.95

USERS' LIBRARY SOFTWARE CATALOG for your HP-71

See page 16
for details



Stock #H202B, User's Lib Software Cat. \$4.95

HP-71 SOLUTION BOOKS

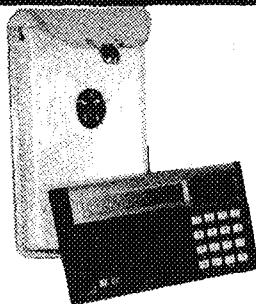
Stock #71-90064 Math \$13.95
Stock #71-90065 Games \$13.95
Stock #71-90066 Utilities \$13.95

NEED EXTRA OWNER'S MANUALS?

Stock #71-90001, HP-71 Owners Hndbk \$15.00
Stock #71-90010, HP-71 Ref. Man. \$25.00
Stock #71-90019, HP-71 Quick Ref. Man. \$2.00

—HP-71 Systems—

RIGID LEATHER CASE for the HP-71



This hard leather case is perfect for machine shop or outdoor environment. Light tan, 8-oz. cowhide, belt loop—the professional look.

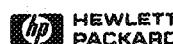
Stock #71-574 [HP-71 Rigid Leather Case] \$46.95

AC ADAPTER

Same stationary power source as for HP-41, HP-75 — does not recharge batteries.

Stock #82059 [Power Supply] \$18.95

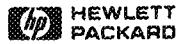
HP-IL INTERFACE



Plugs inside port at upper left of HP-71 to create a system that can print, plot, store, retrieve, and display information. Control or read instruments, or speak to other computers. 5000 bytes/sec. Built-in ROM includes 46 separate commands. Interface to HP-IL, HP-IB, RS-232C, GPIO, or Series 80.

Stock #82401 [HP-IL Interface] List \$125 \$105.95
(Owner's Man. Incl.)

CARD READER



Installs easily into top of HP-71 — uses the same hand-pulled cards as the HP-75 for inexpensive off-line storage of data and programs. 1.3K bytes per card.

Stock #82400 [Card Reader] List \$165 \$139.95

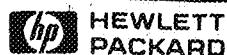
HP-71 MODULES HARD-WIRED into your MACHINE

S. O. S.

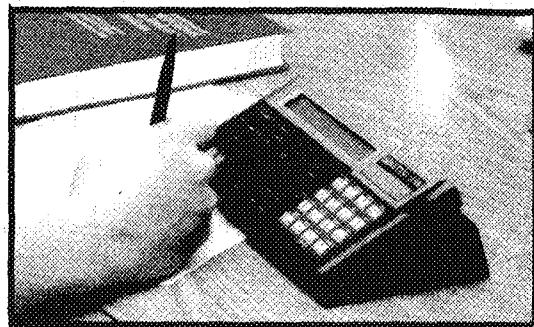
One, two, or even three modules (your choice) can now be mounted permanently for you inside an HP-71B. You may purchase the computer or modules from EduCALC or send us yours. The conversion takes about 3 weeks and EduCALC guarantees it for one year.

Stock #A556-1 [HP-71 Hard Wire, one module] \$39.95
Stock #A556-2 [HP-71 Hard Wire, two modules] \$89.95
Stock #A-556-3 [HP-71 Hard Wire, three modules] \$139.95
Stock #A556-4 [HP-71 Hard Wire, four] \$169.95

DESKTOP STAND for the HP-71



New



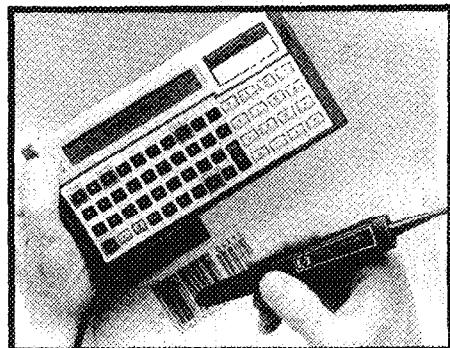
Just the right working angle for your eye and for your hand. Smoky acrylic, simple and handsome.

Stock #71-569 [HP-71 Stand] \$15.95

ZENWAND-71 BAR CODE READER

Zengrange

New



A Breakthrough—well under a thousand dollars now gets you a portable (one pound) data-capture device with 17.5K memory and super-fast validation/analysis/storage. Just plug this wand-interface into your HP-71B—its component HP wand and ROM will decode most industry-standard bar code types.

Via the HP-IL and RS-232 it can dump its accumulated data to your mainframe or network. (Additionally, Zengrange can provide customized module software for bar code label printing, specialized bar code format decoding, etc. Ask us for details.)

Stock #71-ZWD [Zenwand-71] List \$449.00 \$399.95
Stock #71-ZWDLIT (Literature) FREE

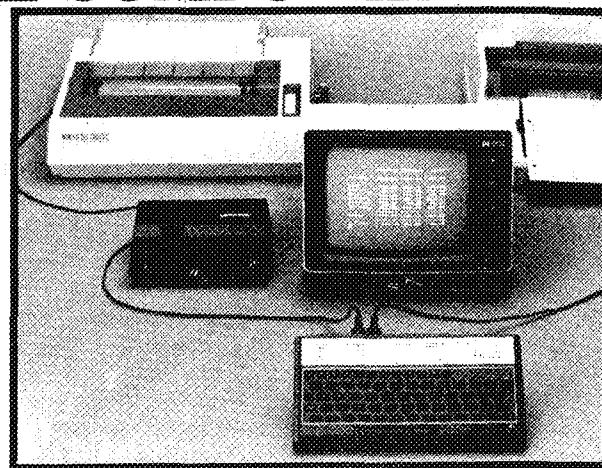
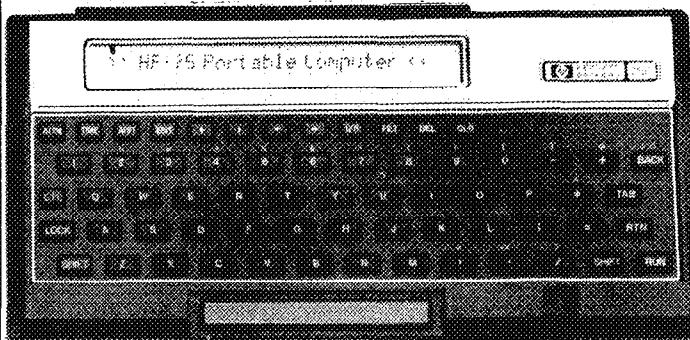
Peripherals

SEE HP-41/HP-71/HP-75 PERIPHERALS

Digital Cassette Drive, Thermal Printer/Plotter, Video Interface, Impact Printer, I/O Interface, Acoustic Coupler, RS-232 Interface, Video Monitor, etc.

HP-75 Systems

HP-75D PORTABLE COMPUTER



- **Small as a Book:** 5 x 10 x 1.25 inches, 26 oz, battery powered.
- **Powerful as a Personal Computer:** 48K ROM Operating System with 167 keywords (104 BASIC, 41 numeric, time, alarms, etc.).
- **Lots of Memory:** 16K RAM built in, expandable to 24K.
- **Visicale Spreadsheets:** plug in the optional 8K ROM module to get a custom system for Finance, Sales, Statistics, Science or Engineering.
- **Word-Processing Power:** plug in the optional 32K ROM Text Formatter to create a custom system that goes where you go, to your client's office, an airplane or hotel, etc. Write memos, catch up on correspondence.
- **Calculation Power:** plug in the optional 16K ROM Math module to get instant math, science and engineering capacity — complex numbers, matrices, solve, integrate, FFT, etc.
- **Continuous Memory:** programs and data are preserved when the unit is OFF — its LCD display permits 2 or 3

- weeks of normal operation before recharging batteries.
- **Built-in HP-IL Interface:** printing and mass storage anywhere, remote communication by telephone, expanded display capability.
- **Built-in Card Reader:** Convenient, inexpensive storage for data and programs. Touch-type QWERTY Keyboard: keys are redefinable, at will or under program control.

Built-in wand interfaces and port! Easy, fast, accurate data entry from bar codes.

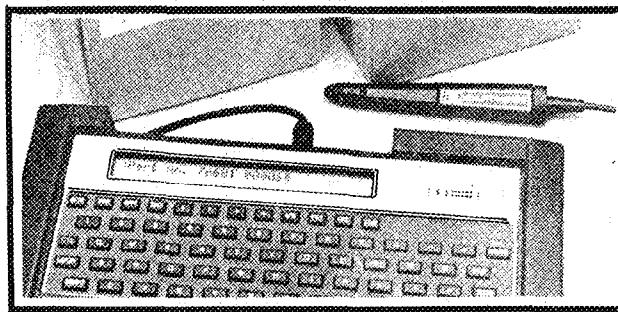
- **Good Documentation:** The Owner's Manual and Reference Manual are written to HP standards of excellence.
- **It comes Complete:** field case, battery pack, AC adapter/recharger, and HP-IL cables.

Stock #HP-75D, List \$1195 (Owner's Man. Incl.) \$995.95
Stock #HP-75LIT (Literature only) FREE

NEED EXTRA OWNER'S MANUALS?

Stock #75-9001, Owner's Handbook \$25.00
Stock #75-90004 (HP-75 Quick Ref. Manual) \$9.95

DIGITAL BAR CODE WANDS AND READER MODULE for the HP-75 D



Simply plug in the appropriate wand, key into the 75D the proper bar code command for the labels you want to read, and scan the bar code by moving the wand tip across it. Data can be displayed for verification and collected in RAM for processing or for transfer to another computer. Your 75D can be programmed to provide audible and visual feedback and prompting for the operator.

The HP-92267A is a high resolution (0.13mm) wand for reading high density labels. The medium resolution (0.19mm min. width of narrow element) HP-92267B is for code produced on dot matrix printers. Both have replaceable sapphire tips and push-to-read switch.

The software to decode scanned bar code comes in an 8K plug-in module which outputs ASCII data. Your 75D can process this data on the spot, send it to a text file or a monitor or a host computer, or file it and later transfer the file itself to the host computer or store it on cassette. The module also offers on command a check-digit verification and verification of field length of scanned label. It can decode the following bar codes:

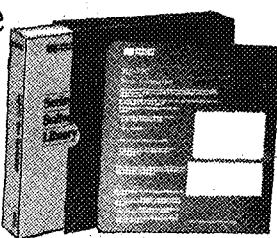
- 3 of 9 Code (USD-3)
- Interleaved 2-of-5 Code (USD-1)
- Industrial 2-of-5 Code
- 2-of-7 Code (Codabar, or USD-4)
- Code 11 (USD-8)
- Universal Product Code (UPC A or E)
- European Article Number (EAN 8 or 13)

Stock #92267A [HP-75 Hi-Res Wand], List \$160.00, \$139.95
Stock #92267B [HP-75 Med-Res Wand], List \$150.00, \$129.95
Stock #82725A [Bar Code Module], List \$75.00, \$63.75



—HP-75 Systems

MATH PAC for the HP-75



INCLUDES DEFINITE INTEGRALS AND FAST FOURIER TRANSFORMS

The Math Pac was designed to solve a wide range of mathematical problems. Its function set consists of a group of easy-to-learn BASIC commands that range from simple numeric and string functions to a sophisticated polynomial root-finder. These commands are instantly available for your programs or for direct execution in the computer's calculator mode.

All functions and operations are written in assembly language for fast and accurate results. You can select integer or decimal precision or full floating decimal to display results.

The function set includes:

Real scalar functions
Base conversions
Solution to $f(x) = 0$
Fast Fourier transform
Complete set of complex functions
Sophisticated polynomial root-finder
Definite integrals
Extensive real and complex matrix operations
Convenient input and output of arrays
Explicit and implicit array redimensioning
Stock #75-15015 (MATH PAC) List \$145. \$129.95
Complete with owner's manual and quick reference guide.

SURVEYING PAC for the HP-75



YOUR COMPUTER NOW BECOMES YOUR DATA-GATHERING DEVICE

This application pac gives you one integrated program that easily handles your routine surveying calculations and more. Calculations may be made in the field or at the office, it's up to you. Typical calculations include traversing, inverting, coordinate geometry, curve layout, and radial stations.

It has a unique system that lets you enter data in a variety of ways: by using bearings, north and south azimuths, angles left or right, and horizontal deflections left or right. You can choose any of these input modes independently of the output mode desired.

This friendly, menu-driven system eliminates the need to memorize commands or to use keyboard overlays. Descriptive prompts guide you through each function. If a mistake is made, the system displays an error message and allows reentry of the data.

Stock #75-15012 (SURVEYING PAC)

List \$295 \$259.95

MEMORY



The HP82700A Memory Module provides an additional 8KB of user RAM. This module plugs into a port located on the front of the HP-75C.

Stock #82700 [8K Memory Module] List \$195 \$165.95

EXPANSION POD for the HP-75

A single integrated data-communications package which fits as a cradle on your 75. Pod contains a 300-baud, direct-connect modem and an "electronic disc" with 32K or 64K RAM memory.

The serial, asynchronous, full-duplex modem is Bell 103/113 compatible. Low-level commands allow user control of dialing (pulse or tone). High-level commands turn the modem on and off, transmit strings to and from it, and check its status.

Electronic disc commands enable you to create, access and modify files, establish a directory structure, and copy files into and out of disc.

To top it off, the pod has two industrial bar code decoders built in — 3 of 9 Code and Code 11.

Stock #82718A [32K Expansion Pod] List \$875. \$650.95
Stock #82718B [64K Expansion Pod] List \$1175. \$895.95

PLUG-IN MODULE SIMULATOR for the HP-75



If you're developing BASIC language custom software for the 75 you'll want this 16K medium to simulate a ROM module for field tests. Includes a set of BASIC commands on magnetic cards. Built-in battery retains contents when unplugged. (Physically, this is a separate box with a cable.)

Stock #82713 [16K Simulator] List \$495.00 \$419.95

QUERY-75

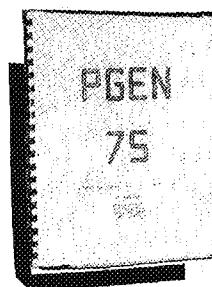
Megg

Brand New

Enhance the best modelling features of your HP-75 VisiCalc with database programming features previously available only with expensive software and larger desktop computers. Use the column header names or field names to selectively retrieve, sort, count, display and update data. Also get label making capability. 7000 byte program.

Stock #75-618 (Query-75 mag cards) \$80.00

PGEN 75 WRITES PROGRAMS for YOU



Jim Walters

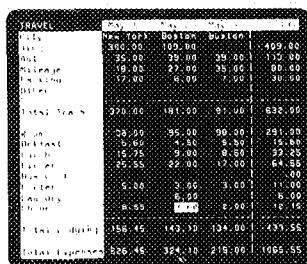
That's right! This program will produce friendly, interactive programs for you in less than a minute. You merely feed it equations (from text file or keyboard) and it will do the rest. You can even use special characters like theta or multicharacter variable names like "COST" or "VOLTS" in your equations.

It comes on mag cards with a complete manual. A real boon for businessmen, engineers, students — anyone who often needs to evaluate equations. (PGEN 71 COMING SOON.)

Stock #75-589 (PGEN 75) List \$45 \$39.95

—HP-75 Systems

VISICALC for the HP-75



THIS IS THE FIRST AND ONLY PORTABLE VISICALC!

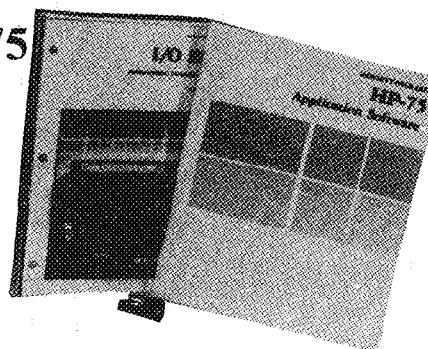
Now you can perform spreadsheet analysis anywhere. It's a complete software solution package with unique file and program capabilities. You identify rows and columns with easy-to-remember names instead of hard-to-remember letter/number coordinates. It was designed specifically for the portable environment. Getting "what if" results is fast and easy with the Alternate Viewing Window. Simply change a value in the primary worksheet window, then move to the alternate window with a single keystroke to review the results.

