DATABAR

THE MONTHLY BAR CODE SOFTWARE MAGAZINE

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PREMIER ISSUE

More than $75 worth of software inside for OSCAR!

INCLUDES EIGHT GREAT PROGRAMS

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PLUS: The Databar Club. Join now and receive 8 new, high-quality programs each month.

OSCAR WELCOMES YOU TO AN ADVENTURE IN HOME COMPUTING.

The magazine you now hold is the key to using OSCAR, your new Bar Code Reader. It will show you just how easy it is to scan the bar code pages and unlock a whole new world of inexpensive and exciting software. In just minutes—regardless of your age or computer experience—you can start taking advantage of these easy-to-use programs.

This magazine is only a small sample of the great software you get each month when you join the Databar Club. You will receive 12 monthly issues, each with eight great programs in our comprehensive software series. Plus you get an attractive ring binder to store your programs, as well as eligibility to participate in exciting article and program-writing contests.

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FEATURES

SOFTWARE

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WELCOME TO

OSCAR'S WORLD

You've just joined a most elite group. As the owner of OSCAR, the Optical SCAnning Reader, you're now part of a revolution that puts you on the cutting edge of microcomputer technology — bar code data entry.

With OSCAR and this magazine, you can, for the first time, enter software into a computer right off the printed page with simple sweeps of the hand. The benefits to you from this breakthrough are threefold: First, the cost of your computing plummets; second, the number and variety of programs you can affordably use soars; and third, your computer finally begins to blossom into its full potential.

Along with these benefits is a fourth one for the immediate future. OSCAR's design is such that you'll soon be seeing programs that are ever-increasing in sophistication and take less time to load into your computer with OSCAR. You'll also be seeing accessories that allow OSCAR to work with new computers. The inherent design-for-the-future aspect of OSCAR will keep you on that cutting edge of technology for quite some time.

Affordable Computing

Let's examine the first benefit — low-cost computing. The beauty of a magazine or book is its ability to deliver entertaining, useful words and pictures to you for very little money. That's because putting ink on paper is not an expensive process.

With bar codes, home computer software now can be produced as ink on paper, dropping the price of each piece of software to as little as $1.25, which is about the cost of a weekly news magazine or half the cost of a computer or how-to magazine.

And you'll soon learn that what you're now holding in your hand — *Databar Magazine* — is a news magazine, a computer magazine, a how-to magazine and much more — it's also a bundle of software, actually eight separate packages.

Easy-to-Receive Software

Another beauty of the magazine is its ability to squeeze a lot of value into a little package — one small enough to speed through the mail and drop into your mailbox each month. Until OSCAR came along, the methods by

***Databar Magazine* and Databar Software work hand-in-hand to entertain and inform you. *Homeware*™ articles, for instance, give you comprehensive how-to information on family money matters. *Homeware*™ software lets you analyze and act on the information for your *own* financial situation.**

which you obtained computer software were much more tricky and time consuming, as well as more expensive. Even if you had the funds to regularly stock up on new software, the problem of finding the software you need or want in stock has often been maddening. And mail-order software buying has always had many drawbacks.

Now the bother of buying software is wiped away by *Databar Magazine*. Not only do you have easy access to eight programs a month through the mail, you also can return to the store where you bought OSCAR and find a dozen or more new software titles each month, titles not available in *Databar Magazine*.

Easy-to-Use Software

Not only has Databar made software affordable and easy to get, OSCAR's parent company also has reinvented the way software is designed and sold.

Since many computers have the memories to handle different facets of a topic, like personal finance, all at once, much personal finance software is written to use the computer's full memory. But you rarely use every bit of this type of program at once, unless you plan to spend several hours with a program. Instead, you usually choose just the options in the program you're most interested in at the time.

Databar software is designed for the way you use software — one segment at a time. We're introducing you to eight series of software in this issue of *Databar Magazine*. Each month you'll find single installments of eight comprehensive software programs in your issue. Pick and choose which program installments you want to run, when you want to run them. The next month you'll get eight more installments. Databar programs allow you to switch to different topics in your computing sessions or give up the computer after a brief session to someone else in the family.

This quick and easy approach to computing lets more people have more sessions with your computer each week, helping you get the full benefit of the computer. Using OSCAR also speeds the process of acclimating yourself and your family to the rapidly approaching integration of the computer into our daily activities. Practice the Databar way of computing, and at the end of a year, you'll realize that you've explored many facets of many topics. You'll also then have, in a three-ring binder, eight extremely comprehensive programs that you can quickly refer to, one segment at a time.

