

LEARNING MADE EASY



7th Edition

Laptops

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Add Windows 10 security
and privacy features

Squeeze more life from
your laptop's battery

Discover must-have
laptop accessories

Dan Gookin

Author of *Word 2019 For Dummies*
and *PCs For Dummies*



Laptops

7th Edition

by Dan Gookin

for
dummies[®]
A Wiley Brand

Laptops For Dummies® , 7th Edition

Published by: **John Wiley & Sons, Inc.**, 111 River Street, Hoboken, NJ 07030-5774, www.wiley.com

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Published simultaneously in Canada

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Library of Congress Control Number: 2020952025

ISBN: 978-1-119-74027-8; 978-1-119-74028-5 (ebk); 978-1-119-74029-2 (ebk)

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Table of Contents

[Cover](#)

[Title Page](#)

[Copyright](#)

[Introduction](#)

[About This Book](#)

[And Just Who Are You?](#)

[Icons Used in This Book](#)

[Where to Go from Here](#)

[Part 1: This Laptop Thing](#)

[Chapter 1: The Portable Computing Quest](#)

[The History of Portable Computing](#)

[Modern Laptops](#)

[Chapter 2: A Laptop of Your Own](#)

[Do You Need a Laptop?](#)

[Laptop Shopping](#)

[Software for Your Laptop](#)

[Laptop Hardware Buying Decisions](#)

[Service, Support, and Warranty](#)

[The Final Step: Buying Your Laptop](#)

Part 2: Say Hello to Your Laptop

Chapter 3: From Laptop Box to Lap

[Laptop Box 101](#)

[Set Up Your Laptop](#)

[Bye-Bye, Old Laptop](#)

[What to Do Next](#)

Chapter 4: To Turn On a Laptop

[Turn On Your Laptop](#)

[It's Windows!](#)

[What's Next?](#)

Chapter 5: To Turn Off a Laptop

[End Your Laptop Day](#)

[Shutdown Options and Configuration](#)

Chapter 6: Traditional Laptop Tour

[Around Your Laptop](#)

[The Pluggable-Innable Holes](#)

[Look at the Pretty Lights!](#)

[This Isn't Your Daddy's Keyboard](#)

[This Isn't Your Momma's Mouse](#)

Chapter 7: The Tablet PC Tour

[Tablet PC Types](#)

[The Tablet PC Tour](#)

[The Pen Is Mightier than the Mouse](#)

[Touchscreen Text Typing](#)

[Windows Does the Tablet PC](#)

[Special Tablet PC Software](#)

Chapter 8: Your Laptop and Windows

[The Big Windows Picture](#)

[Windows and Your Stuff](#)

[Settings and Options](#)

Part 3: Out and About with Mr. Laptop

Chapter 9: You and Your Laptop

[User Accounts](#)

[The Perfect Display](#)

[Removable Storage](#)

[The Software Side](#)

Chapter 10: Portable Power

[The Battery Will Get a Charge Out of This!](#)

[When the Power Gets Low](#)

Chapter 11: The Printing Chapter

[The Great Printer Hunt](#)

[Something Needs Printing](#)

[A Portable Printer for Your Laptop](#)

Chapter 12: Expanding Your Laptop's Universe

[USB Expansion Options](#)

[The Bluetooth Thing](#)

[The Laptop Becomes a Desktop](#)

Chapter 13: O the Places You'll Go

[In the Bag](#)

[Flying with Mr. Laptop](#)

[Café Computing](#)

[In a Hotel Room](#)

[Mind the Laptop's Temperature](#)

Chapter 14: Presentation Information

[The Show Must Go On](#)

[To Create a Better Slide Show](#)

Chapter 15: A Laptop at Play

[The Laptop Media Player](#)

[Expand the Laptop's Media Universe](#)

[Media Sharing](#)

[Laptop Phone Calls](#)

[eBooks on Your Laptop](#)

Part 4: Laptop Networking

Chapter 16: The Networking Thing

[The Big Networking Picture](#)

[Make the Network Connection](#)

[Break the Network Connection](#)

Chapter 17: Network Life in Laptop Land

[Network Configuration](#)

[Your Laptop, Windows, and the Network](#)

Chapter 18: Your Files from Afar

[Files from Here to There](#)

[Cloud Storage Synchronization](#)

Part 5: Security and Maintenance

Chapter 19: Internet Safety

[Security Central](#)

[Keep Windows Up-to-Date](#)

[The Malware Scourge](#)