It's ideal for analyzing stock and bond portfolios, calculating breakeven points, analyzing cash flows, computing depreciation, even for keeping travel expense or billing records. For the Engineer it's a breeze to analyze tabular data gathered in the field, or perform experimental data reduction or engineering design and analysis. In addition it can access the HP-75 function set and application pacs.

This VisiCalc has been 7 years in its production and fits easily into its 32K-byte plug-in ROM.

Stock #75-15014 (VisiCalc ROM) List \$195 \$169.95

I/O ROM for the HP-75

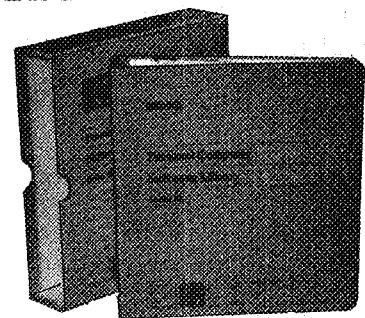


Enlarge the BASIC language capability of your 75 with HP-IL controller and advanced programming commands. You can use these in BASIC programs to perform many I/O tasks with any HP-IL talker or listener device. For example:

- Interface your 75 with another computer.
- Send data to another computer over telephone lines using a modem.
- Program your 75 to enter readings from an HP-IL digital voltmeter, then out-put the readings to an HP-IL printer.
- Write a program that remotely controls several HP-IL devices and triggers them to take readings. Then, your program can record the readings in program variables.

Stock #75-15001 (HP-75 I/O ROM) List \$95.00 \$84.95

TEXT FORMATTER for the HP-75



CREATE MEMOS, LETTERS AND REPORTS, ANYTIME AND ANYPLACE.

With the TEXT FORMATTER you have word processing power at your fingertips. You can prepare rough drafts or finished reports, review and edit notes for next-day presentations, write travel reports, business reports, or catch up on correspondence. And you can do it anywhere—just think of the time that won't be wasted.

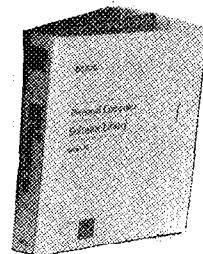
The TEXT FORMATTER is the perfect complement to the HP-75's built-in text editing capability. It lets you weed out typos, search for words, insert or delete characters, words, or blocks of text. In addition you can define paragraphs, set headings, number pages and justify text.

The TEXT FORMATTER'S command set is easy to learn, use, and remember. You can store up to six pages in the HP-75's 16K RAM, and up to ten pages with the optional 8K Memory Module.

Complete with owner's manual, quick reference guide, keyboard overlay and 2 prerecorded magnetic cards.

Stock #75-15019 (TEXT FORMAT) List \$95 \$84.95

DATA COMMUNICATIONS PAC for the HP-75



OBTAIN STOCK QUOTES OR ACCESS COM- PLET LIBRARIES

With the DATA COMMUNICATIONS PAC, a modem and the HP-75, you have easy armchair access to other computer systems and to commercial time-sharing systems such as THE SOURCE, Dow Jones News/Retrieval Service, and CompuServe. You can obtain stock quotes, send or receive mail electronically, and access complete libraries of information anywhere, anytime.

Menu-driven command set lets you access commands with a single keystroke. An editor is available to add, delete, change, or list code words.

Complete with owner's manual, quick reference guide, and 3 prerecorded magnetic cards.

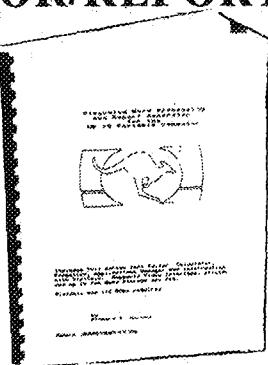
Stock #75-15035 (Data Comm Pac) List \$175 \$149.95

—HP-75 Systems—

WORD PROCESSOR/REPORT GENERATOR for the HP-75

Richard Harvey

New



You can give LOTUS 1-2-3 a run for the money, and do it in a pound and a half. Here's a full-screen Text Editor, Calculator, Formatter, and Applications Manager. It interacts with VisiCalc (you get full screen!) and supports Video Interface, Compatible with Harvey's File Manager and the HP Text Formatter.

Requires VisiCalc and I/O ROM's. *Easy to use*, with documentation, pocket guide and 8 magnetic cards.

Stock #75-571 (Word Proc/Report Gen) cards \$39.95

HP-75 FILE MANAGEMENT APPLICATIONS

Richard Harvey

A DATA BASE for your handheld! Set up personal files, mailing lists, etc., and interact with worksheets; format and print. Convert back and forth between VisiCalc, TEXT and even BASIC data files. Each program is compact (3.6K) and easy to use, with menus and prompts. Quick data-format set-up and simple data entry. Requires VisiCalc module. Stock #C-312, (HP-75, File Mgmt) 6 mag cards \$39.95

LEXFILES for the HP-75

VSoft

You can use these three separate utility support files to vastly increase your programming powers with your HP-75. Each file comes on a magnetic card with documentation.

MEMLEX is an 181 byte Lexfile containing 2 BASIC keywords (Peek & Poke) that let you inspect any location in RAM or ROM, and to alter any location in RAM.

DSPLEX is a 401 byte Lexfile containing 14 BASIC keywords to help make full use of video interfaces (both 32 and 80 col.). Provides fast, easy control of display mode, cursor positioning, selective screen clearing, mainframe LCD, and inverse video. Commands are executable from keyboard and from keyfiles (unlike instructions in I/O ROM). Contains routine to recover 648 bytes of RAM when VisiCalc is used.

MASSLEX is a 795 byte Lexfile containing 11 BASIC keywords to give you the ability to develop mass-memory resident database applications. Used with I/O ROM it frees system memory from data storage by allowing records to be written or read to and from cassette or disc and HP-75 BASIC variables. There are also utilities for listing the entire medium directory (without pressing arrow keys) and for determining the directory size.

Stock #A-551, MEMLEX \$15.95

Stock #A-552, DPLEX \$19.95

Stock #A-DSP, DPLEX Documentation \$10.00

Stock #A-553, MASSLEX \$24.95

Stock #A-MAS, MASSLEX Documentation \$10.00

HP-75C SOLUTION BOOKS

Electronics	Stock #75-13008	\$44.95
Finance	75-13009	\$44.95
Games I	75-13006	\$44.95
Games II	75-13007	\$44.95
I/O Utilities	75-13013	\$44.95
Math I	75-13003	\$44.95
Math II	75-13004	\$44.95
Math III	75-13005	\$44.95
Real Estate	75-13010	\$44.95
Statistics	75-13011	\$44.95
Test Statistics	75-13012	\$44.95
Media Duplication	75-13015	\$44.95
Graphics	75-13016	\$44.95

NOTE: All HP-75 Solutions Books are available recorded on mini-data cassettes for an additional \$12.00 each. All solution books come complete with magnetic cards.

ACCESSORIES for the HP-75

Stock #82707A [Mag. Cards] 30	\$24.95
Stock #82708A [Mag. Cards] 100	\$69.95
Stock #82710A [Overlay Kit]	\$14.95
Stock #82717-5 [Blank Overlays] 5	\$ 9.95
Stock #82001B [Rechg. Bat. Pk.]	\$14.95
Stock #82059D [Recharger]	\$18.95
Stock #82004A [Reserve Power Pak]	\$39.95
Stock #82002C [Recharger]	\$34.95

MASSUTIL

VSoft

Mass memory management for your HP-75! It's written in BASIC and menu-driven—your easy-to-use utility for copying, backing up, selective purging, cataloging, and listing to printers the files stored on your discs or cassettes. You can also determine unused capacity in both directory and file space.

Requires HP-75, I/O ROM Module, 80-column Video Interface, and one or more cassette and/or disc drives (the first two on the loop are supported). For cataloging and automatic listing functions, 82905B or 2225B printer is required. 8800 bytes. Includes DPLEX and MASSLEX without documentation. Provided on either disc or cassette (please specify).

Stock #A-558 (MASSUTIL Disc) \$59.95
Stock #A-559 (MASSUTIL Cass) \$59.95

HP-75 BASED SOFTWARE DEVELOPMENT SYSTEM for the HP-71

VSoft

You can easily develop and/or transfer BASIC applications back and forth between your HP-75 and HP-71—use this 75 resident program and its 71 resident companion programs. It is menu-driven to control the 71 and the IL loop from the larger 75 keyboard—power switching of the 71, transfer and transformation of files between these two computers and between the 75 and disc or cassette mass storage medium. You also get remote cataloging of the 71 file directory to video display, direct execution of 71 commands entered on the 75, and 75 RAM management.

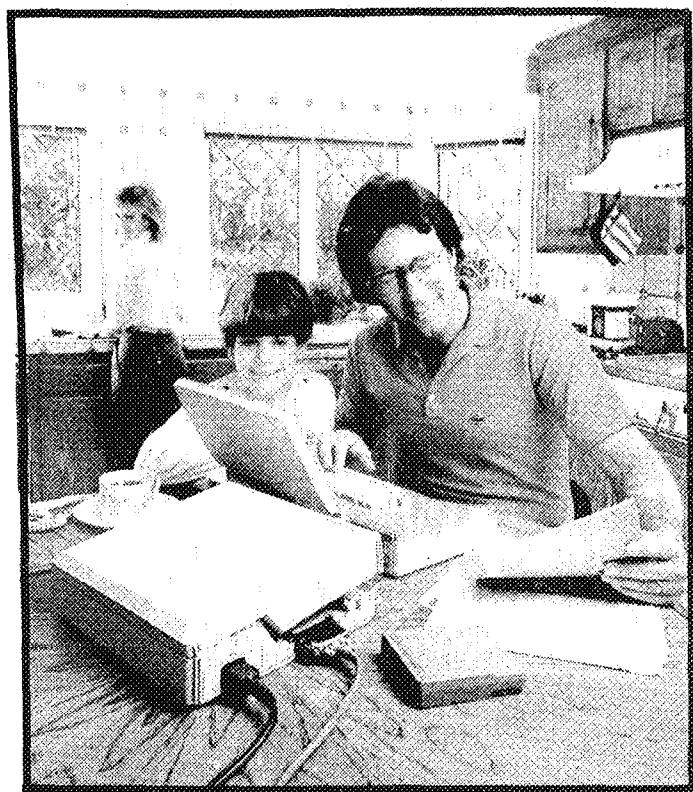
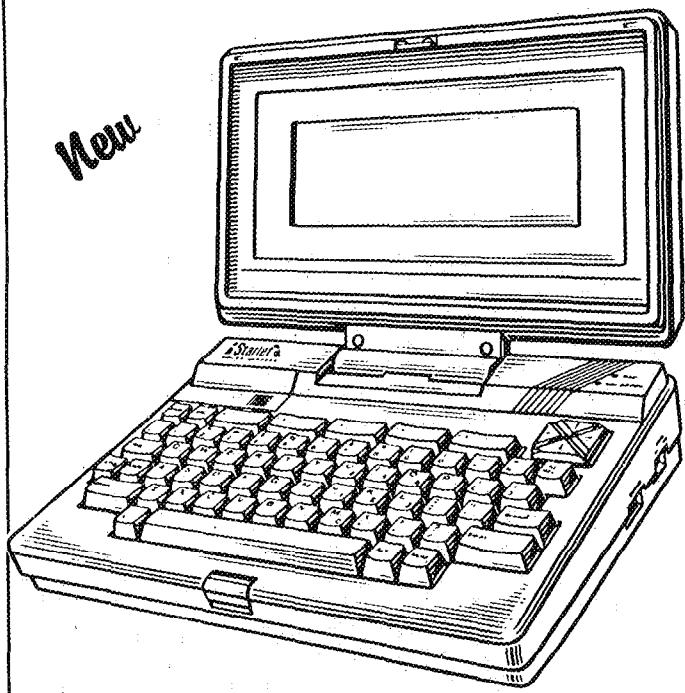
Includes both 75 and 71 BASIC programs, and the Lexfile DPLEX without documentation. Requires HP-75 with I/O ROM Module, 80-column Video Interface, and HP-71 with IL Module, plus disc or cassette drive (be sure to specify one).

Stock #7571 (Soft DEV7571 Disc) \$49.95
Stock #7471 (Soft DEV7571 Cass) \$49.95

NEC 8401A

PC-8401A STARLET

New



POWERFUL FAST

PC POWER that needs NO DESK! Just turn it on and everything you need is right there.

Built-in software is up and running the moment you switch on your Starlet—

- **WordStar-To-Go** most popular word-processing software among professional writers, with more features and more flexibility than most other programs for PC's. Produces beautiful documents.
- **Calc-To-Go** a portable version of Micro-Pro's CalcStar with an up to 256-row by 64-column worksheet and a healthy library of 21 intrinsic functions including MIN, MAX and logical operations. Files can be transferred to Lotus 1-2-3 or other spreadsheets, or databases on other PC's.
- **Personal Filer** lets you create simple "card-file" data bases and use Starlet's built-in modem to auto-dial stored phone numbers, or search for a record, or sort them all, or print them.
- **Telcom** supports auto-dial, auto-answer, and auto-log-on to remote databases, ASCII and Modem7 file transfers, and VT-100 terminal emulation. 300 baud through the modem or up to 19,200 baud through the RS-232C port.
- **CP/M Operating System** so you can run thousands of additional programs. Notice, however, that there is no BASIC built into the Starlet, though it is a disc-based option.

Improve Your Image Improve Your Effectiveness

COMPACT ATTRACTIVE

- **Big 80-Column by 16-line LCD display** with plenty of room for text and for spreadsheets.
- **Solid Typewriter Keyboard** with 59 keys in standard layout, plus 5 function keys (for 10 functions) and 4 cursor controls in a logical, diamond-shaped array.
- **System Slot** lets you add 32K RAM or a CRT/Disc Adapter Unit or 1200 baud Modem Unit (all optional).
- **I/O Jacks** for tape recorder, standard parallel printer, RS-232C for serial printer or data transfer, phone, and telecommunications.
- **Portable Power** 4 size C cells, disposable or NiCad, will power Starlet (you get at least 8 hours on alkaline cells).
- **AD Adapter** optional (PC-8471A-01).
- **Back-Up Power** for up to 5 days with built-in NiCads.
- **Dimensions** 8½" x 12" x 2¼".
- **Weight** 4.7 lb.s
- **Standard Equipment** includes CMT cable, phone cable, FREE time offers from Dow-Jones and OAG, and a telephone number for bulletin-board information about the 8401 or on-line answers to software questions. We'll include a few batteries to start you off.
- **Superb Manuals** 4 clearly written, well organized books describe your Starlet and its software, and there's a spiral-bound ready-reference guide to take along with it. All manuals have glossaries, indexes, and both tutorial and reference sections—these are winners!

Stock #8401 [Starlet Computer] List \$995.00 \$839.95

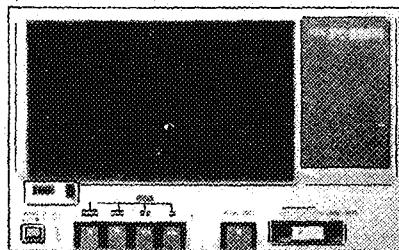
— NEC 8401A —

NEC 8401A Portable Peripherals

PRINTER—THERMAL, DOT MATRIX, BATTERY POWERED:

40 characters/sec., 40 standard or 20 wide characters/line, 8 x 320 dots/line graphics. Less than 1 pound with paper and dry cells. 4.3 x 1.6 x 5.1 inches. 8 bit Centronics parallel interface, cable listed under PC8201. AC adapter listed below. Stock #PC-8221 [Thermal Printer] List \$170.....\$159.95
Stock #PC-8221-PI [Thermal Paper] 5 Rolls \$14.95

DATA RECORDER— CASSETTE, BATTERY POWERED

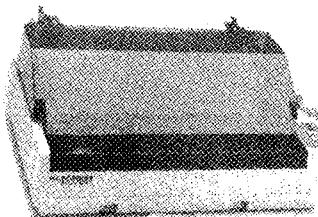


2 track monaural, 1.9 in/sec, 300 to 8000 Hz response, 1.2 pounds with dry cells. 7.3 x 1.3 x 4.6 inches. Cable included with PC8201; AC adapter listed below.