Along with this friendly approach to computing, Databar gives you the opportunity to use reading to complement and enhance your computing. In this magazine that is delivering your software, you'll find timely, informative and entertaining articles on the topics you're computing with. The two work hand-in-hand. Instead of reading an article and putting it aside, you can now read the article and then delve into its subject with the personal exploration of computing. And our articles won't just be computer articles. We'll have news features on the growing world of OSCAR and how-to articles on many topics of family interest, from managing money to building a deck.

What About OSCAR?

We haven't mentioned OSCAR much up to this point because we

Many Databar programs appeal to everybody in your family. *Funware*™ games, for instance, can involve parents and children, sometimes competitively and sometimes cooperatively. And all games steer clear of violence and destruction.

We'll showcase you and your family's talents in the Databar Club pages. Write articles or essays for the magazine and win prizes. Send us cartoons or cartoon ideas. Or write us with questions about OSCAR or about your home computer. Also, contribute to the Databar Program Search and see your programs in bar code.

wanted to tell you about the software you'll be using OSCAR with. But you're probably wondering just what this little device you've purchased really is.

The best way to introduce OSCAR is to mention the technology that spawned our product. You've seen bar codes in action for several years, most noticeably at the supermarket checkout counter. You may also have begun to notice bar codes on objects as different as railroad box cars, overnight mail envelopes, even on stickers applied to your suitcases on an airport's baggage carousels. Bar codes are popping up all over the place because the technology is so reliable and affordable for the user.

That's why Databar Corporation invented OSCAR: to give you more reliable and affordable software delivery for your home computer. OSCAR's advantages over your other options are easy to describe. Consider:

- Disk drives are expensive and, like cassette players, they rely on mechanical inner workings that can wear out or break without warning. OSCAR is much lower in cost and has no moving parts to wear out.
- Programs printed in letters and numbers in magazines take too much time to type into your computer. If you've ever tried typing, or keyboarding, these programs into your computer you know the time and effort required. Everything must be typed perfectly. If you have a comma out of place or even an extra space inserted anywhere, you usually must spend many minutes staring intently at every line of the program on the screen to spot and correct the errors.
- Other software typically costs 10 to 20 times as much as Databar software. We've already mentioned how low in cost Databar software is, but we didn't mention a fact you're probably painfully aware of: Other software costs from $15 to more than $50 per program if it is on cassette tape or disk.

What About Bar Codes?

Bar codes have been in use in grocery stores since shortly after the Universal Product Code (UPC) was adopted in 1973 in the United States. It is estimated that close to 5,000 supermarkets are using bar code scanners today in the United States and Canada.

Databar's bar codes are not quite the same as other commercial bar codes. Our bar codes are specifically designed for OSCAR so you can scan the lines at different speeds and still get accurate results.

Bar codes rely on the thickness of the black bars and the white spaces in between to carry information. Because computers are binary in nature, so are bar codes. OSCAR reads a given space as a 1 (black ink) or a 0 (white paper). A block of these spaces is assigned to designate a letter or number, and one code — such as 1-0-0-1-1-0 — might equal A to the computer. In addition, each line has built-in checks to make sure OSCAR gives the right code to your computer. If what OSCAR sent doesn't match the check number, you get a friendly buzzing error message and should start scanning the line again.

Let's Begin

With this overview of OSCAR's World, you're ready to dive in and examine the introductory articles and software in this issue. Happy reading and bar code scanning!

Put your computer to work with OSCAR for tasks you never imagined the machine was suited for. Many *Scienceware*™ programs, for instance, will speed and ease your home improvement projects by calculating the materials needed for wallpapering, painting, building, etc. Other programs will help you choose an attorney, write a great love letter, set up a jogging schedule, and more.

INTRODUCING THE

DATABAR CLUB

Join OSCAR's Club

This premier issue of *Databar Magazine* introduces you to quite a few breakthrough concepts, especially OSCAR and the merging of a magazine with home computer software. Now, we've a more familiar concept to announce: the creation of The Databar Club.

Like other clubs, ours will be a group of friends enjoying the pursuit of an activity. Our activity, of course, is the pioneering venture in scanning bar code software to get the most out of a home computer.

Databar's primary purpose is to make sure OSCAR and Databar software best fit your needs. The Club provides the channels of communications that let you tell us how we're doing and let Databar help you get the maximum benefits from OSCAR. You and your family, as charter members of The Databar Club, can join in programs and contests that will influence and shape the future articles and software you'll find in *Databar Magazine*.