[Behind the Firewall](#)

[Safe and Private Browsing](#)

[Location Information](#)

[General Security Settings](#)

Chapter 20: A More Secure Laptop

[The Hot Laptop](#)

[Before Your Laptop Is Stolen](#)

[Protect Your Data with a Strong Password](#)

[Back Up Your Data](#)

[The Laptop Reset](#)

Chapter 21: Laptop Troubleshooting

[The Universal Quick-Fix](#)

[The Windows Troubleshooter](#)

[Restore the System](#)

[Common Problems and Solutions](#)

Chapter 22: Laptop Maintenance and Upgrading

[New Laptop Hardware](#)

[How 'bout Some New Software?](#)

[Laptop Maintenance](#)

Part 6: The Part of Tens

Chapter 23: Ten Battery Tips and Tricks

[Don't Drop the Battery, Get It Wet, Short It, Play Keep-Away with It, Open It, Burn It, or Throw It Away](#)

[Reduce the Screen's Brightness](#)

[Power Down the Hard Drive](#)

[Add RAM to Prevent Virtual Memory Disk Swapping](#)

[Keep Memory Empty](#)

[Guard the Battery's Terminals](#)

[Avoid Extreme Temperatures](#)

[Store the Battery if You Don't Plan to Use It](#)

[Understand That Batteries Drain Over Time!](#)

[Deal with the Low-Battery Warning](#)

Chapter 24: Ten Handy Laptop Accessories

[Laptop Bag or Travel Case](#)

[Spare Battery](#)

[External Storage](#)

[Cooling Pad](#)

[Minivac](#)

[USB Lamp](#)

[Full-Size Keyboard and External Mouse](#)

[Privacy Screen Filter](#)

[ID Card or Return Service Sticker](#)

[Theft-Prevention System](#)

Chapter 25: Ten Things to Throw in Your Laptop Bag

[Power Cord and Brick](#)

[Spare Battery](#)

[Mouse or Digital Pen](#)

[Screen Wipes and Cleaner](#)

[Laptop Lock](#)

[Removable Media](#)

[Headphones](#)

[Office Supplies](#)

[Cables, Cables, Cables](#)

[Not the End of the List](#)

Index

About the Author

Advertisement Page

Connect with Dummies

End User License Agreement

List of Tables

Chapter 6

[TABLE 6-1 Laptop Ports and Their Symbols, Designs, and Colors](#)

[TABLE 6-2 Pretty Laptop Lights](#)

Chapter 7

[TABLE 7-1 Pen and Mouse Actions](#)

Chapter 12

[TABLE 12-1 USB Color Codes](#)

[TABLE 12-2 Typical, Plain, Boring Uses for the USB Port](#)

List of Illustrations

Chapter 1

[FIGURE 1-1: A late-model Osborne.](#)

[FIGURE 1-2: The luggable Compaq Portable.](#)

[FIGURE 1-3: The Radio Shack Model 100.](#)

[FIGURE 1-4: The Compaq III.](#)

[FIGURE 1-5: The Compaq SLT.](#)

[FIGURE 1-6: The NEC UltraLite.](#)

[FIGURE 1-7: A netbook PC, circa 2008.](#)

[FIGURE 1-8: A tablet PC.](#)

Chapter 3

[FIGURE 3-1: Plugging in your laptop.](#)

Chapter 4

[FIGURE 4-1: Likely locations for laptop lid latches.](#)

[FIGURE 4-2: Adjust the lid so that you view the screen at an angle that's just ...](#)

[FIGURE 4-3: The Windows 10 sign-in screen.](#)

[FIGURE 4-4: Finding your User Profile folder.](#)

Chapter 5

[FIGURE 5-1: Power options on the Start menu.](#)

[FIGURE 5-2: Account options on the Start menu.](#)

[FIGURE 5-3: The Power Options menu, featuring the Hibernate command.](#)

[FIGURE 5-4: Setting options for various power buttons and the lid.](#)

Chapter 6

[FIGURE 6-1: Typical laptop keyboard layout.](#)

[FIGURE 6-2: The hidden numeric keypad.](#)

[FIGURE 6-3: Fn keys and function keys.](#)

[FIGURE 6-4: Touchpad varieties.](#)

Chapter 7

[FIGURE 7-1: Various types of tablet PC.](#)

[FIGURE 7-2: A typical tablet PC stylus.](#)

[FIGURE 7-3: The touch keyboard keys.](#)