Stock #8281 [Data Recorder] List \$115 \$105.95
AC Adapter for Thermal Printer & Data Recorder
Stock #8271-02 [Peripheral Adapter] \$15.95

NEC 16-PIN DOT-MATRIX PRINTER

NEC



It's like having 3 printers: Do first drafts with dot-matrix speed, correspondence and reports in the near letter-quality mode, then print your graphics in the dot-image mode. Compact (13 1/4" W x 5 1/4" H x 10" D) and light (13 lbs.), with Centronics 8-bit parallel interface. Friction and tractor feeds for up to 10 inch paper (1, 2, or 3 copies) cut or fan-fold. Pica, Elite and condensed characters.

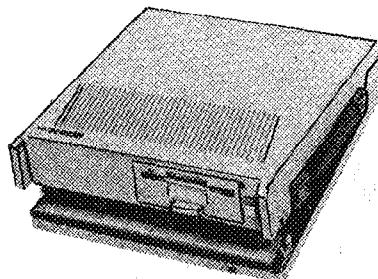
Stock #PC-PR103A [Tri-mode printer] List \$500.00.. \$419.95

TRUST OUR DESCRIPTIONS—We
guarantee that they are *complete and accurate*
—your money back if not as described.

NEC PORTABLE DISC DRIVE for PC-8201 & 8401

NEC

View



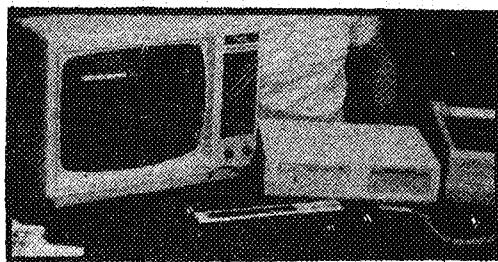
Fast, reliable mass memory for your lapheld computer — and it's fully portable. Just plug it in for 320K capacity on one 3 1/2 inch single sided disc. Less than 8 lbs. including AC pack — battery and recharger optional.

Stock #PC-8231A [Disc Drive] List \$799.....\$699.95

MONITOR—12 INCH GREEN

NEC

Resolution—600 horizontal lines at center—works great with the HP Video Interface.

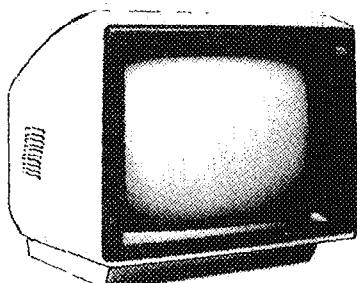


Stock #JB1260 [Affordable Green Monitor].
List \$149.95 \$139.95

MONITOR—12 INCH GREEN

NEC

Resolution — 800 horizontal lines at center.



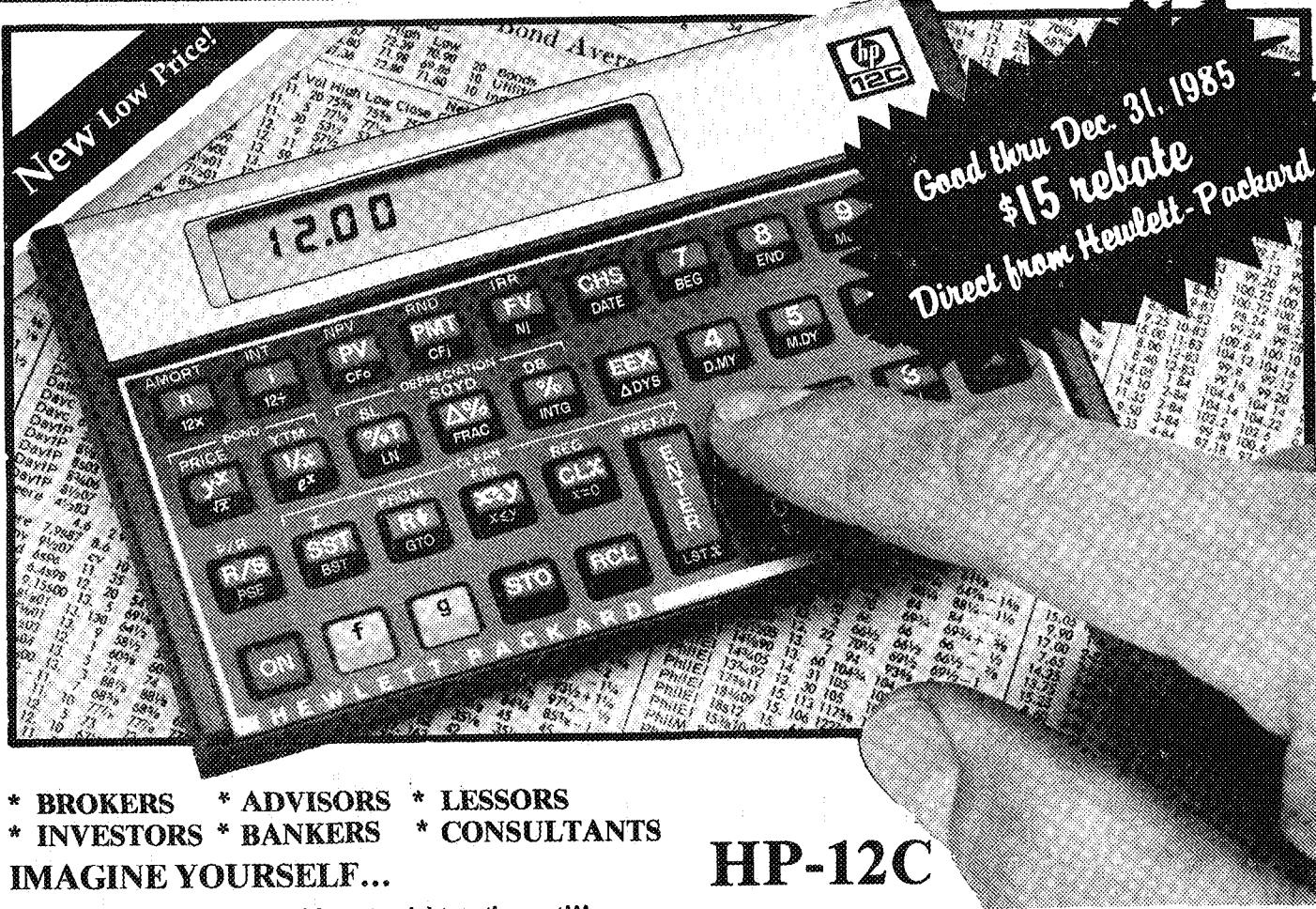
Stock #JB1201 [HI-Res Monitor] List \$200 \$159.95

PC 8201 Available

Stock #8201 [Computer] List \$695 \$349.95



Calculators



* BROKERS * ADVISORS * LESSORS
 * INVESTORS * BANKERS * CONSULTANTS
IMAGINE YOURSELF...

Calculating what-if answers with ease—right on the spot!!! Answer your client's questions instantly without tables. Be first with IRR and NPV figures, to the penny! Free yourself from arithmetic, so you can do the real thinking.

YOU CAN—get yourself an HP-12C calculator and choose the book or tape "SELF SEMINAR" listed below that fits your needs. Then invest a couple of hours study time. You'll be delighted with your own quick new power and ease.

FINANCE/BUSINESS: Solves for Number of Periods (n), Compound Interest Rate (i), Present Value (PV), Payment (PMT), and Future Value (FV); Amortization with Accumulated Interest and Remaining Balance; Net Present Value (NPV); Internal Rate of Return (IRR); Bond Yield and Price; Depreciation by Straight-Line, Declining-Balance, Sum-of-Digits (SOD); Odd-day's Interest; Simple Interest; Percent, Percent Change and Percent of Total; Calendar Functions; Beginning- or End-of-Period selection; 5 Financial Registers.

STATISTICS: Summations; 2-Variable Statistics with Means, Standard Deviations, Linear Regression, and Correlation Coefficient; Factorial

PROGRAMMING: Up to 99 Steps; Program Review; Unconditional Branching; 2 Conditional Tests; Pause.

Yet it's **FRIENDLY** - a first-time calculator user can expect to solve amortization and cash-flow problems with the five top-row keys in just a matter of minutes!

Stock #HP-12C, List \$120, (Batt. Incl.) \$89.95

Stock #A-76BP (Replacement Batt for HP-12C) Requires 3 \$89

HP-12C

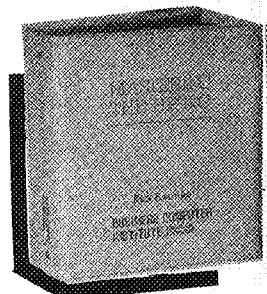
For the Businessman, Financial Professional, and Student who intends to join them—far and away the World's Most Powerful and Versatile Business Calculator/Computer.

LEATHER CASE — See page 41

MASTERING THE HP-12C

by Rick Fournier

New



If you work in Real Estate or Finance, here's your comprehensive audio-tape training program for home study. Stresses fundamental understanding of your calculator, not simply how to press buttons. This is the same course Rick has given in hundreds of seminars, including three invited presentations for National Association of Realtors national conventions.

It's really 3 courses, an Introduction, Problem Solving, and Programming. Each course has a manual and 4 tapes (total: 24 sides), with instructions and tests you can send in for grading. Stock #12-575 (Mastering HP-12C) tapes \$95.95

THE HP-12C TRAINING GUIDE

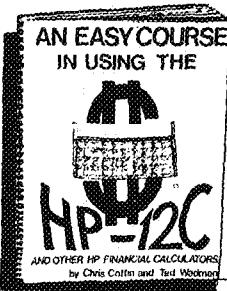


New! A self-seminar from Hewlett-Packard that begins at the beginning and ends with you feeling comfortable with your HP-12C. Lots of examples, tests with answers, summaries and reviews will guide you. When you're finished, you'll be able to calculate mortgage payments, loan amounts, determine IRRs, write and run a program, and much more!!

Stock #12-90022, Training Guide, 169p softbound \$14.95

AN EASY COURSE IN USING THE HP-12C

by Coffin/Wadman



Written just for you, to work at your own pace. You can relax, sit back and let these experts show you the way with lots of illustrations, example stories and quick reviews. This is a sometimes playful treatment, from the beginning with many common applications in lending and investment analysis. It may also be used with other HP calculators, such as the 37, 38, 67/97 with pac software and 41 with module software.

Stock #P-260, Easy Course-12C, 255p wirebound \$17.95

HP-12C SOLUTIONS HANDBOOK

Here are keystroke procedures from Hewlett-Packard supplementing your owner's handbook for applications to real estate, lending, savings, investment analysis, securities, forecasting, pricing, statistics, personal finance, Canadian mortgages, and more.



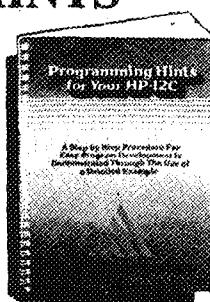
Stock #12-90009, HP-12C Solutions, 152p softbound \$14.95

PROGRAMMING HINTS FOR YOUR HP-12C

from
Chary Software

Brand New

Special Price
\$6.95

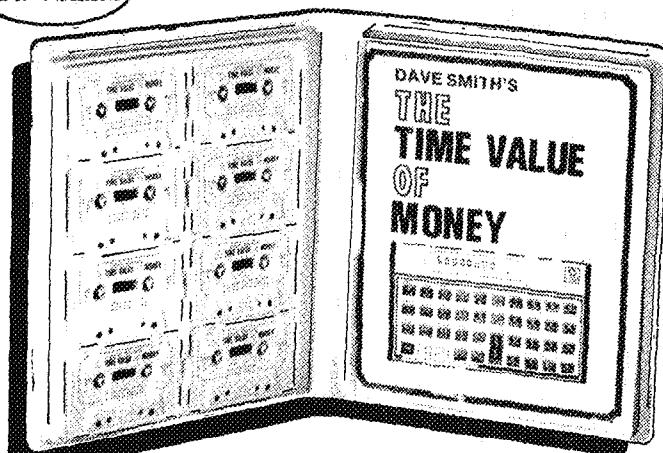


A little simple, direct advice that can help you a lot. Use it as you study your *Owner's Handbook*—you'll quickly be able to get your 12-C to do what you want it to. Success is sweet!

Stock #P-328, Prog Hints 12-C, 40p wirebound \$6.95

THE TIME VALUE OF MONEY

Dave Smith



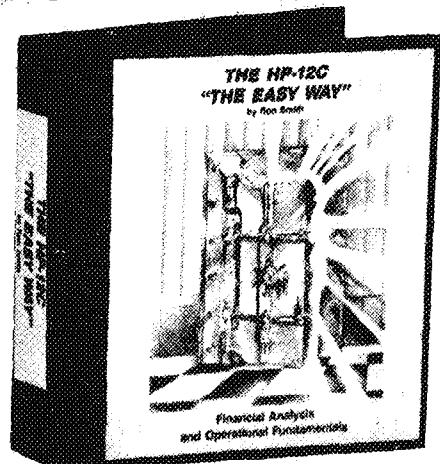
Sit back and relax as you learn—a popular, powerful seminar, ready to listen to, 8 tapes plus an 82 page manual. Thousands of professionals have taken Dave's course at \$195.00—this costs less, and YOU KEEP IT! No prior calculator skills are assumed here—each subject is taught thoroughly, in depth, while keeping it light and easy to understand.

Dave Smith is a full-time broker with an engineering education. He'll show you how to do cash-flow analysis, analyze and compare investments and much more. You'll get the comfortable power with your HP-12C that you want for a competitive edge!

Stock #A-537 (Time Value of Money) List \$145.00 \$139.95

THE HP-12C "THE EASY WAY"

by Ron Smith

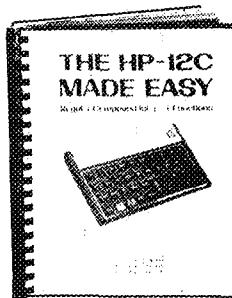


If banking or finance is your profession, this book and the HP-12C are essential. You'll find this guide to be the most complete reference book available anywhere. Written by Ron Smith, a former Hewlett-Packard field engineer, this material has been thoroughly tested in Ron's seminars. You'll learn all necessary operational fundamentals, discover creative applications of basic functions as well as improved methods, find out about useful programming routines and even undocumented product features. The material is presented in a 3-ring binder so that new material/techniques may be added. You'll want to keep it next to your desk.

Stock #C-274, HP-12C—Easy Way, 290p 3 ring binder....\$29.95

THE HP-12C MADE EASY

by Edric Cane



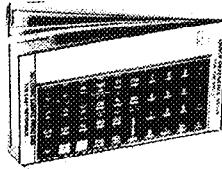
Open the box, open this book, and you're in business—master teacher Edric Cane will not so much simplify as make it obvious. A realtor himself, he chooses examples mostly from real estate. They illustrate all the compound interest features on the HP-12C for regular cash flows. No prior knowledge of the calculator is assumed (and this course can be used with the HP-37, 38 and the HP-41 machines as well).

This book was born in seminars where thousands of students have successfully gotten understanding and power—seminars at UCLA and UC Berkeley and to boards of realtors, executives and investors from New York to Hawaii. It anticipates your questions and gives clear, complete explanations of concepts.

Stock #P-273, HP-12C Made Easy, 246p combbound \$19.95

QUICK REFERENCE GUIDE FOR THE HP-12C

by Evan Gost

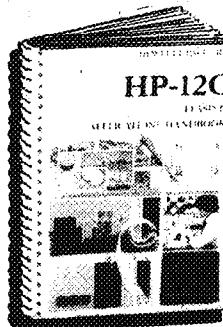


This booklet is no bargain by the ounce—that's because it's been boiled down so it fits in your shirt pocket (even with cigarettes there), or in the 12C case. It is a training guide and ready reference which supplements your Owner's Handbook. The author also gives seminars on the use of the 12C, so he knows what you need.

Believe it or not, this little book contains methods and examples covering every function of the calculator—plus more examples to steer you through problems complex enough to require two-stage solutions. It's concise, complete and useful.

Stock #P-243, Quick Ref, 36p softbound \$6.95

HP-12C LEASING APPLICATIONS HANDBOOK

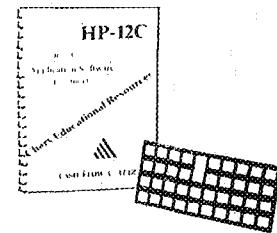


This is not a textbook. Hewlett-Packard shows you techniques which solve real problems that the leasing professional faces in today's marketplace. These practical applications include: analysis, structuring pretax/after-tax lease payments, lease vs. buy analysis.