HOW DOES THE CLUB WORK?

First and foremost, The Databar Club is your direct link to Databar Corporation. If you have any comments or suggestions about OSCAR or Databar software, or if you're having any difficulties with your OSCAR or your computer, Leslie Anderson, our Club Coordinator, wants to hear from you.

Here's how you can contact Leslie: If you have a tip to share with others about OSCAR or your computer, or if you want Databar's technical experts to answer a question, write Leslie. Indicate your letter is for *Ask OSCAR*. You'll see the first group of tips on page 10.

Leslie will be asking our large staff of experts to help you. Our programmers and other technical people have spent hundreds of hours working with every brand of home computer, including yours. They know the ins and outs of your computer and can help you overcome confusion or discover new tricks for your computer. And, of course, they'll also answer your questions about OSCAR.

Send your tips and questions to: Leslie Anderson, *Ask OSCAR*, *Databar Magazine*, 10202 Crosstown Circle, Eden Prairie, MN 55344.

The Databar Club will also showcase your family's talents as writers, artists and programmers. We're announcing The Databar Program Search in this issue. In the first monthly issue, we'll tell you about how you can enter our contests for the best articles and essays, cartoons and cartoon ideas, and more. Start thinking now about sharing your creative efforts with Databar. Like the Databar Program Search, our contests can be profitable as well as fun. Also, as contributors to Databar Club activities, we'll feature your family in articles and photos.

Club News

The Databar Club pages also serve as your monthly newsletter on the growing world of OSCAR. You'll be reading about other publications and software for OSCAR in the coming months, as well as new developments with national organizations that will be expanding the use of OSCAR to places outside your home, places like schools, health organizations, and so forth.

These news items can give you idea on expanding the use of your ow OSCAR. For instance, you may soo be using OSCAR both at home and your local fitness center to stay on family fitness program.

Other club benefits will include sp cial offers on Databar software, b code T-shirts, OSCAR the Mous items and more, all for charter mer bers only.

In the next issue of Databar Magazine

Look for these articles, programs and more:

■ How do you teach medical self-care to children? We consulted Dr. Ernst Wynder, M.D., president of the American Health Foundation, and others to put together a comprehensive guide to setting your children on a healthwise path at an early age.

■ Do you feel you have writing talent, but face the dreaded writer's block whenever you try to use that talent? A *Wordware*™ feature article and software program will help you overcome this tricky problem.

■ Do you like Adventure-type games? Caves of Mendota will provide a challenging adventure. The *Funware*™ article is an update on the huge strides computer designers are making in artificial intelligence.

■ Have you had a dispute with a business or individual that may put you in small claims court? The *Legalware*™ feature article is a step-by-step approach to getting the most out of small claims court. Use the *Legalware*™ software to practice how you would present your case.

■ Care to feel like a big shot? *Strategy*™ is a Databar software program that simulates the fast-paced world of big business. You're the president of your own company, competing with another company president to make the wiser decisions on expenditures for advertising, labor, materials and so forth. *Strategy*™ is similar to a $15 program for the TI 99/4a called *Market Simulation*. The original concept for this type of simulation was developed at the State University of New York. In a feature article, we'll see how businesses use this and other types of computer simulations today.

OSCAR Works With PCjr

If you're planning to purchase the long-awaited IBM PCjr computer, get ready to use your OSCAR with the new machine. A cable that adapts OSCAR to the PCjr is available at the store where you purchased OSCAR (as of late spring 1984). Also, a special edition of *Databar Magazine* and special versions of retail Databar programs will be available for PCjr owners. Look for announcements of other new computers that will use OSCAR.

Announcing: The Databar Program Search

If you've invested hours of blood-sweat-and-tears in creating your own programs, here's a chance to profit from your efforts by sharing your creations with other readers of this magazine. The Databar Program Search will showcase outstanding programs from club members in *Databar Magazine* by printing the program in bar code for OSCAR. If your high-quality programs are chosen, you'll receive $500 and be featured with an article and photo in the magazine.

What types of programs are we interested in? We will review any program designed for household entertainment and information. You can submit a program on the subjects of our seven topic series, or create a new subject for our *Genware*™, or General Interest, series. What are some possible topics you could use to design your program? You might consider family recreation activities such as camping and traveling by car. What home improvement tasks could be supported with easy Databar programs? Can you create fun and intriguing games for kids and adults? Can you teach readers something in an entertaining way? Put your imagination to work or call on other family members or friends to help you create and draft fun, useful programs. To get ideas for how long or complex to make your program, study the Databar software in this issue.