[FIGURE 7-4: The keyboard selection menu.](#)

[FIGURE 7-5: The pen input pad.](#)

[FIGURE 7-6: Tablet mode.](#)

Chapter 8

[FIGURE 8-1: The Windows desktop.](#)

[FIGURE 8-2: Things to look for on the Start button menu.](#)

[FIGURE 8-3: The Windows taskbar.](#)

[FIGURE 8-4: The Action Center.](#)

[FIGURE 8-5: The This PC window.](#)

[FIGURE 8-6: The User Profile folder.](#)

[FIGURE 8-7: The Settings app.](#)

[FIGURE 8-8: The Control Panel.](#)

[FIGURE 8-9: The Control Panel's Windows Mobility Center window.](#)

Chapter 9

[FIGURE 9-1: Account information in the Settings app.](#)

[FIGURE 9-2: Taking a selfie for your account image.](#)

[FIGURE 9-3: An AutoPlay notification and options.](#)

[FIGURE 9-4: Safely removing a storage device.](#)

Chapter 10

[FIGURE 10-1: Battery notification on the taskbar.](#)

[FIGURE 10-2: Power Options for setting low battery warnings and actions.](#)

Chapter 11

[FIGURE 11-1: The Add Printers & Scanners window.](#)

[FIGURE 11-2: A typical Print dialog box.](#)

Chapter 12

[FIGURE 12-1: The A and B ends of a USB cable.](#)

[FIGURE 12-2: Bluetooth options.](#)

[FIGURE 12-3: The second display projection panel.](#)

Chapter 14

[FIGURE 14-1: The PowerPoint Print screen.](#)

Chapter 15

[FIGURE 15-1: Windows Media Player.](#)

[FIGURE 15-2: The Photos app.](#)

[FIGURE 15-3: Viewing an image in the Photos app.](#)

[FIGURE 15-4: The Groove Music app.](#)

[FIGURE 15-5: Copying music from a CD.](#)

[FIGURE 15-6: Copying images from a smartphone to a laptop.](#)

[FIGURE 15-7: The Camera app.](#)

[FIGURE 15-8: Accessing media on another network PC.](#)

Chapter 16

[FIGURE 16-1: A typical computer network.](#)

[FIGURE 16-2: Selecting a Wi-Fi network.](#)

[FIGURE 16-3: Disconnecting from a wireless network.](#)

Chapter 17

[FIGURE 17-1: The Network & Internet Status screen.](#)

[FIGURE 17-2: The Public or Private setting.](#)

[FIGURE 17-3: Disabling the Wi-Fi radio.](#)

[FIGURE 17-4: The laptop's network name.](#)

[FIGURE 17-5: Computers sharing the same local network.](#)

[FIGURE 17-6: A folder's Advanced Sharing dialog box.](#)

Chapter 18

[FIGURE 18-1: The ugly cable thing.](#)

[FIGURE 18-2: OneDrive folders on a laptop.](#)

[FIGURE 18-3: OneDrive folders on the Internet.](#)

[FIGURE 18-4: Saving a document on OneDrive storage.](#)

Chapter 19

[FIGURE 19-1: The Action Center.](#)

[FIGURE 19-2: The Windows Security Center.](#)

[FIGURE 19-3: Windows Security Center antivirus.](#)

[FIGURE 19-4: Is it okay for this program to access the Internet?](#)

Chapter 20

[FIGURE 20-1: Checking File History settings.](#)

[FIGURE 20-2: Previous versions of a file.](#)

[FIGURE 20-3: The File History window.](#)

Chapter 21

[FIGURE 21-1: The Windows Troubleshooter.](#)

Chapter 24

[FIGURE 24-1: A cool cooling_pad.](#)

Introduction

It's lightweight, high-tech, and portable; the product of years of research, a longtime dream of engineers and scholars, something people all over the world crave. It's wireless. It's about communications. And it will help you become the ultimate mobile computer user. Of course, I'm talking about this book: *Laptops For Dummies*.

This is the seventh edition of *Laptops For Dummies*, updated and spiffed up for the latest in PC laptop hardware and software as well as for Microsoft's latest operating system, Windows 10.

This book covers your portable computer from laptop to lap-bottom, inside and out, on the road or resting at home. The information here runs the gamut, from introducing your laptop to making your first wireless connection at your favorite swanky cybercafé. You'll find this book useful whether you want to go laptop shopping or you consider yourself an old hand.