Stock #90021, Leasing Appl., 117p softbound \$14.95

CASH FLOW ANALYZER

from
Chary Software *Now*



Brokers: Close more deals!

Investors: Know if a deal

"pencils out"! Sellers: Be sure of your highest price.

Upgrade your HP-12C to a Real-Estate Investment Analysis Computer—in just seconds you can have 14 investment parameters to review, and you can change 9 of them for "what-if" recalculations, on-the-spot (expenses, seller's interest rate, down payment, gross multiplier, price or income).

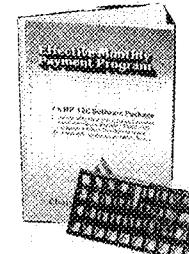
Includes program, handbook and color-coded keyboard overlay.

Stock #P-308 (Cash Flow Analyzer) softbound \$39.50

EFFECTIVE MONTHLY PAYMENT PROGRAM

Brand New

Chary Software

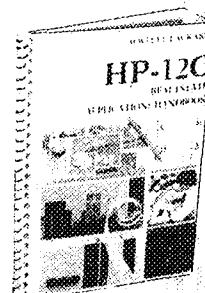


Tell your customers the good news! With this program in your HP-12C you can give them their total monthly payment (PITI) before and after income tax savings—to the penny. This is quick, simple, impressive salesmanship. You can give what-if demonstrations of exactly how price, down payment, loan payments, property taxes and insurance affect their cost of ownership both before and after income taxes.

Program comes with manual of clear, professional explanations, instructions and examples—just key it in. Handsome keyboard overlay included.

Stock #12-594 (EMP Program) \$18.95

HP-12C REAL ESTATE APPLICATIONS HANDBOOK



Here's help from Hewlett-Packard for brokers, investors, appraisers, analysts and others in making real estate decisions. Keystroke programs with formulas, explanations and worked out examples make it easy for you to get on-the-spot figures fast—without a lot of table look-ups. In addition to your calculator, you'll need the HP-12C Solutions Handbook to use this book.

Financing analysis, appraisal applications, investment analysis, differential cash flow analysis, financial management rate of return, miscellaneous feasibility measures, calculating the number of payments, A.C.R.S. tables.

Stock #12-90015, Real Estate, 102p softbound \$14.95



HERE'S YOUR NEW CALCULATOR

Need Another Calculator? Get the VERY BEST — rugged and dependable, with user-friendly power and thoughtful design — an up-to-the-minute handheld calculator made by Hewlett-Packard, the inventor of advanced calculators, the HP-35 in 1972, and leader ever since.

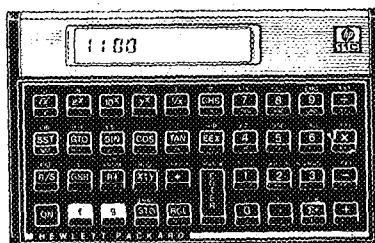
Each model features RPN Logic (the hallmark of HP calculators) and Continuous Memory. Its advanced design includes horizontal keyboard format, 10-digit LCD display, diagnostic self-tests, automatic shut-off, and long-life disposable battery.

Your new calculator comes to you in a box with • Black Vinyl Case • Padded Anti-static Bag

• Owner's Handbook • Registration Card • Service Card

A BIG PLUS - You can get Applications Guides, Handbooks, and Solutions Books focused on specific fields.

HP-11C ADVANCED PROGRAMMABLE SCIENTIFIC/STATISTICAL with extra capabilities for science and engineering



Even a high school student can easily master this rugged, sophisticated machine.

MATH: Log/Exp, Trig; Register Arithmetic, with up to 10 Data Registers; Factorials; Hyperbolics; Rounding; %Change; Absolute Value; Permutations and Combinations

CONVERSIONS: Rectangular to Polar; Decimal Angle to hr/min/sec; Degrees to Radians

STATISTICS: Summations; 2-variable Statistics with Means, Standard Deviation, Linear Regression, and Correlation Coefficient Gamma Function; Random Number Generator

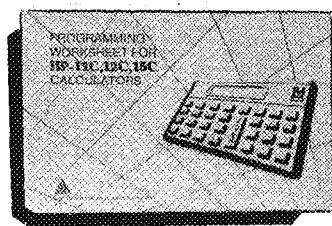
PROGRAMMING: Up to 203 steps, with Automatic Memory Allocation; Program Scrolling; Conditional and Simple Branching; Pause; 2 Flags Insert/Delete; 8 Conditional Tests; Up to 15 labels; User Mode; 5 Redefinable Codes, Batt. incl.

Stock #HP-11C, List \$75 \$65.95

WORKSHEET FOR PROGRAMMING HP-SERIES 10 CALCULATORS

Chary Software

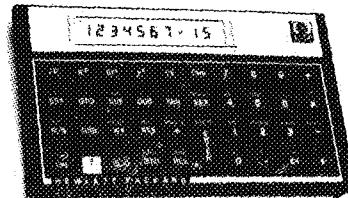
Brand New



Organize—work methodically—and be able tomorrow to understand what you did today. Compose your programs on these 11" x 17" worksheets—there are spaces for EVERYTHING: Labels, Instructions, Register Contents, Flag Status, Comments, Subroutines Called, Input and Output Variables, and Description. You'll be impressed by your own neat professional results.

Stock #10-596 (Series 10 Worksheets) 50 sheets \$7.95

HP-15C ADVANCED PROGRAMMABLE SCIENTIFIC/STATISTICAL with Special Functions



This is top-of-the-line for professionals and advanced students who require considerable computing power.

Every function and feature of the HP-11C, plus:

SPECIAL FUNCTIONS: Root Finding (Solve); Integration; Complex Number Arithmetic

PROGRAMMING: Up to 448 Steps, Up to 67 Data Registers; Up to 25 Labels; 12 Conditional tests; 7 levels of Subroutines; 10 flags

MATRIX OPERATIONS: Real and Complex Matrix Arithmetic; Determinants; Inversions; Linear Systems; Transpositions; Norms and Residuals (it can invert an 8x8 matrix in 85 seconds and solve 7 equations for 7 unknowns in 22 seconds!) Batt. Incl.

Stock #HP-15C, List \$120 [Batt. Incl.] \$89.95

HP-16C "COMPUTER SCIENTIST"

for Programming Specialists, Digital Electronics Designers and their Students — this is the Most Powerful Combination of Capabilities - true state-of-the-art, in a class by itself.



MATH: Arithmetic including Reciprocals; Absolute Value; Double Precision /, *; Boolean AND, OR, XOR, NOT

BASE CONVERSIONS: Hexadecimal-Decimal-Octal-Binary; Integer and Floating Point Modes

BIT MANIPULATION: Up to 64-Bit capability; Exact Integer Arithmetic; Left, Right Justify; Masking; Word-Size specification; One's, Two's Complement and Unsigned Mode; Status and Memory keys; Self-check; Bit Testing, Setting, Checksum and Clearing; Bit Shifting and Rotating; Scrolling by Digit or Windows

PROGRAMMING: Up to 203 Lines; Up to 101 Registers; Label Addressing; Looping with 8 Conditional Tests; Insert, Delete; Program Review; 4 Levels of Subroutine, Batt. Incl.

Stock #HP-16C, List \$120 \$97.95

Stock #82174A [Soft Vinyl Case for HP-10Series] \$4.50

HP-11C SOLUTIONS BOOK



Helps you get the most from your calculator, with real-world problems (plus a few good games). The math programs include coordinate transformations, differential equations, complex operations, and more. Statistics programs including normal, chi-square, t and F distributions, ANOVA, and more. EE programs include ladder networks and Smith Chart Conversions. Other chapters cover Mechanical Engineering, Chemistry, Economic Analysis, Surveying, and Games.

Stock #11-90009, 11C Soln Bk, 196p softbound \$14.95

AN EASY COURSE IN PROGRAMMING THE HP-11C and HP-15C

by Wadman/Coffin

New

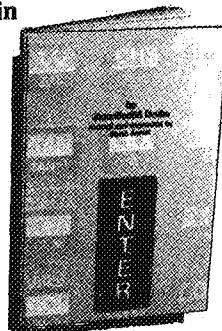


Jargon-free! A relaxed, self-paced course from two former HP support engineers. Their conversational style makes learning-to-program enjoyable, not intimidating, so you'll get new skill quickly and have fun doing it.

Stock #P-330, Easy Prog 11C and 15C, 256p \$17.95

ENTER (translated from the French) by Jean-Daniel Dodin

New



A hundred hints, suggestions, and techniques to help you get used to and use the RPN logic of HP calculators (especially the 11C and 15C). You're guaranteed to calculate and program faster and more reliably when you use these simple tips and subtle tricks.

Stock #P-329, Enter, 146p softbound \$5.95

HP-15C ADVANCED FUNCTIONS HANDBOOK



Continues where the *Owner's Handbook* leaves off—tells you how your 15C performs its advanced functions and how to interpret their results. There's a whole section on using SOLVE effectively; another that shows you just how to work with the numerical integration key-function.

A third section covers calculation in the Complex Mode and shows you how to use SOLVE and to integrate complex functions with example applications. Section 4 fully describes Matrix Operations, with some application programs (like least-squares and eigenvalues/vectors) that you might use later. The appendix thoughtfully surveys accuracy and error analysis. Stock #15-90011, 15C Adv. Functions, 221p softbound \$14.95

HP-12C KEY BOARD OVERLAYS

Brand New

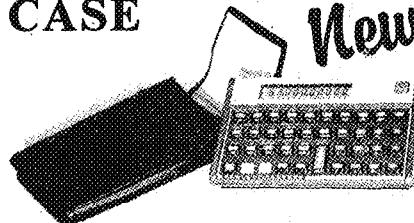


Programmers, this will make your unique programs easy for you as well as others to use. Two styles are available. The first, for program development, covers only the assignable keys and remains clear over the reminder. It has no adhesive backing. The second overlay, for finished programs, covers everything, and has a light adhesive backing, perfect for labeling the required keys.

Stock #12-640 [Programmers Overlays] Pk. of three \$5.50

Stock #12-641 [Run Time Overlays] Pk. of three \$9.95

LEATHER CASE SERIES 10



Touch this impressively soft cowhide. It's lined with a second layer of leather—and yours can be black, brown, or burgundy. Dress up your HP-10C, 11C, 12C, 15C or 16C—it will be handsome and it will last and last.

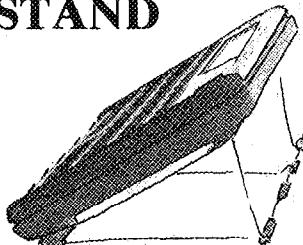
Stock #92169A [Black Leather Case] \$14.95

Stock #92169B [Brown Leather Case] \$14.95

Stock #92169C [Burgundy Leather Case] \$14.95

CALCULATOR STAND for your HP-10C, 11C, 12C, 15C, or 16C

New



Easier for your eye and for your finger. This unique clear plastic stand gives you just the right viewing angle. But when you're finished with your calculator, a touch of the finger reduces the extra thickness to fifteen hundredths of an inch, so it fits in its original case, stand and all.

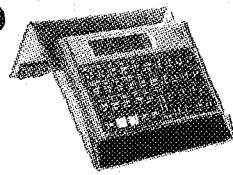
High bond tape pads secure it to your machine, battery remains accessible and data on the back is visible.

Stock #10-549 [Calculator Stand] \$8.95

- hp Calculators -

DESKTOP STAND

For HP-10, 11, 12, 15
or 16 Calculators



hp HEWLETT
PACKARD

Keep your calculator in sight! Made of sturdy smoked acrylic by HP — 5.5 inches wide by 4.5 inches deep, with nonskid feet.

Stock #92177S [Desktop Stand] \$14.95

OAK CALCULATOR STAND for your HP-10C, 11C, 12C, 15C, or 16C

PEAK Products



Thick, dense OAK — tilted just right for your eye. Non-skid pads keep it in place and its angle feels perfect as you key your instrument.

Stained oak complements your desk and blends with your other accessories.

Stock #10-629 [10-Oak Stand] \$14.95

NEED ACCESSORIES FOR OLDER-MODEL HP CALCULATORS?



Available for the HP-31E, 32E, 33E/C, 34C, 37E, 38 E/C:

Stock #

Rechargeable Battery Pak 82109A \$11.95
Recharger 82103 \$14.95
Reserve Power Pak 82103A \$29.95
Soft Vinyl Case 82110A \$ 4.95

Available for the HP-35A, 45A, 55A, 70A, 80A:

Rechargeable Battery Pak 82001B \$14.95
Recharger 82002A \$34.95
Reserve Power Pak 82004A \$39.95

Available for the HP-65A, 67A:

Magnetic Cards, 40 13141 \$19.95
Magnetic Cards, 120 13143 \$49.95
Rechargeable Battery Pak 82001B \$14.95
Recharger 82002A \$34.95
Reserve Power Pak 82004A \$39.95

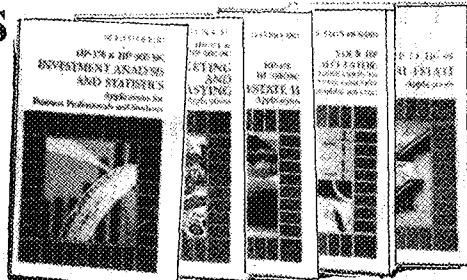
Available for the HP-97A:

Thermal Paper, blue 6 rolls 82045A \$ 8.50
Magnetic Cards, 40 13141 \$15.95
Magnetic Cards, 120 13143 \$39.95
Rechargeable Battery Pak 82033A \$24.95
Recharger 82059D \$18.95
Reserve Power Pak 82037A \$59.95
Soft Vinyl Case 82035A \$11.95

Available for HP-21 A, 22A, 25A/C, 27A, 29C:

Rechargeable Battery Pak 82019B \$14.95
Recharger 82041C \$17.95
Reserve Power Pak 82028B \$29.95
Soft Vinyl Case 82027A \$ 7.95

SOLUTIONS/APPLICATIONS BOOKS



HP-33E/C Standard Applications Book	H-367	\$ 5.00
Standard Applications Book-Spanish	H-368	\$ 7.00
Mathematics Application Book	H-330	\$ 5.00
Statistics Applications Book	H-331	\$ 5.00
Student Engineering Applications Book	H-332	\$ 5.00
Surveying Applications Book	H-333	\$ 5.00
HP-34C Standard Applications Book	H-322	\$ 5.00
Standard Applications Book-Spanish	H-323	\$ 7.00
Mathematics Applications Book	H-342	\$10.00
Statistics Application Book	H-343	\$10.00
Surveying Applications Book	H-345	\$10.00
Student Engineering Applications Book	H-370	\$10.00
HP-37E/HP-38E/C Real Estate Applications Book	H-324	\$ 5.00
Lending, Savings & Leasing Applications Book	H-325	\$ 5.00
Investment Analysis & Statistics Applications Book	H-326	\$ 5.00
Marketing & Forecasting Applications Book	H-349	\$ 5.00
Real Estate II (Income Property Analysis)	H-351	\$10.00
HP-38E/C Personal Finance Applications Book	H-352	\$ 5.00

NEED EXTRA OWNER'S HANDBOOKS?

Stock #H-717, HP-11C Owner's Hndbk	\$10.00
Stock #H-718, HP-12C Owner's Hndbk	\$10.00
Stock #H-719, HP-15C Owner's Hndbk	\$10.00
Stock #H-720, HP-16C Owner's Hndbk	\$10.00
Stock #H-721, HP-32E Owner's Hndbk	\$ 4.00
Stock #H-722, HP-33C Owner's Hndbk	\$ 8.00
Stock #H-723, HP-34C Owner's Hndbk	\$15.00
Stock #H-724, HP-37E Owner's Hndbk	\$ 8.00
Stock #H-725, HP-38C Owner's Hndbk	\$15.00
Stock #H-727, HP-67 Owner's Hndbk	\$25.00
Stock #H-728, HP-97 Owner's Hndbk	\$25.00

REPLACEMENT BATTERIES

Stock #A-76BP (Replacement Battery for HP-10C, 11C, 12C, 15C, or 16C) ea.\$.89

BUTTON BATTERY *New* REPLACEMENT—2000 HOUR

Like diamonds, these are "forever"—No. 357 batteries, also called 10L14 or WL-14 or G-13 or RW-42, for *super long life*. They also replace 750 hour batteries marked LR-44 or RW-82 or A-76.