To join this activity, send for our Program Search submission form (address below). Please don't send programs. We'll be asking you on the submission form to outline your program, write a short article describing the merits of the program and list the operating instructions. Here are two of the questions you'll be answering on the submission form:

1) What are the best qualities of your program?

2) Is your program a game, tutorial, simulation, drill and practice, or a computer-assisted instruction?

For a Program Search submission form, write: The Databar Club Program Search, 10202 Crosstown Circle, Eden Prairie, MN 55344.

ASK OSCAR

Can we help you? And can you help us?

The Databar Club's ASK OSCAR feature will try to answer any questions you may have about OSCAR, his programs or even your own computer equipment. In the process of preparing programs for OSCAR, we've learned quite a bit about the Commodore®, TI®, Atari®, TRS Color Computer® and many others. If we have any knowledge we can share with you, we'll be glad to. Just ask!

We can't promise to print every letter we get, but we'll answer all of them. Send your letters to ASK OSCAR, The Databar Club, 10202 Crosstown Circle, Eden Prairie, MN 55344.

Here are some questions we received recently.

What can I do if I spill something on my bar code pages? —Jim C., West St. Paul, MN

OSCAR says: "There is a thin coat of protective varnish over all the bar code pages, but it won't protect the codes long if liquid is spilled on them. Dab and soak up the spill as quickly as you can, but DON'T RUB. If you smear the bar code ink, OSCAR may have trouble reading it. Let the paper dry completely, then try to read it with OSCAR. Even if the paper is stained, the bar codes may still read. If a bar code page is destroyed, you can buy a replacement copy of the program. Check with the store where you bought OSCAR or contact Customer Service at Databar for help in replacing the program."

My wife complains that all the wires and power supply boxes around my desk are messy. Any ideas? —Alan H., Chicago, IL

OSCAR says: "You bet! Here's a tip even many pros haven't thought of. If you have a desk with drawers, see if you can remove the back of a drawer and anchor power supplies, etc., to the drawer bottom, running the cords to your hardware and power supply out the back. Gather all the excess cord in the drawer except some slack to let you open and close the drawer, securing the coiled cords with rubber bands."

Once I've taken the Health Assessment™ quiz, what do I do with it? —Adrienne T., Houston, TX

OSCAR says: "The joy of all the *Healthware*™ quizzes is their what-if capability. After you have entered all the answers as honestly as you can and have the computer's assessment of your health, then do it again. But this time, decide what bad health habit you have that you are most likely to be successful in changing, and change your answer. The computer will give you the effects of your change. You can use these scenarios with all OSCAR's quizzes to see how specific changes will affect your life."

I just purchased OSCAR and I've noticed the wand reads some lines the first time through and other times it takes me several tries. Is something wrong? — Bradford C., San Diego, CA

OSCAR says: "Probably not, but you have to get used to using OSCAR's wand just as you would any other precision electronic instrument. Keep at it, and pretty soon you'll know from experience exactly how much pressure to put on and how fast to move it. Here are two tips if you keep having trouble. (1) A major cause of reading problems is a dirty wand tip. A referral to the cleaning instructions in your owner's manual might be helpful; (2) adjust the template slightly — sometimes a tiny blemish on the bar code will cause a hangup and even the smallest adjustment will enable OSCAR's wand to read the code correctly."

How can I stop the listing of a BASIC program in my Atari without having to type something like, "List 200,300" to get another part of the program each time? —Mindy R., Wooster, OH

OSCAR says: "Try pressing CONTROL and 1 at the same time. That should stop the program temporarily. Another CONTROL-1 makes the listing resume."

I'm considering one of the new computers for my home, but I don't plan to put my current computer on mothballs. Can I use OSCAR for both? —C. Moxley, Phoenix, AZ

OSCAR says: "You probably can. Simply return to the store where you bought OSCAR and inquire about a cable to connect OSCAR to the second computer. If your computer is one of the new-generation machines, check the Databar Club News pages each month for news of new accessories to adapt OSCAR to new machines, like the IBM PCjr."