About This Book

I'm glad that you're still reading this introduction. Most people stop reading after a few paragraphs, or they don't even bother reading the introduction. Consider yourself special.

This book covers laptop computing, from buying and setting up to going on the road, from networking and the Internet to power management and security and everything in between. There's a lot of laptopy advice to be had between this book's yellow covers.

I don't intend for you to read every chapter in sequence. That's because this book is organized as a reference:

Find the tidbit of information, the knowledge nugget you need to know, and then be on your merry way. Everything is cross-referenced, so if you need to look elsewhere in the book for more information, you can easily find it.

In writing this book, I assume that you may know a bit about computers, as most folks do today. But you may be utterly fresh on the idea of *portable* computing. Despite what they tell you, a laptop computer isn't merely a desktop computer with a handle attached. There's more to it, and this book is here to show you the ropes — and to let you take full advantage of what the laptop has to offer.

And Just Who Are You?

Let me jump to the conclusion that you're a human being, not a cleverly disguised owl. Furthermore, either you own a laptop PC or you want to buy one. You may already have a desktop computer, or perhaps you had a laptop a long, long time ago and noticed that things have changed.

I use the word *laptop* to refer to all types of portable computers, from the traditional notebooks to the teensy Ultrabooks. A new category is the 2-in-1 laptop, which is more like a tablet. Those are covered here as well and fall under a general category that I term *tablet PCs*. Any laptop with a touchscreen display is a tablet PC, and I wax eloquently on that topic in [Chapter 7](#).

This book assumes that your laptop is PC-compatible, that it runs the Windows operating system. The current version is Windows 10, which is a great operating system for laptop users. This book doesn't cover older versions

of Windows, nor does it cover using Linux, which is fun but way too nerdy.

This book doesn't describe the basic operations of a computer, Windows, or your software. I've tried to keep the information here specific to the portable aspects of the laptop computer. Beyond that, if you need more information about running your computer, any standard PC or Windows reference works fine.

Icons Used in This Book



TIP The Tip icon notifies you about something cool, handy, or nifty — or something that I highly recommend. For example: “Never make a bar bet with a guy wearing a bowtie.”



REMEMBER Don't forget! When you see this icon, you can be sure that it points out info you should remember or something I said earlier that I'm repeating because it's important and you'll likely forget it anyway. For example: “There is no need to touch the electric fence a second time just to be sure that it's on.”



WARNING Danger! Ah-oogah! Ah-oogah! When you see the Warning icon, pay careful attention to the text. This icon flags something that's bad or that can cause trouble. For example: “The enormous sea monster slithering toward your village won't be using the legal system to settle its grievances.”



TECHNICAL
STUFF

This icon alerts you to something technical, an aside or a trivial tidbit that I simply cannot suppress the urge to share. For example: “My first laptop was a steam-powered, 8-bit 6502 that I breadboarded myself.” Feel free to skip over this book's technical information as you please.

Where to Go from Here

You can start reading this book anywhere. Open the table of contents and pick a spot that amuses you or concerns you or piques your curiosity. Everything is explained in the text, and stuff is carefully cross-referenced so that you don't waste your time reading repeated information.

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related to this book, including the bonus online Cheat Sheet, search for *Laptops For Dummies* from the site's main page.

Enjoy your laptop computer. I'll see you on the road!

Part 1
This Laptop Thing

IN THIS PART ...

Discover how the modern laptop came to be.

Learn how to buy a new laptop that's just right for you.

Chapter 1

The Portable Computing Quest

IN THIS CHAPTER

- » Understanding portable computing
 - » Reviewing laptop history
 - » Discovering modern laptops
 - » Getting to know the subnotebooks
 - » Recognizing the tablet PC
-

One summer day, in his 42nd year, Eugene noted how pleasant the weather was outside. He was inspired to attach wheels to the room-size, vacuum tube computer. Then he and the other three computer scientists, despite their utter lack of muscle tone, pushed the 17-ton beast out of the lab to work outside. It was this crazy notion that sparked the portable computer revolution.

Today the revolution continues. Computers are not only shrinking — they're becoming more portable. Their names represent a pantheon of portable PC potential, including portables, laptops, notebooks, netbooks, convertibles, and tablets. Indeed, portable computing has a rich history, from the first dreams and desires to the multitudinous options now available.

The History of Portable Computing

You can't make something portable by simply bolting a handle to it. Sure, it pleases the marketing folk, who are interested in things that sound good more than things that are practical. For example, you can put a handle on an anvil and call it portable, but that doesn't make it so.