Fits HP-10, -11, -12, -15, -16 and TI-35, -55, 66 and many others.

Stock #A-620 [Long Life Battery] \$2.50

— i Calculators —

TI-35 ECONOMICAL SCIENTIFIC CALCULATOR

TEXAS INSTRUMENTS
INCORPORATED

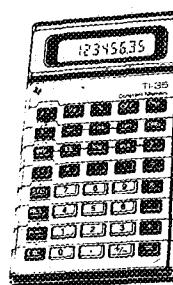
Modern, with algebraic logic
and statistics — a
BEST BUY for learning to calculate.

Includes wallet, 48 page Owner's Manual and 224 page STUDENT CALCULATOR MATH BOOK. LCD calculator with 1000 hour batteries — 4-key Constant Memory retains numbers when unit is off — Basic functions including factorials — powers, roots, logs, trig — 1-variable statistics including mean and variance.

Stock #TI-35 \$21.95

Stock #A-76BP (Replacement Battery for TI-35)

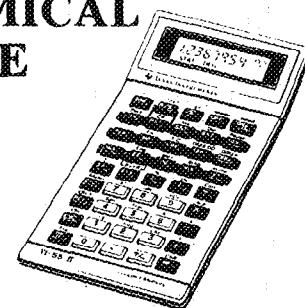
Requires 2 \$.89



TI-55III ECONOMICAL PROGRAMMABLE SCIENTIFIC CALCULATOR

With algebraic logic
and statistics

TEXAS INSTRUMENTS
INCORPORATED



Long-life batteries, carrying case and CALCULATOR DECISION MAKING SOURCE-BOOK Included — 8 Constant Memory registers with arithmetic — 56 program steps for rapid, accurate calculations — 112 powerful functions including conversions — 2-variable statistics including means, variances, regression/trend lines via least squares.

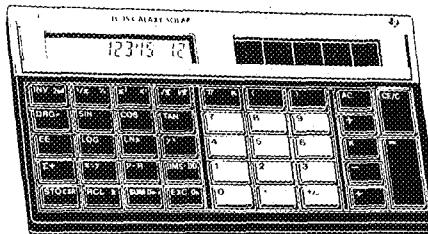
Stock #TI-55III, List Price \$50.00 \$39.95

Stock #A-76BP (Replacement Batt for TI-55) Requires 2 \$.89

TI35 GALAXY

TEXAS INSTRUMENTS
INCORPORATED

New



Solar-powered version of this popular scientific calculator — modern horizontal keyboard, color coded and slanted. Has all basic functions including factorials—powers, roots, logs, trig — 1-variable statistics including mean and variance.

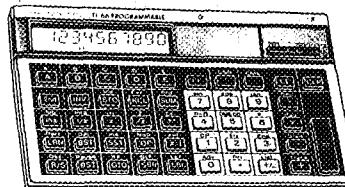
Stock #TI-35G [Galaxy Calculator] List \$28 \$23.95

Stock #A-76BP [Replacement Battery] Requires 2 \$.89

TI-66 PROGRAMMABLE

Big Program Power
in an Affordable *New*
Scientific/Statistical
Calculator

TEXAS INSTRUMENTS
INCORPORATED



- Up to 512 program steps, for complex problems
- Up to 64 Constant Memory locations
- Branching program steps with 9 levels of parentheses
- LCD display provides alphanumeric notation of steps
- 2-variable statistical functions for quick evaluations
- PC-200 Printer Accessory available

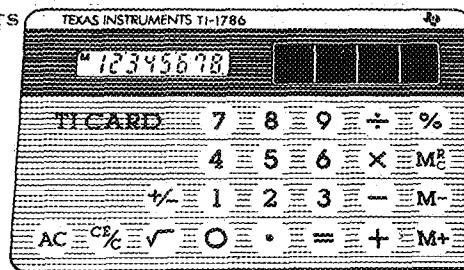
BIG MEMORY at a SMALL PRICE—for big programs—for many different programs at once—for lots of data. All standard functions and features for the solution of everyday math, algebra and trig problems. Program steps and data in memory are retained even when your calculator is OFF. Compatibility with most TI-58C program steps allows use of previously developed programs. Automatic Power Down turns your unit OFF when it's left unattended. Complete with manual, quick reference guide, wallet and batteries.

Stock #TI-66 [Programmable Calculator] List \$85 \$49.95

Stock #PC-200 [Printer] List \$85 \$59.95

CARD CALCULATOR

TEXAS INSTRUMENTS
INCORPORATED

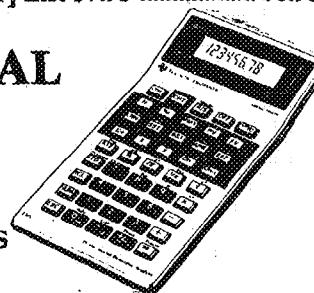


Take it with you everywhere—it's .1" thick, solar powered, and has 3-key memory with percent and square root keys.

Stock #TI-1786 [Card Calculator] List \$7.95 \$6.95

TI PROFESSIONAL BUSINESS ANALYST

TEXAS INSTRUMENTS
INCORPORATED



A powerful combination for the professional or graduate business student. It's the Top-of-the-Line from Texas Instruments and it has all the added features such as constant memory, tilt-top styling, LCD display and it's programmable up to 32 steps. In addition to all of the features of the Business Analyst-II it features Internal Rate of Return, Variable Cash Flows, Interest Rate Conversions, Time Value of Money, and Principle/Interest Problems. It comes complete with the Professional Business Analyst Guide to help you fully utilize the calculator's features. In addition the PC-200 battery operated thermal printer may be used with your Professional Business Analyst to produce printed output. The PC-200 uses 4 AA batteries (not included) and prints at 2 lines-per-second.

Stock #TI BA-55, List \$60 \$51.95

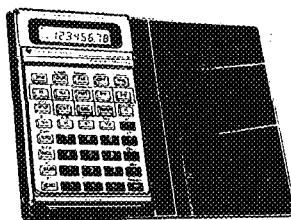
Stock #A-76BP (Replacement Batt for TI-BA) Requires 2 \$.89

Stock #AA (Batteries for PC-200) ea. \$.85

— i Calculators —

TI BUSINESS ANALYST-II

TEXAS INSTRUMENTS
INCORPORATED



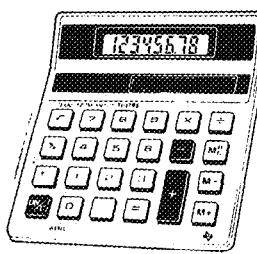
Built-in formulas give you a new ease in the world of business and finance. Standard math functions such as square root are provided in addition to statistical functions such as mean, standard deviation and linear regression. Business functions include lease/buy options, loan amortizations, sales/earning forecasts, and real estate mortgages all without going through manual table look-ups. With the Executive Calculator Guidebook (included) you'll find over 200 easy-to-follow business and personal situations described.

Stock #TI-BA II, List \$50.....\$43.95

BIG LITTLE SOLAR DESKTOP

TEXAS INSTRUMENTS
INCORPORATED

New



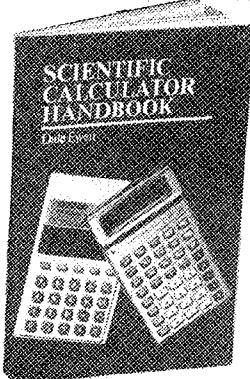
We're not usually excited by a new 7-function calculator, but this one is a fine engineering compromise.

It has surprisingly BIG keys with BIG spaces between them yet it's LITTLE overall, measuring 4.2x4.8x1.1 inches. Three-key memory, percent, square root. And SOLAR means it's reliable for occasional use—so you never turn it off and it never runs down.

Stock #TI-1795 [Solar Desk Calc] List \$11.00.....\$9.95

SCIENTIFIC CALCULATOR HANDBOOK

by Dale Ewen

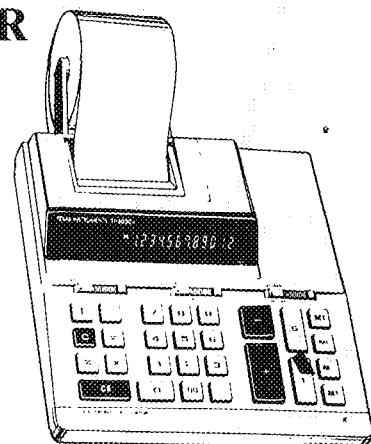


If your calculator's manual has confusing explanations and too few examples, here's help—lots of examples, with flow charts, step-by-step directions showing which keys are pushed in what order, and then what the display reads. There are also many exercises, all with answers. Examples are given for calculators with algebraic logic such as the Texas Instruments or Sharp models.

Stock #P-292, Calculator Handbook, 69p softbound.....\$3.95

TI-5030-II PRINTER/DISPLAY CALCULATOR

*Texas
Brand New*



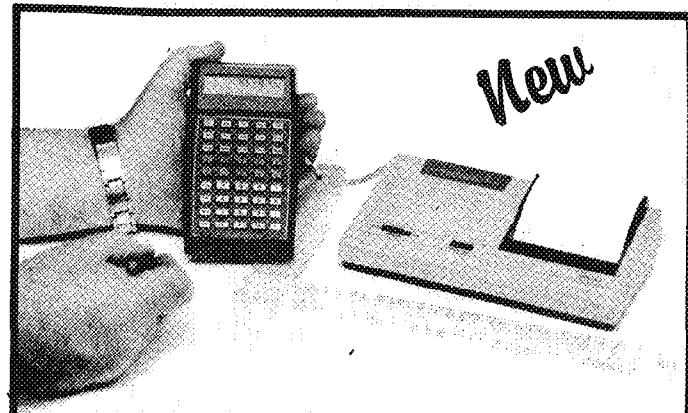
Sleek workhorse, AC-DC portable—uses standard 2 1/4" paper and has easy-to-read 12-digit display. Portable power from 4 AA batteries (not included) or use plug-in AC adapter (included). 12-digit printout with punctuation and audit trail, 4-key memory and independent add register that acts like a second memory, automatic constant and percent, item counter, decimal select switch, dust cover.

Stock #TI-5030-II [Print/Disp. Calc] List \$60.00.....\$39.95

Stock #AA (Batteries).....ea. \$.85

6' — 7 5/16" — 3 x 2' — 2 7/16"

THE DATA DIMENSIONER



A foot-inch-fraction-decimal calculator—enter data like 17' 3 5/16", then add similar measurements, or even decimal feet or meters, or multiply to get square footage, etc. Convert instantly between measurement systems.

It even has buttons for fractions in 16ths of an inch. Architects, contractors, draftsmen, engineers can instantly compute and verify all data to accurately dimension any room, blueprint, field drawing.

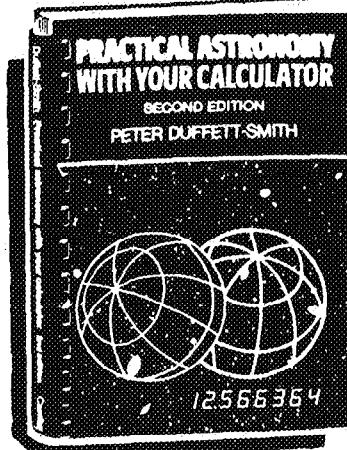
Never again will you need to hold up an entire work crew while you pencil it out on the back of an envelope. Time is the professional's money—and here is your key to big time savings. Includes instruction manual and six-month warranty. Optional printer plugs into calculator and AC to provide complete hard copy.

Stock #A-598 [Data Dim. Calculator] List \$150.00.....\$139.95

Stock #A-598M [Extra Data Dim. Manual].....\$1.25

Stock #A-599 [DD-84 Thermal Printer] List \$251.00.....\$235.95

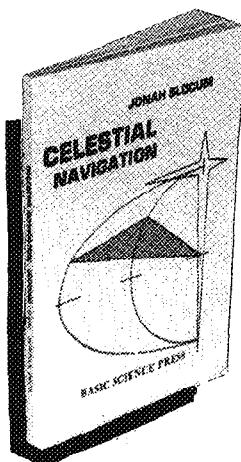
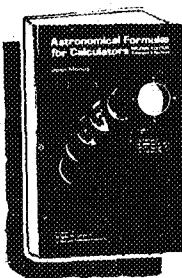
Astronomy & Navigation



PRACTICAL ASTRONOMY WITH YOUR CALCULATOR

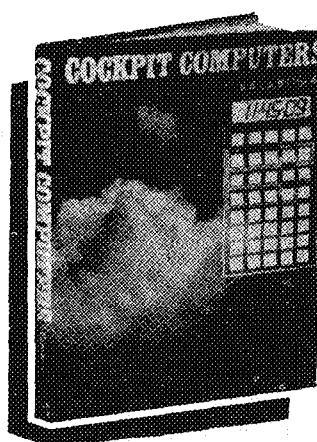
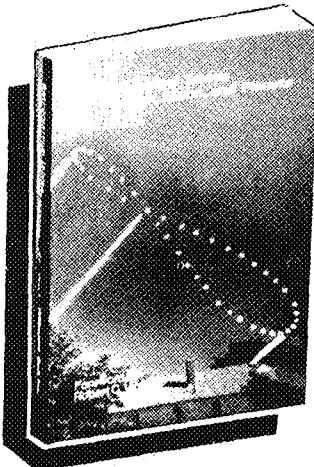
by Peter Duffett-Smith

ASTRONOMICAL FORMULAE FOR CALCULATORS
(2nd edition)
by Jean Meeus



CELESTIAL NAVIGATION
(3rd edition)
by Jonah Slocum

ASTRONOMICAL TABLES OF THE SUN, MOON, AND PLANETS
by Jean Meeus



COCKPIT COMPUTERS
by Paul Garrison

Special

All you need is this practical handbook, your scientific calculator, pencil, and paper—you can predict important astronomical phenomena! Theory is kept in the background so detailed instructions can be followed blindly for conversion of time systems and coordinate systems, calculations of planetary positions and phases, motion of the sun and moon, even prediction of eclipses.

Stock #A-83, Practical Astronomy, 129p softbound.....\$10.95

If you are an advanced amateur, competent with your programmable calculator, here's the start of many a rich and pleasant evening's investigations. This dedicated and thorough author (Asteroid 2213 is named for him!) has studied the classical treatises and selected the main perturbations of the Moon and Planets. He gives them concisely with enough secular terms so that these formulae can be used in serious historical work.

About forty topics in Calendar Problems, Celestial Phenomena and Mechanics, plus a few math techniques like Interpolation and Regression. No programs are given.

Stock #A-139, Astronomical, 203p softbound.....\$14.95

Here it is finally—the definitive HOW-TO book for yachtsmen, pilots and professional navigators. Step-by-step examples and programs for Algebraic logic systems.

Detailed introductions and basic concepts for Astronomy, Plane Navigation, Spherical Navigation, Time Measurement, Astronomical Triangles.

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For serious researchers and simple sky gazers—here's a wide and fascinating selection of data on past, present and future sky events. These listings of thousands of separate phenomena make up a valuable reference for every sky lover. Clear explanations are liberally sprinkled with examples. Rich in detail throughout, this book is difficult to describe briefly—for example, the listing of mutual planetary conjunctions alone includes 21 tables. Also, tables giving the dates of equinoxes and solstices on Mars will help interpret observations as far back as Huygens and Cassini, right through the recent Viking missions and into the 21st century.

HP-41C, TI-59, and HP-67 programs are offered for occultation calculators. On the cover of the book is an analemma, a photograph (!) exposed over the course of a year to show the apparent movement of the sun along the ecliptic.