Does being right- or left-landed affect my use of OSCAR? —Jerry P., Mt. Pleasant, IA

OSCAR says: "It shouldn't, but individuals vary in terms of how dominant their 'right-handedness' is. If you are having trouble getting bar codes to read consistently, try this: Shift OSCAR's template slightly in the direction opposite of your dominant hand, i.e., to the left if you're right-handed and to the right if you're left-handed. We've found that this seems to help OSCAR work more consistently with some people."

JOIN THE DATABAR CLUB TODAY! GET EXCITING PROGRAMS FOR THE UNBELIEVABLY LOW PRICE OF $1.25 EACH.

That's right. When you join the Databar Club you get 12 issues of Databar Magazine...each featuring eight great programs and costing you only $10.00 per issue. That's an incredible savings of almost 90% per program over suggested retail prices. Each month you get ongoing Databar programs in games ...math and science...health...reading and writing skills...education...legal matters...home finances... and learning to program in BASIC.

Plus Databar Magazine gives you more of what you bought a computer for. You get informative and interesting articles on how to best utilize Databar software programs, as well as feature articles on the same subjects as the software. All articles stand on their own as useful, entertaining material your whole family will enjoy. And, like the articles, the accompanying software is written in the kind of "plain language" that can make the difference between a program that sits on the shelf and one that finds its way into your everyday life. Best of all—the magazine and its software comes right to your door each month.

In addition to the magazine, Databar Club charter members receive an attractive ring binder for their programs, plus eligibility for exciting article and program writing contests with cash prizes.

To find out how you can take advantage of this incredible offer, turn to the last page of this magazine. Then start your adventure with OSCAR today!

DATABAR

DATABAR CORPORATION, 10202 Crosstown Circle, Eden Prairie, MN 55344, **Phone: 612-944-5700**

Among the contributing editors to *Databar Magazine* are (left to right) Dr. Patrick Carnes, Dr. Joseph Daly, Terri Carnes, Dr. Kerry Mark Joels, George Traynor, Arthur Winter and James Polzin.

Photography by Robert Whitman

Introducing Our Contributing Editors

The software and articles in *Databar Magazine* cover a wide variety of subjects: law, health, computers, games, science, writing, education and finance. We set out to gather the best information on these fields. The result is our panel of contributing editors. They're experts in their fields, and they come from all over the country. With their knowledge, as well as their access to the other experts and the latest research, they've helped develop the information you'll find in this and future issues of *Databar Magazine*. Their expertise will help us help you. Here's a more detailed look at the panel . . .

George Traynor

President of Courseware Applications, Inc., a computer-based training firm he founded with partner Thomas Schaefges.

Judith Lateer

Writer and instructional materials developer. Writes documentation for computer systems and educational courses for computer-based training.

"The key to the future is managing information. And the way to do that is through computers, so you need to know a computer language."

Terri Carnes

Writer and vice-president of Workshop Design Associates Inc., a national consulting group on health and education issues.

"People will be able to learn faster with their computers. That's exciting to me. Wordware™ *is going to make an effort to say 'Everyone can write.' The more they write, the easier it is."*

Arthur Winter

Los Angeles, Calif.; an engineering consultant, teacher and holder of numerous patents. President of AJ Winter Corp.

"The Scienceware™ *series will be of value to homeowners who don't necessarily know math and science, giving them practical applications of these topics. Math and science students also will enjoy the series."*

Dr. Kerry Mark Joels

Alexandria, Va.; consultant, author and lecturer on computers and aerospace technology. Former college instructor and contractor to NASA.

Jo Ann Joels

Has worked as a computer programmer, program analyst and consultant on micro-computer software development. Currently works for an educational software development company.

"The look in a student's eyes when he finally grasps an idea is something you'll never forget. We hope Classware™ *will produce many such moments in your home."*

Dr. Patrick Carnes

Internationally known behavioral scientist, author and lecturer. Director of Family Renewal Center at a Minneapolis hospital. Project consultant for U.S. Air Force Family Matters Office.

"What Healthware™ *does is to make your home computer an "in-house" consultant on health. It's almost like having a concerned health professional right in your living room."*

Joseph L. Daly, J.D.

Professor of law, chairman of the Center for Community Legal Education at Hamline University, St. Paul, Minn., and a book and magazine author. Active in law-related community education activities.

"If we're going to continue to live in a free society . . . we need to have an educated population — educated in the sense of how they can shape their own destiny through law."

James Polzin

President of a financial planning and investment management firm. Writer and lecturer on financial planning.