My point is that true portability implies that a gizmo has at least these three characteristics:

- » It's lightweight.
- » It needs no power cord or other wires.
- » It's practical.

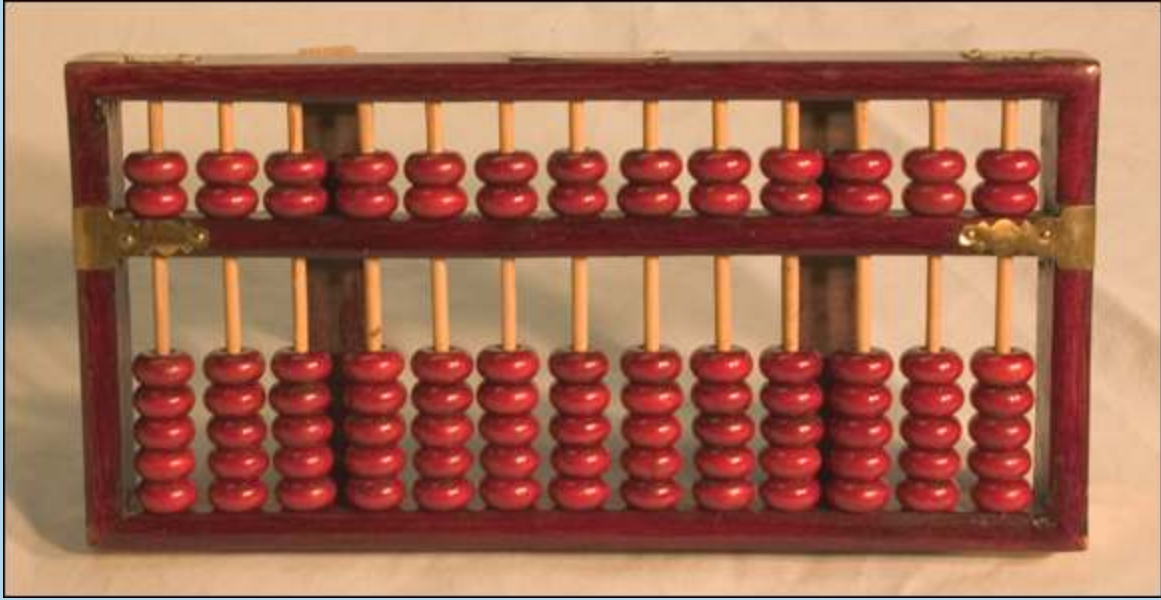
In the history of portable computing, these three things didn't happen all at once, and definitely not in that order.

THE ANCIENT PORTABLE COMPUTER

Long before people marveled over credit-card-size calculators, merchants and goatherds used the world's first portable calculator. Presenting the *abacus*, the device used for centuries to rapidly perform calculations that would otherwise induce painful headaches.

Abacus comes from the Greek word meaning "to swindle you faster." Seriously, the abacus, or counting board, is simple to master. Schoolkids today learn to use the abacus as a diversion from more important studies. In the deft hands of an expert, an abacus can perform all the same operations as a calculator — including square roots and cubic roots.

In his short story *Into the Comet*, science fiction author Arthur C. Clarke wrote of stranded astronauts using many abacuses to plot their voyage home when the spaceship's computer wouldn't work because the Internet was down and their version of Windows couldn't be validated.



The Xerox Dynabook

The desire to take a computer on the road has been around a long, long time. Back around 1970, when Bill Gates was still in school and dreaming of becoming a chiropractor, Xerox PARC developed the Dynabook concept.

Today, you'd recognize the Dynabook as an eBook reader, similar to the Amazon Kindle: The Dynabook was proposed to be the size of a sheet of paper and only a half-inch thick. The top part was a screen; the bottom, a keyboard.

The Dynabook never left the lab, remaining only a dream. Yet the desire to take a computer on the road wouldn't go away. During the three decades after the Dynabook concept fizzled, many attempts were made to create truly portable computers.

The Osborne 1

The first successful portable computer was the Osborne 1, created by computer book author and publisher Adam

Osborne in 1981. Adam believed that in order for personal computers to be successful, they must be portable.

His design for the Osborne 1 portable computer was ambitious for the time: The thing needed to fit under an airline seat — and this was *years* before anyone would even dream of using a computer on an airplane.