Stock #A-293, Astronomical Tables, 386p softbound.....\$19.95

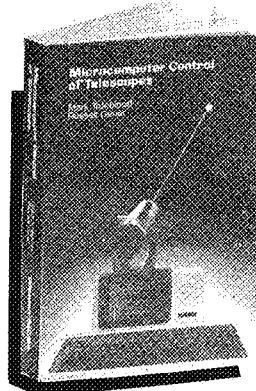
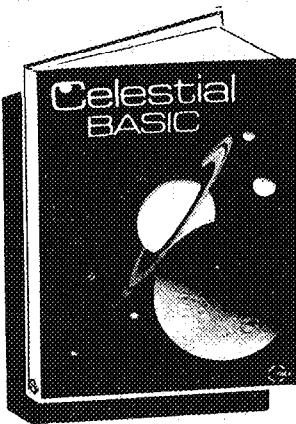
Here's a simple and readable alternative to owner's manuals. It's a super-practical guide — for 20,000-hour pilots and students alike — for using calculators to quickly find: Fastest airspeed and most economical altitude for a given flight, wind direction and velocity at a given moment of flight; correct speed for a flight to avoid a fuel stop. It has in-depth discussions of 21 specific problems including time to climb, area navigation and true airspeed. Contains evaluations, instructions and programs for TI-58C/59, HP-41 and dedicated aviation calculators like Heathkit OC-1401, Navtronic 1701 and TI Avstar. (You can use this book for comparison-shopping.)

Stock #M-129, Cockpit Computers, 249p hardbound.....\$16.95

Astronomy & Navigation

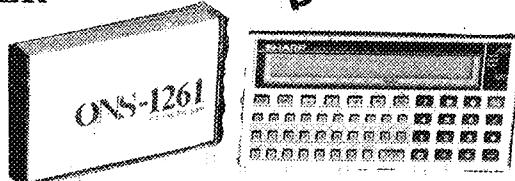
CELESTIAL BASIC

by Eric Burgess FRAS



ONS-1261 FLIGHT COMPUTER

Henry Culver



See CELESTIAL NAVIGATION with the HP-41, page 10

Brand New

Astronomy on your computer — a home planetarium! Programs for the serious amateur as well as the occasional stargazer — they convert time from one system of measurement to another, calculate and display the positions of the Sun, Moon, planets, and stars for any date at any location, teach you to recognize constellations, and more.

The beauty of Burgess' approach is that his programs don't just print the results of the calculations; they display them graphically on the computer's monitor.

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Automate pointing! Robotize data-logging. At last, here's the how-to book that will renew your ability to do science "just for the fun of it." Starting with control theory, it progresses through motors, position indicators and correction factors to detailed descriptions of working systems capable of generating data of considerable scientific value.

These systems can be easily built or purchased, and the software is debugged and running. No one-of-a-kind or hard-to-find surplus parts are used.

There is also lots of time and money-saving help here if you want to design your own custom telescope.

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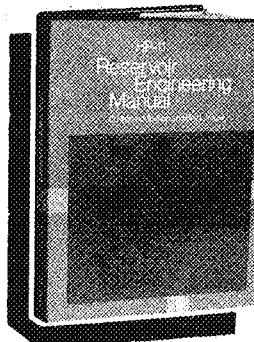
Self-prompting display gives you step-by-step instructions in plain English — so you'll be solving Great Circle, RNAV, VNAV, and Aircraft Performance problems right out of the box. It also computes Take-off Distance, Mach to True Airspeed Conversion, Radius of Action, and all arithmetic functions. Consists of a Sharp PC-1261 computer with flight-management program preinstalled in its 10K memory.

Stock #A-636 [ONS-1261] List \$349 \$319.95

Engineering

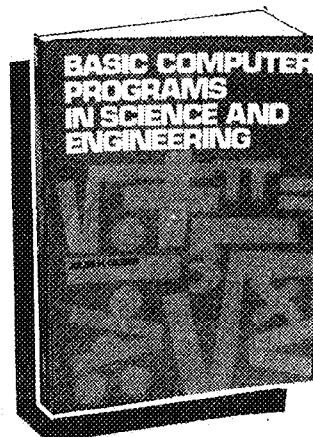
HP-41 RESERVOIR ENGINEERING MANUAL

by Meehan/Vogel



BASIC COMPUTER PROGRAMS IN SCIENCE AND ENGINEERING

by Jules Gilder



32 programs to help engineers predict oil, gas, and water reserves, optimize production, and evaluate opportunities to increase both. Each program includes an overview, equations, nomenclature, extensive examples with step-by-step keystrokes and printed outputs, user instructions in flow-chart form, program length and listing, plus barcodes. Requires HP-41 with Petroleum Fluids Pac.

Decline Curve Analysis (single or multiple wells), Waterflooding, Pressure-Transient and Well-Log Analysis, Fluid Properties, and Natural Gas Engineering.

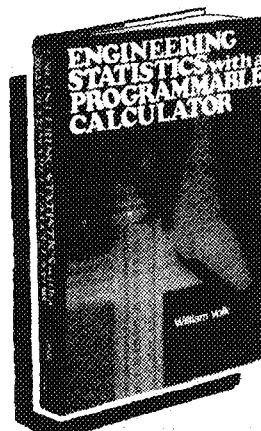
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Engineering

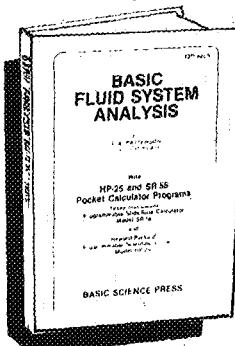
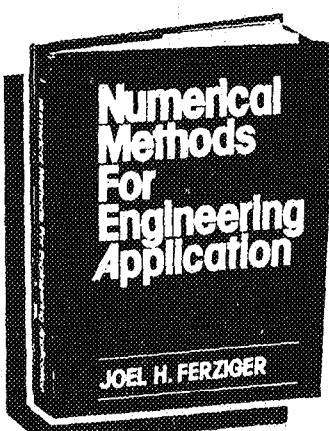


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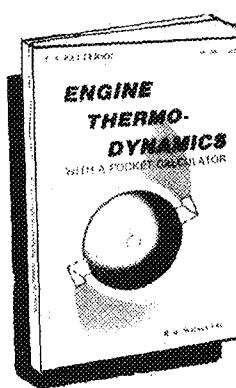
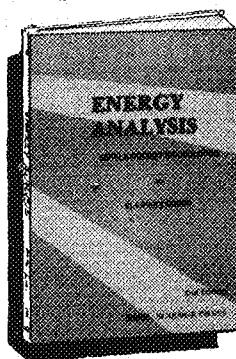


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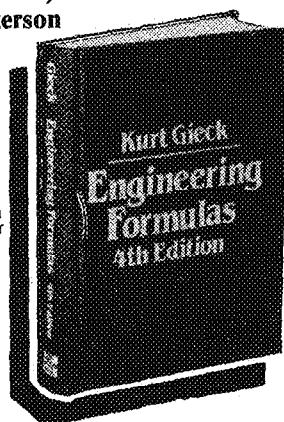


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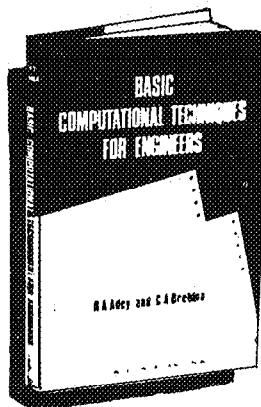
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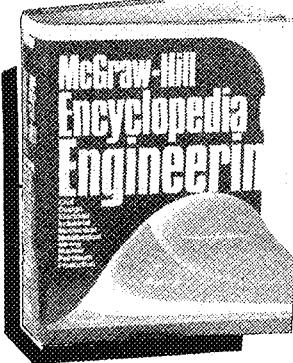
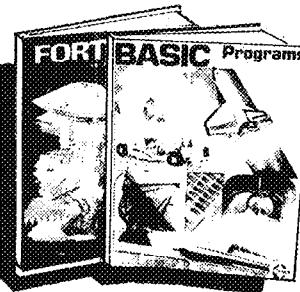


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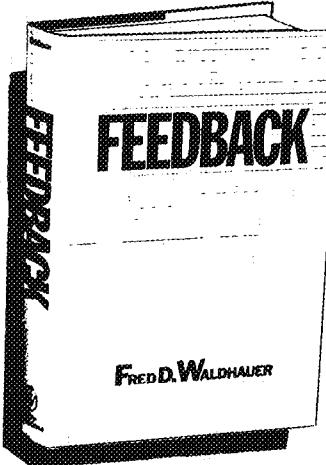


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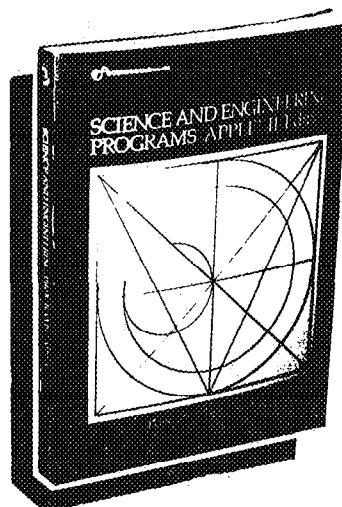
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SCIENCE & ENGINEERING PROGRAMS

Apple II Edition

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Electronic circuit designers (and even upper-division EE students) get here a neat and enjoyable solution to feedback analysis and design — a new "anticausal" paradigm which analyzes from output to input. This is a practical work, with many examples and calculator programs, plus a few exercises. Examples range from audio design through microwave integrated circuits. Thirty-one applications programs are given for the HP-41 calculator.

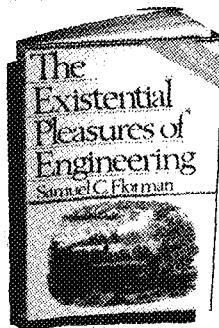
One program here converts your HP-41 into a "two-part network calculator" — it includes arithmetic, matrix inversion, lead-interchange operations, and is itself programmable! (This book is an outgrowth of courses taught by the author at Bell Labs.)

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46 common Science and Engineering programs that can be keyed in and run on the Apple II. If you don't have an Apple II there is a section on modification for other computers. The following is a list of programs: Interpolation, Regression, Data Analysis, Thermodynamics, Linear Equations, Differential Equations, Eigenvectors and Eigenvalues, Structural Analysis, Integral Evaluation, Fourier Analysis and Mechanical Properties Analysis.

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Engineering



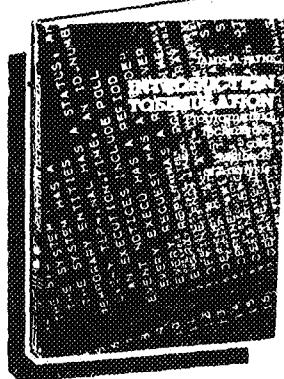
New

THE EXISTENTIAL PLEASURES OF ENGINEERING

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INTRODUCTION TO SIMULATION

by James Payne



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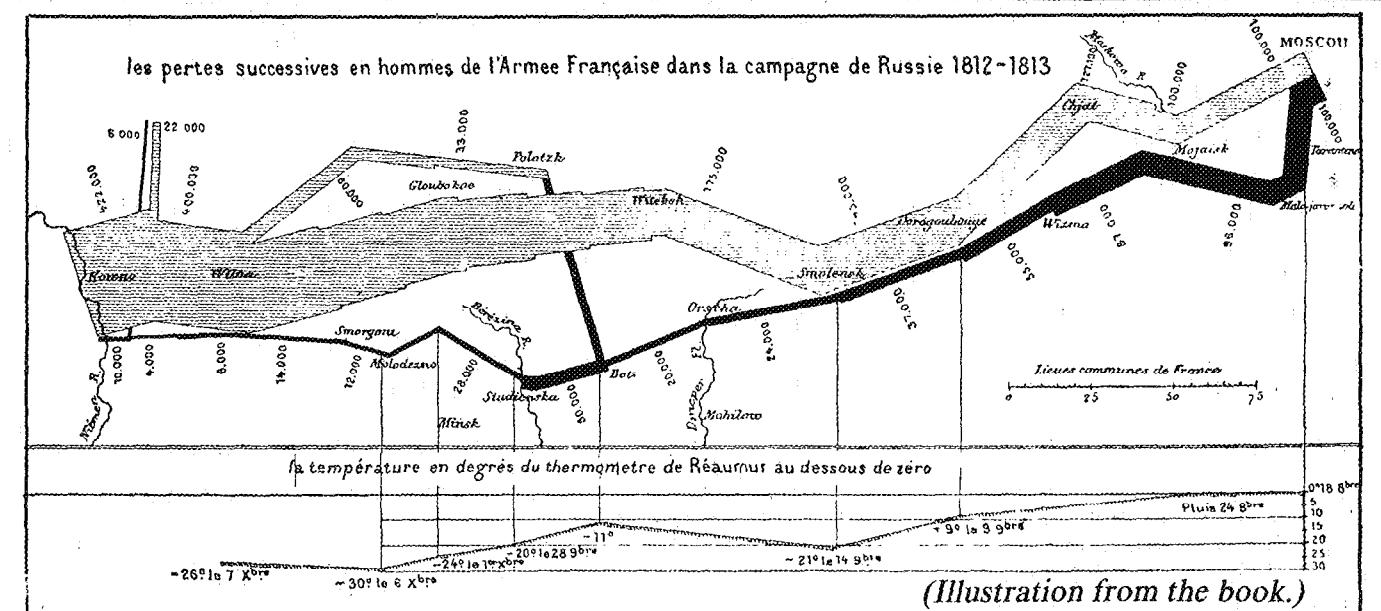
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Simulation? In *The Man with The Golden Gun*, James Bond once escaped by driving his Lotus car up the twisted approach of a collapsed bridge and jumping it over a canal. He did a complete roll in midair, landed upright on the other side of the canal, and sped off! James Bond's knowledge, skill and daring? No—computer simulation. A program mimicked the car's behavior with various ramp designs and approach velocities. When the scheme was really tried it worked the first time.

Why not learn how to make your errors on your computer, so that your new projects in business or engineering go right the first time? You'll need introductory programming and statistics courses first. Example programs are given.

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Math & Science



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by Edward Tufte

You will like this book, you will learn a lot from it, and you will use what you learn, I guarantee that. I couldn't put it down. *The Jour. Amer. Stat. Assoc.* review called it “the most important contribution so far to the study of the graph.”

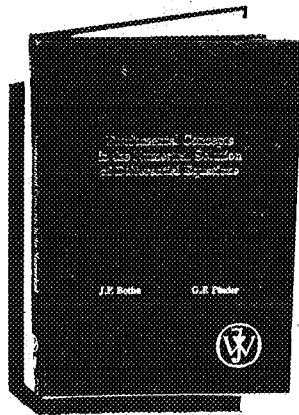
Nature summed it up: “An unusual and fascinating book... compulsory reading. A devastating critique of many

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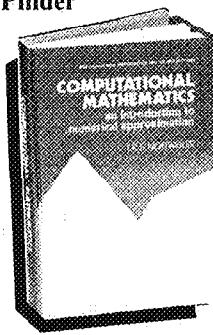
— Math & Science



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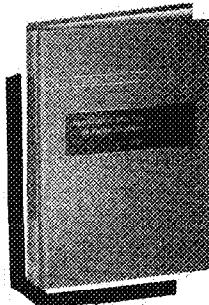
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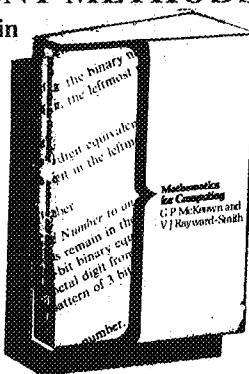
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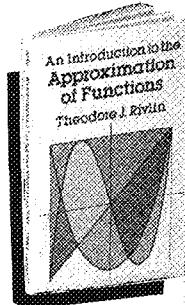
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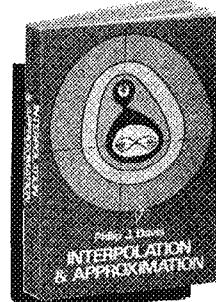
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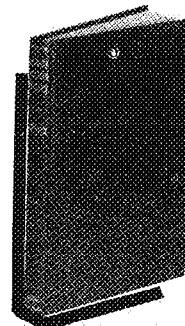
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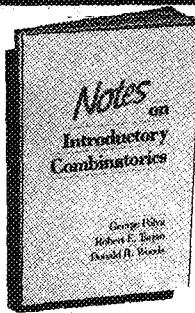
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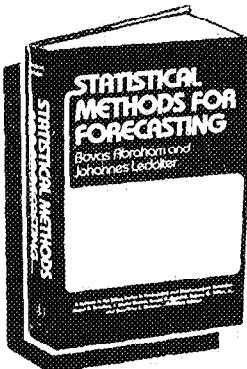
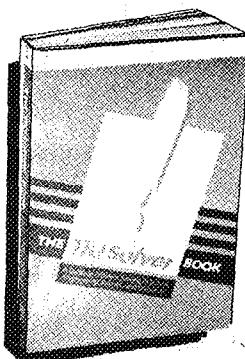
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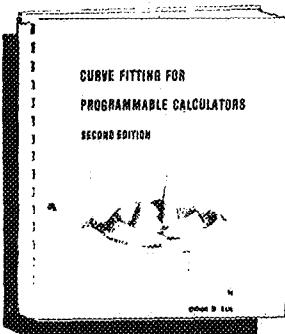
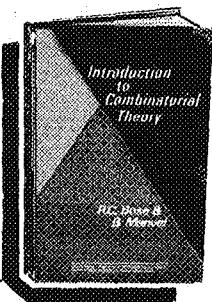
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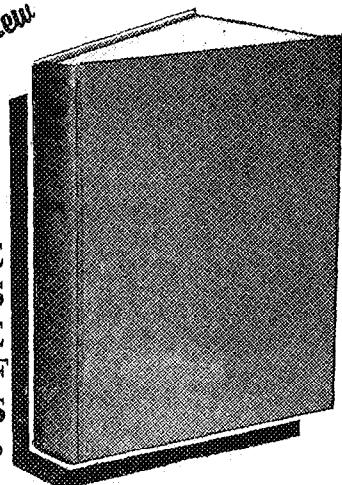
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The equations are designed for any programmable calculator; however, you may need to change register assignments if you have fewer than 100 data registers. HP-41 programs and barcodes are included for half of these curves. In addition some program listings are given for the HP-75 and the TI-59.