"What we're trying to do with Homeware™ *is to make financial planning as simple as possible to allow any individual to develop, implement and monitor their own financial plan, giving people more control over their own financial health."*

Meet Databar's Specialists

Our prestigious group of contributing editors is supported by a large, highly skilled staff of professionals at Databar Corporation. We thought a glimpse of some of these people would acquaint you better with the people behind OSCAR.

Before going into specifics, we want to emphasize that the work these specialists and others do at Databar Corporation is designed to make sure your OSCAR has ever-increasing uses to help you get the most out of your home computer. Also, they're working to make sure Databar software provides the kind of useful, entertaining programs everyone in your family is drawn to. All of these Databar people are anxious to provide programs you want. So let us know what you need or want by communicating through The Databar Club (see page 7).

The Path To Databar Software

The lively, entertaining feature articles you'll read in each issue of *Databar Magazine* come directly from our contributing editors and their individual panels of experts. Much of the Databar software you'll find in this magazine and for sale at retail stores also originates with our contributing editors. The software, however, doesn't come to fruition until the software development wizards at Databar take over. Our contributing editors sketch out the objectives for many of the software programs and suggest some of the "how-to's" for implementing their ideas.

The editors' first contact with Data-

The technical support staff at Databar has devoted many hours to making sure OSCAR is reliable, long-lasting and easy to use.

Databar's Series Supervisors bring varied skills to their work. Their role is to research proposed software topics and determine how suitable these ideas are for Databar programs.

bar is with the Series Supervisors assigned to them. Databar Series Supervisors take the submitted software ideas, or develop their own, and conduct an initial research project on the topic. Our Series Supervisors have diverse backgrounds; some were teachers with advanced degrees in curriculum development before joining Databar. And our superb game designer and editor of the *Funware*™ articles is a professional jazz musician and a former state chess champion who does some amazing things with the games you'll be seeing.

When the Series Supervisors have mapped out the strategies for developing a program, they turn the project over to the Databar programmers. Databar programmers are charged with the task of compressing as much data as possible into a program and adding interest to the programs with graphics, humor and other devices. Databar programmers also are experts at programming the various computers OSCAR is designed to work with and have developed shortcuts and unique techniques for the different brands of computers. All share the trait of having extensive experience in programming home computers. Many of them started like you, with the purchase of a home computer and a few sessions with a programming textbook.

The OSCAR Side of Databar

While our software development personnel are busy developing useful, entertaining software for OSCAR and your home computer, our research and development staff are engaged in the development of improved versions of our unique bar code scanner.

Our technical support people already have spent many months in developing and testing OSCAR, making it reliable, long-lasting and easy for everybody to use. This group also has devoted hundreds of hours to making sure OSCAR will be a reliable, low-cost product.

Databar Corporation's manufacturing is based in Montevideo, Minn., where a large group of skilled manufacturing employees is busily building thousands of OSCARs to expand the world of bar code scanning you're now a part of.

Compiling as much useful information as possible into a program, and often adding a little humor, is the goal of the Databar programmers.

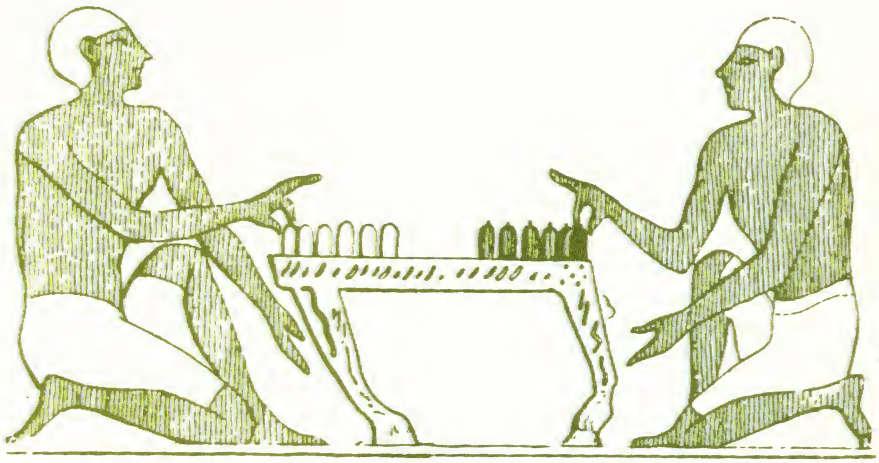
Computer Gaming

"Games," Ben Franklin once said, "lubricate the mind and the body." Throughout the ages, games have entertained us and taught us. Whether we're setting up the checkerboard or watching nations gather for the Olympics, games teach us valuable lessons: physical and mental skill, fair competition, coordination and teamwork.