The Osborne 1 portable computer, shown in [Figure 1-1](#), was a whopping success. It featured a full-size keyboard and two 5¼-inch floppy drives but only a teensy, credit-card-size monitor. It wasn't battery powered, but it did have a handy carrying handle so that you could lug around the 24-pound beast like an overpacked suitcase. Despite its shortcomings, 10,000 units a month were sold; for \$1,795, you got the computer plus free software.

The loveable luggables

The Osborne computer was barely portable. Face it: The thing was a *suitcase!* Imagine hauling the 24-pound Osborne across Chicago's O'Hare Airport. Worse: Imagine the joy expressed by your fellow seatmates as you try to wedge the thing beneath the seat in front of you.

Computer users yearned for portability. They wanted to believe the advertising images of carefree people toting the Osborne around — people with arms of equal length. But no hipster marketing term could mask the ungainly nature of the Osborne: Portable? Transportable? Wispy? Nope. Credit some wag in the computer press for dreaming up the term *luggable* to describe the new and popular category of portable computers ushered in by the Osborne.



FIGURE 1-1: A late-model Osborne.

Never mind its weight. Never mind that most luggable computers never ventured from the desktops they were first set up on — luggables were the best the computer industry could offer an audience wanting a portable computer.

In the end, the Osborne computer's weight didn't doom it. No, what killed the Osborne was that in the early 1980s the world wanted IBM PC compatibility. The Osborne lacked it. Instead, the upstart Texas company Compaq introduced luggability to the IBM world with the Compaq 1, shown in [Figure 1-2](#).

The Compaq Portable (also called the Compaq 1), introduced in 1983 at \$3,590, proved that you could have your IBM compatibility and haul it on the road with you — as long as a power socket was handy and you had good upper-body strength.

Yet the power cord can stretch only so far. It became painfully obvious that for a computer to be truly portable — as Adam Osborne intended — it would have to lose its power cord.

The Model 100

The first computer that looked even remotely like a modern laptop, and was fully battery powered, was the Radio Shack Model 100, shown in [Figure 1-3](#). It was an overwhelming success.



FIGURE 1-2: The luggable Compaq Portable.

WHAT'S A PC?

PC is an acronym for *politically correct* as well as for *personal computer*. In this book's context, the acronym *PC* stands for *personal computer*.

Originally, personal computers were known as *microcomputers*. This term comes from the microprocessor that powered the devices. It was also a

derisive term, comparing the personal systems with the larger, more intimidating computers of the day.

When IBM entered the microcomputer market in 1982, it called its computer the *IBM PC*. Though it was a brand name, the term *PC* soon referred to any similar computer and eventually to any computer. A computer is basically a PC.

As far as this book is concerned, a PC is a personal computer that runs the Windows operating system. Laptop computers are also PCs, but the term *PC* more often implies a desktop model computer.



FIGURE 1-3: The Radio Shack Model 100.

The Model 100 wasn't designed to be IBM PC compatible, which is surprising considering that PC compatibility was all the rage at the time. Instead, this portable computer offered users a full-size, full-action keyboard plus an eensive, 8-row, 40-column LCD text display. It came with several built-in programs, including a text editor (word processor), a communications program, a scheduler, and an appointment book, plus the

BASIC programming language, which allowed users to create their own programs or obtain BASIC programs written by others.

The Radio Shack Model 100 was all that was needed for portability at the time, which is why the device was so popular.

- » The Model 100 provided the *form factor* for laptops of the future. It was about the size of a hardback novel. It ran for hours on standard AA batteries. And it weighed just 6 pounds.
- » So popular was the Model 100 among journalists that it was common to hear the hollow sound of typing on its keyboard during presidential news conferences in the 1980s.
- » Despite its popularity and versatility, people wanted a version of the Model 100 that would run the same software as the IBM PC. Technology wasn't ready to shrink the PC's hardware to Model 100 size in 1983, but the Model 100 set the bar for what people desired in a laptop's dimensions.

PORTABILITY AND COMMUNICATIONS

Long before the Internet came around, one thing that was deemed necessary on all portable computers was the ability to communicate. A portable computer had two communications duties: First, it had to be able to talk with a desktop computer, to exchange and update files; second, it needed a *modem*, to be able to communicate electronically over phone lines.

Nearly every portable computer, from the Radio Shack Model 100 onward, required a modem, or at least an option for installing one. This was before the Internet era, back when a modem was considered an optional luxury for a desktop computer. Out on the road, away from a desktop at the office, early proto-road-warriors needed that modem in order to keep in touch.