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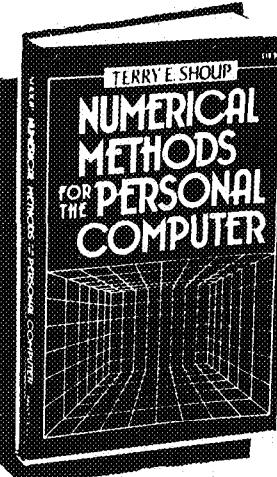
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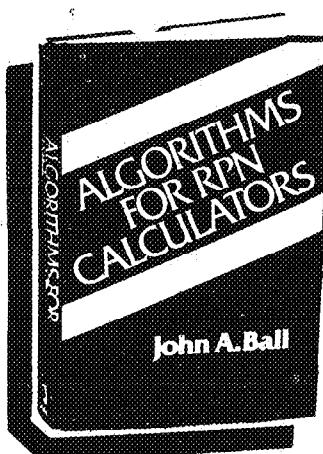


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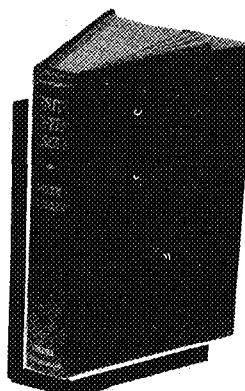
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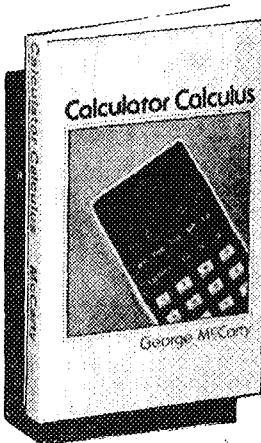
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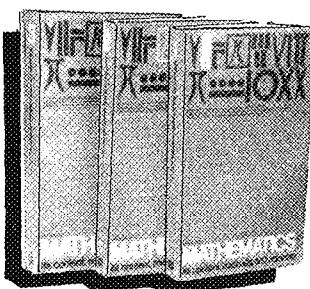
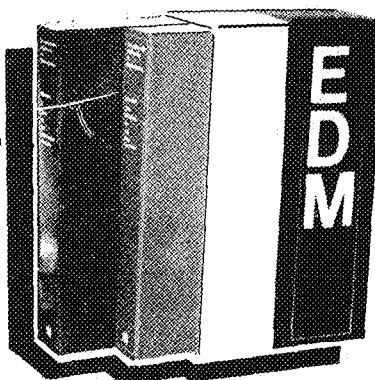
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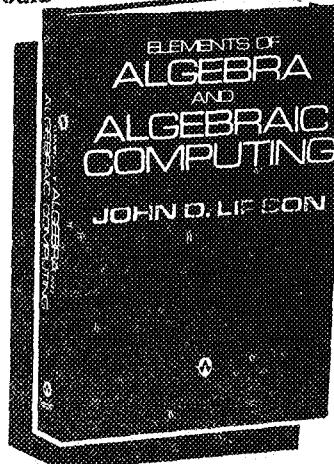


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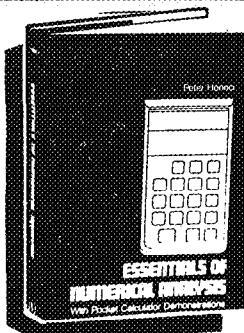
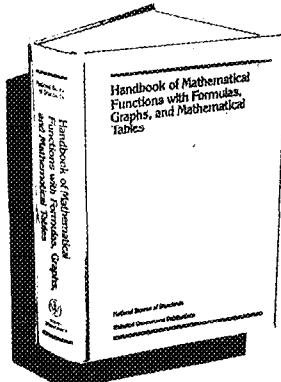
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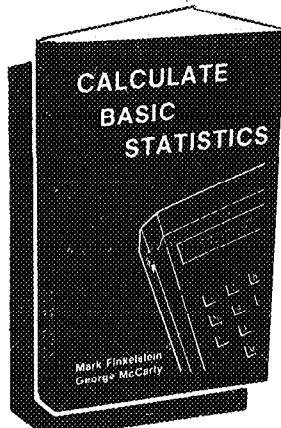
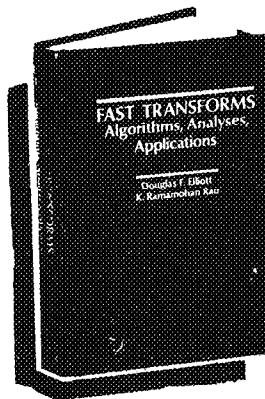
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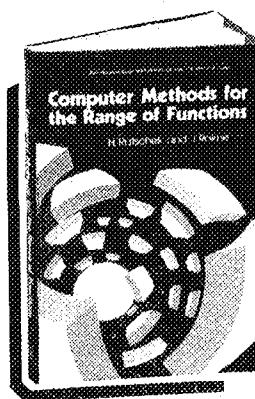
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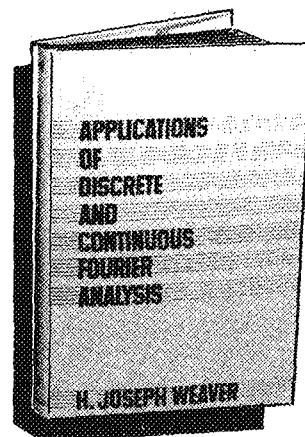
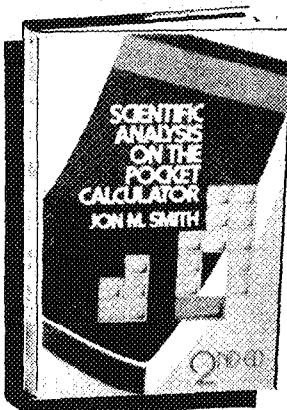
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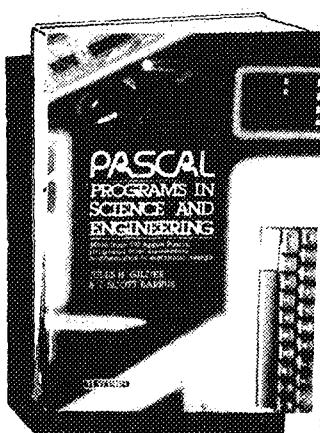
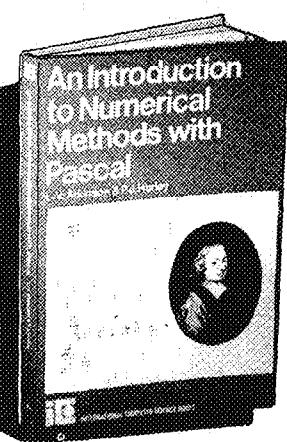
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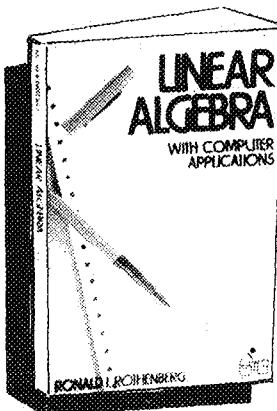
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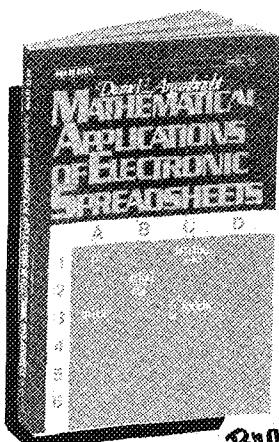
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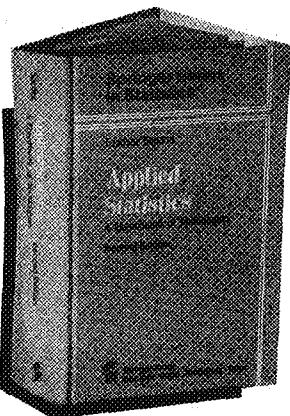
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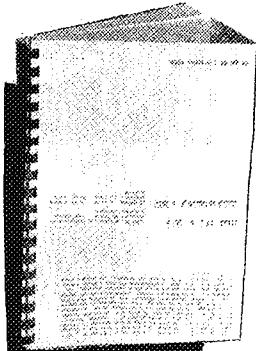
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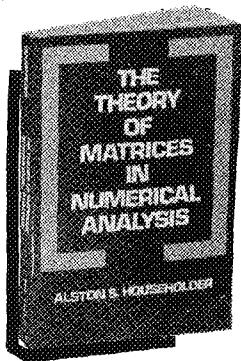
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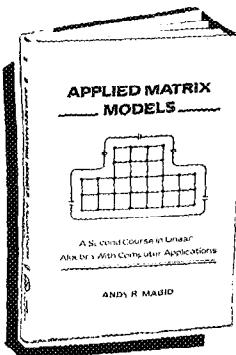
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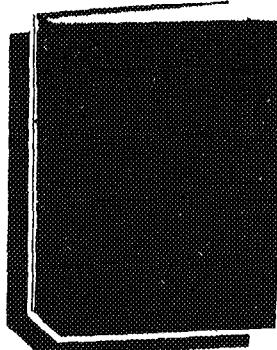
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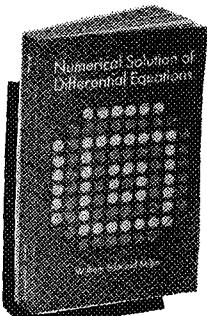
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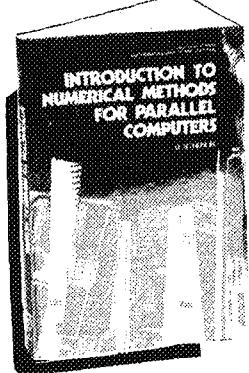
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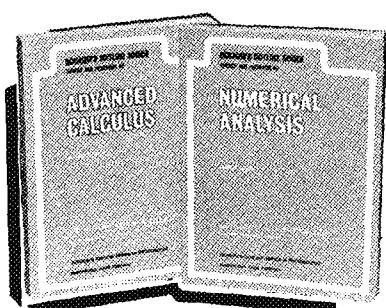


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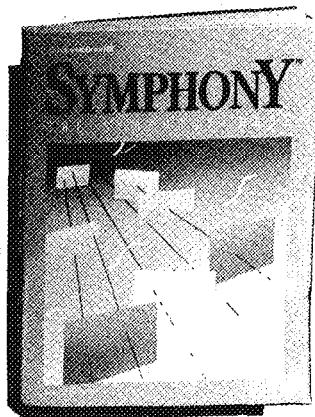
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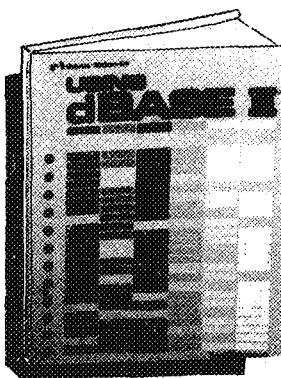
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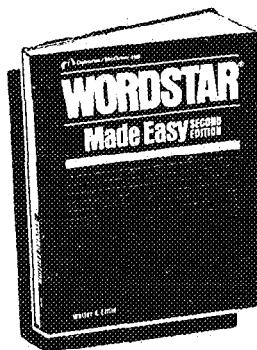


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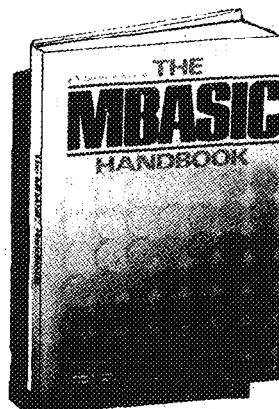
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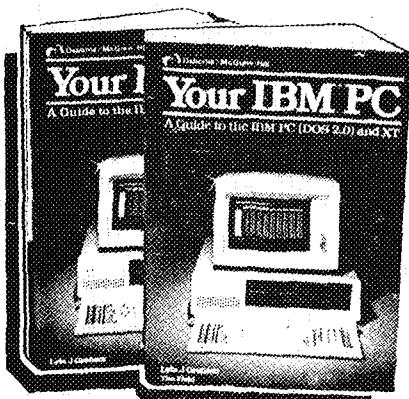
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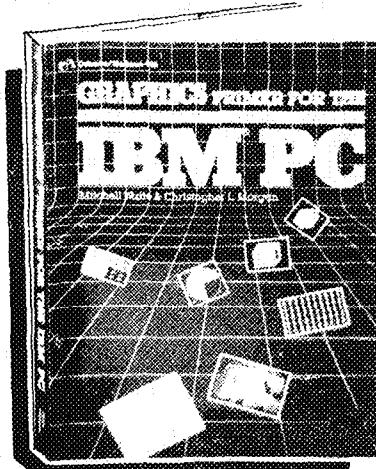
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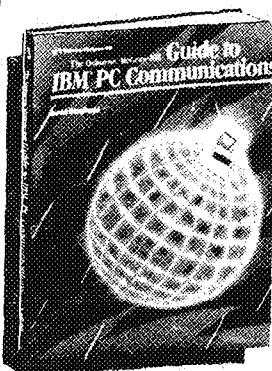
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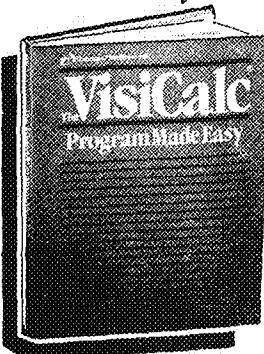
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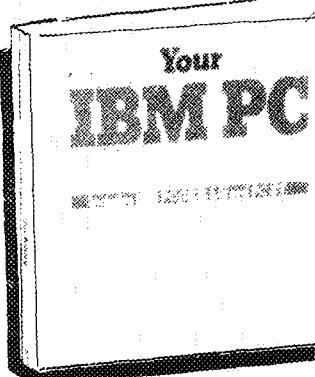