Good computer games are no different. Your computer can be the key

to endless challenges. And with OSCAR and *Funware*™ programs, computer gaming goes beyond the mind-numbing blasting of space creatures and destruction of odd-looking characters who inhabit the world of video arcades. OSCAR and *Funware*™ will introduce you to a new world — one filled with the clever tactics of ancient Egyptians, mathematical logic, intricate mazes, even secret codes. They will be games that require quick wits and logical thinking. Games that distinguish between the "button-pushers" and the true "gamers."

FUNWARE™



The Bettmann Archive

THE GAMES PEOPLE – AND COMPUTERS – PLAY

Step inside your neighborhood video arcade or watch the kids hunched over home arcade games. The fascination on the faces is striking. Also striking, and somewhat unsettling, is the fact that most of these children are playing destroy-or-be-destroyed games. The victims may be spaceships, energy chompers or gophers, but always something or somebody gets obliterated.

But games can do more and be more, for young and old alike. Board games such as checkers help develop logic, planning skills and foresight. The popular game Concentration helps develop good memory skills. Fantasy games exercise our imaginations. Co-operative, non-competitive games help us learn teamwork. Monopoly teaches advanced economic principles, while Scrabble sharpens language skills. And games are not just child's play. One eminent psychologist said, "We don't stop playing because we grow old. We grow old because we stop playing."

A Little History

Games in one form or another have been around since long before recorded history. The earliest games used sticks, stones and other natural objects. As people learned to make and use different tools and objects, their games changed.

One of the most significant inventions in the history of games was the ball. The Egyptians, Greeks, Persians and Romans all had games in which some type of ball was used. The Romans even had an area in their public baths set aside for playing ball.

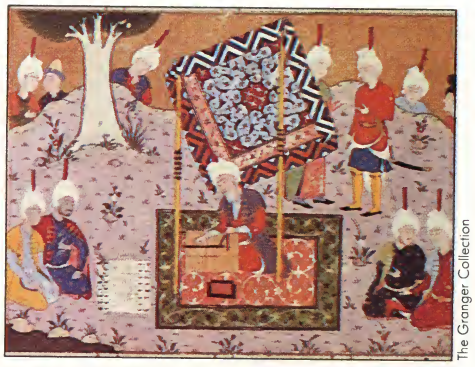
As technology changed, scores of new ball games emerged. No one knows who invented the rubber ball and the air-filled ball, but their impact on the nature of ball games certainly has been profound. Even in this century, changes in the design and composition of footballs and golf balls have let players improve and refine their performances.

Playing areas also have had a tremendous impact on the development of games. The modern game of tennis had its origins in the courtyards and castles of France, where clever courtiers used the castle walls as backboards and boundaries.

Board and card games have origins stretching back thousands of years. A version of backgammon, for example, was played in Egypt about 3000 B.C. The Greeks and Romans invented a version closer to the modern game. And the board for backgammon was developed in the Mediterranean in the 10th century, though it was not until

1743 that Fred Hoyle first chronicled its rules.

Chess probably originated in India, long before recorded history and found its way to the West about the 7th century. The shapes and moves of the original pieces reflect Indian culture: elephants (the bishop), chariots (rooks), horses (knights) and foot soldiers (pawns). Countless refinements and rule changes have produced today's game, which has existed in its present form for well over a century.



The Granger Collection

One version of backgammon was invented about 3000 B.C. Above is a 16th-century artist's depiction of the game.

Computers Enter The Game World

Due to the nature of computers (and computer programmers), computers played games from the start.

Artificial and imaginary playing surfaces have long been a part of many games. Small children routinely transform their play space into fantasy worlds — from hospitals to space stations. The computer opens up fantastic new playing surfaces. Computers can imitate and enhance familiar playing surfaces like a baseball diamond or checkerboard, or they can display amazing new "playing areas" that add new dimensions to the worlds on the screen.

Just a few years ago, the age of technology touched backgammon when the world champion was beaten by a computer. But chess is probably the game at the focus of most serious computer work. Despite preliminary work started in the late 1940s, chess-playing computers weren't available until the 1960s. By the 1970s computer chess ability was becoming ever-more impressive. In 1968 British master David Levy bet over $2,000 that no computer would be able to beat him within 10 years. Levy won the bet in 1978, in Toronto, defeating a program called Chess 4.7. But Levy nearly had his wallet lightened by the computer's skill. By move 14 of the first game, Chess 4.7 had him in a losing position; he was fortunate to end the game in a draw. He did lose Game 4, but won the match with a 3½ — 1½ score. He won his bet, but ended any notion that computers can't beat good players.