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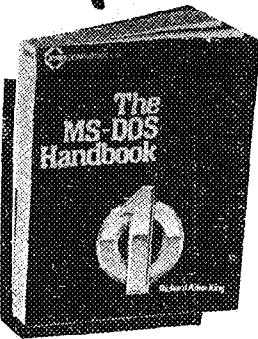
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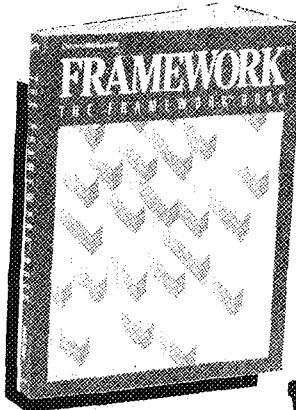
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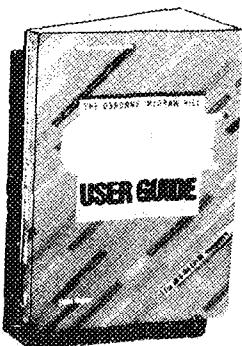
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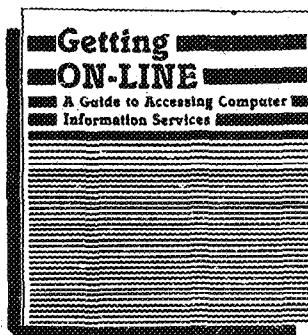
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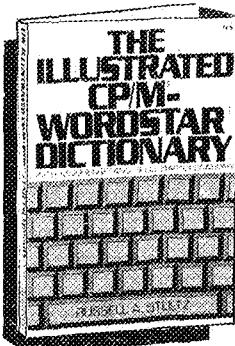
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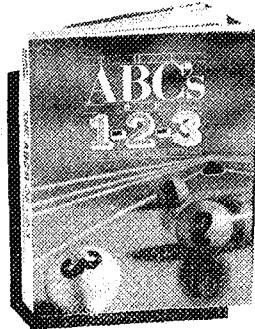
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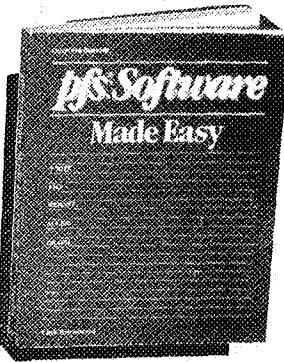


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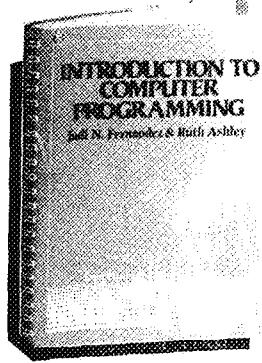
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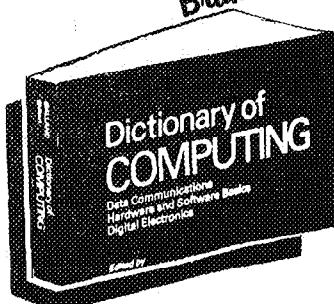


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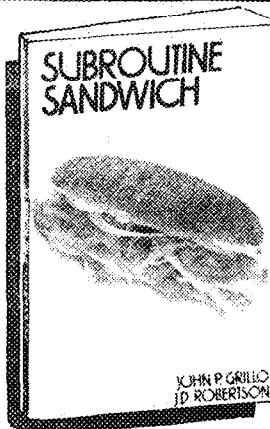
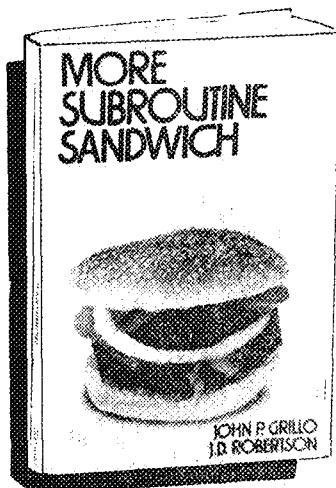
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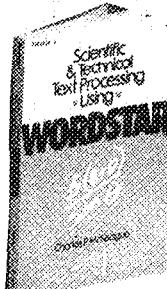
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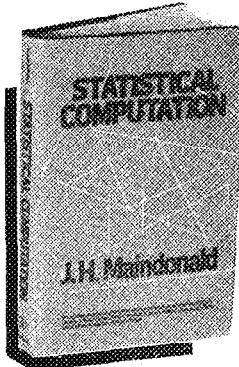
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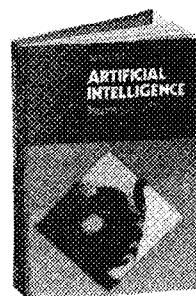
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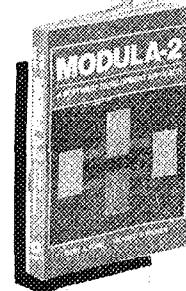


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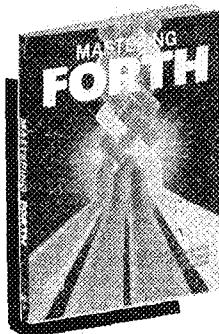
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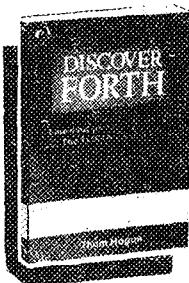
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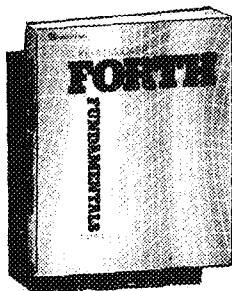
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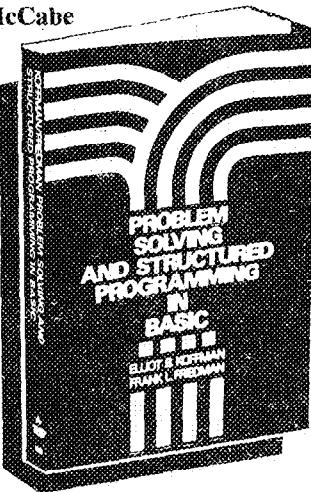
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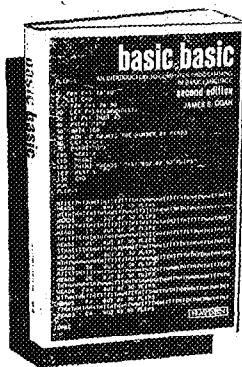
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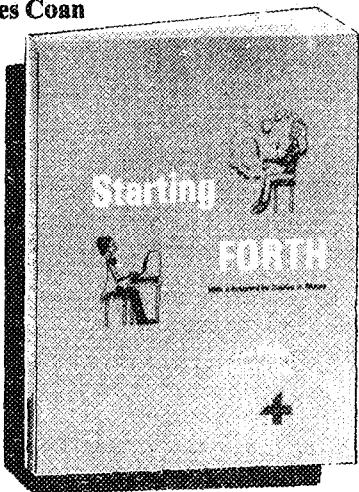
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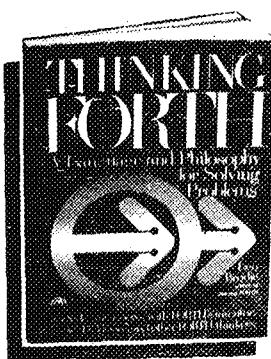
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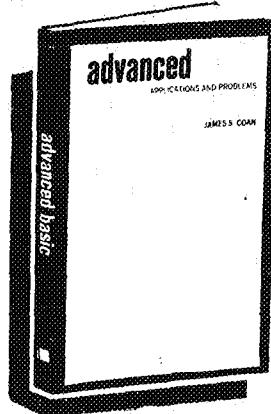
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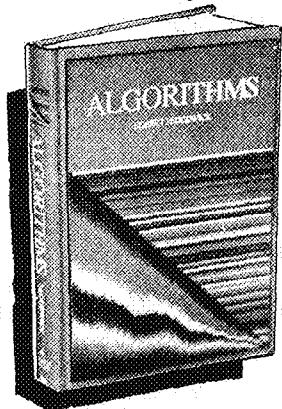
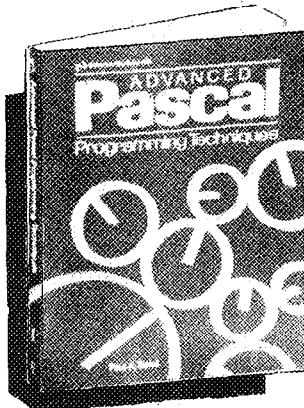
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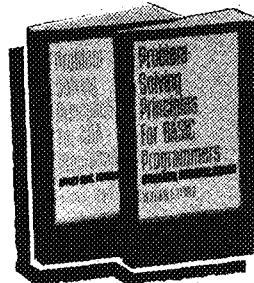


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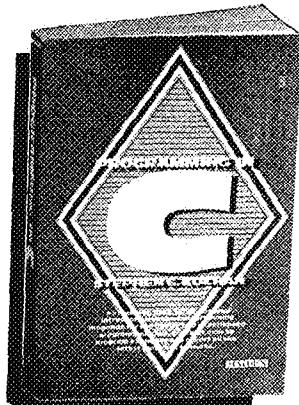


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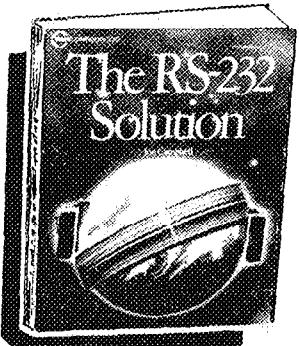


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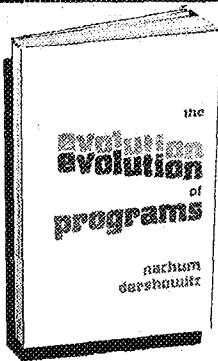
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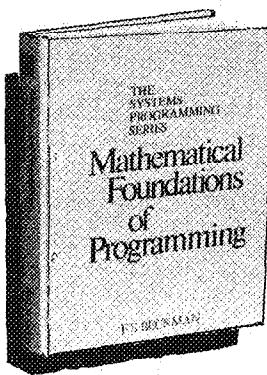
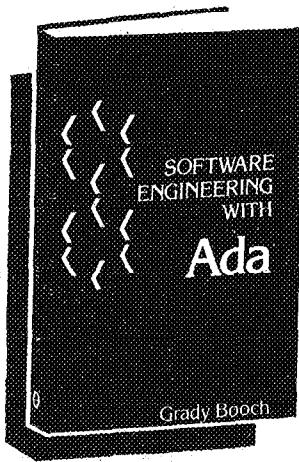


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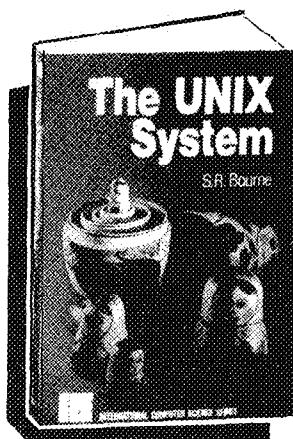


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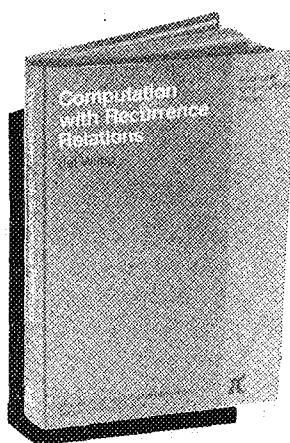
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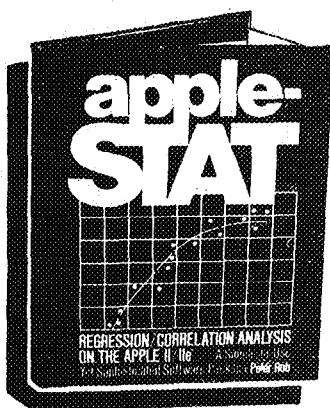
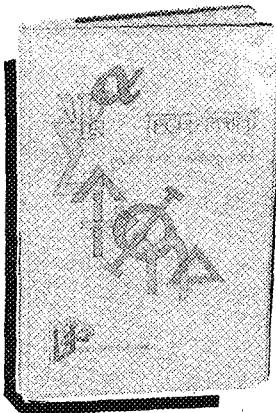
$$\psi + \Delta = \pi$$

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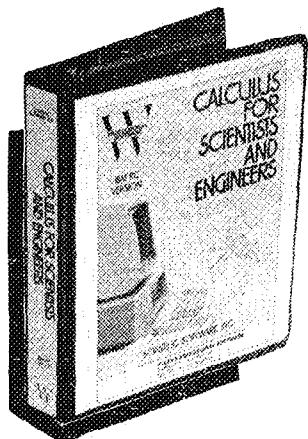
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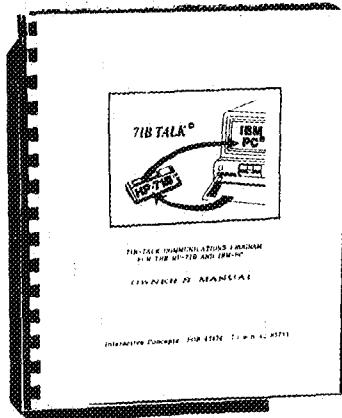
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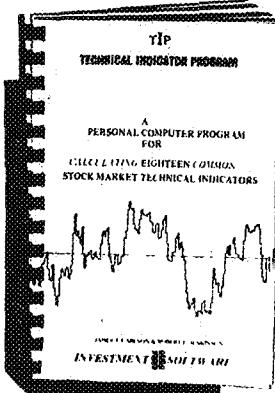


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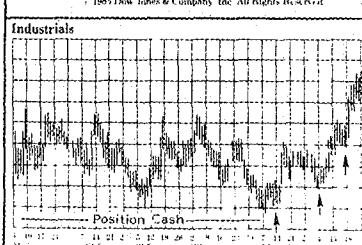
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30-84	1180	94	+ 4.7%	
03-84	1182	42	+ 6.2%	
04-84	1105	07	+ 9.6%	
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06-84	1170	49	+ 8.3%	
07-84	1163	21	+ 9.8%	Buy
10-84	1172	26	+ 7.8%	
11-84	1178	33	+ 6.0%	
12-84	1175	13	+ 7.9%	
13-84	1168	84	+ 9.3%	Buy
14-84	1175	91	+ 6.4%	
17-84	1176	79	+ 9.8%	
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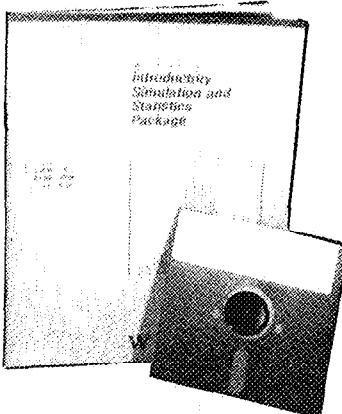
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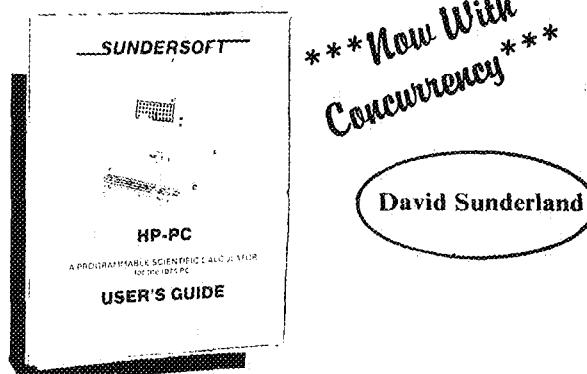
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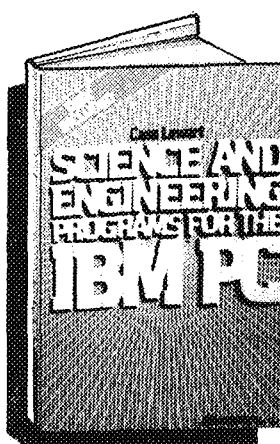
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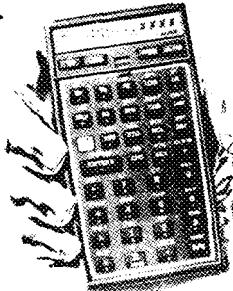
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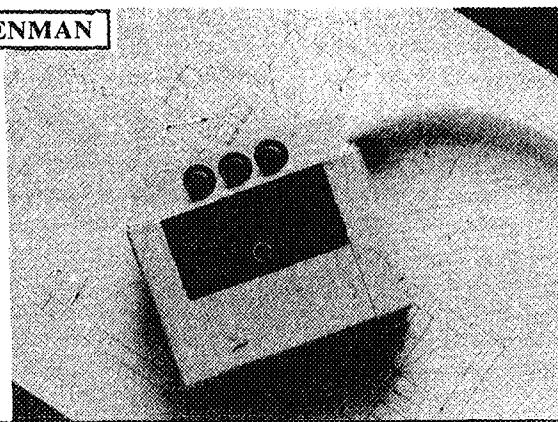
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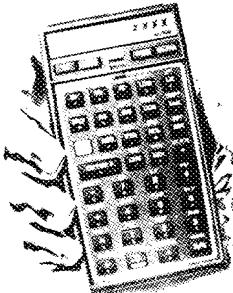
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