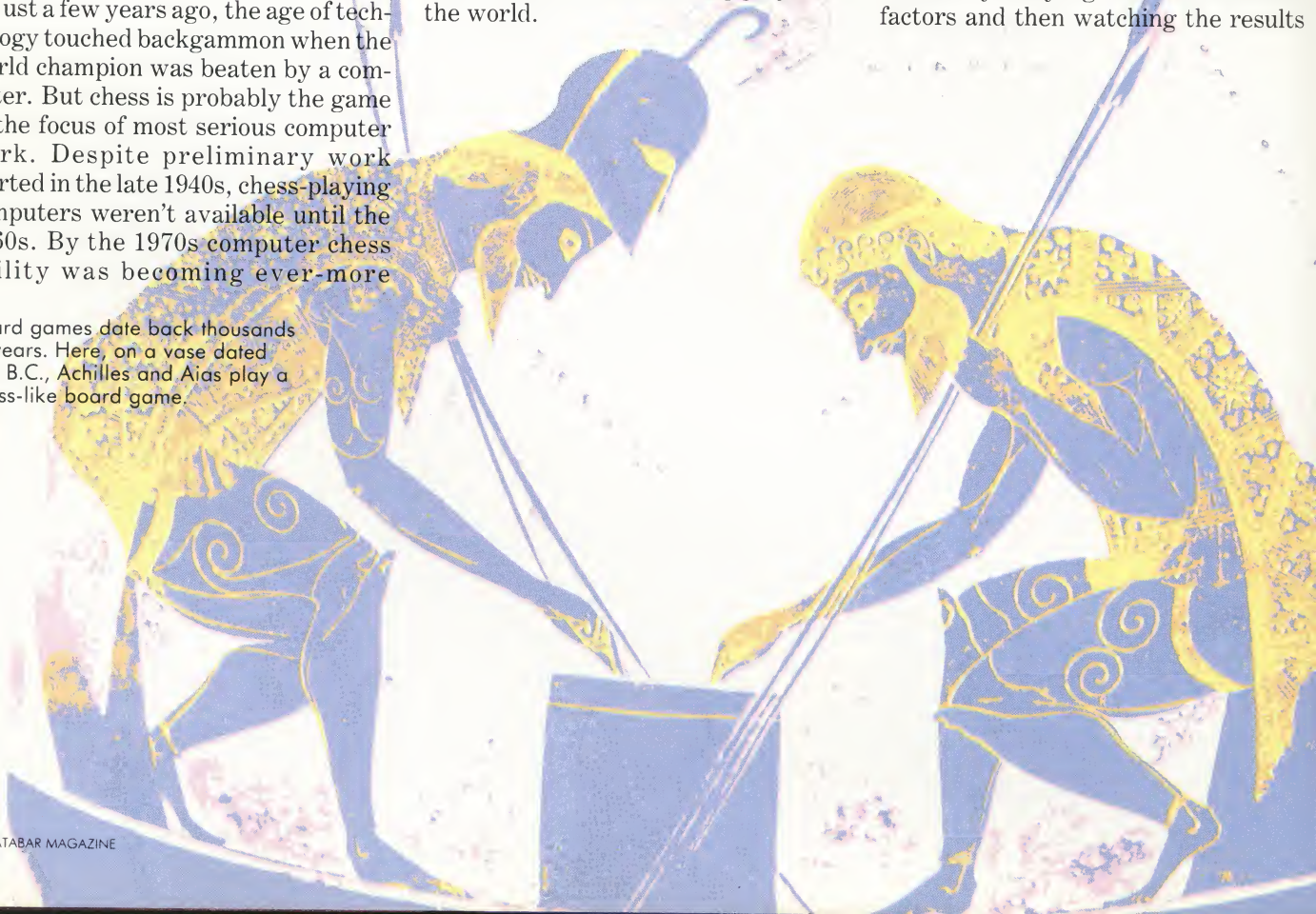
Today the best computer programs can be beaten only by the top players in the world.

Chess is also a way to study what is called artificial intelligence. The game is complex enough to have almost an infinite possibility of moves. It's impossible even for the largest, fastest computers to analyze all possible moves, and there isn't enough memory available to program all possible chess moves into memory, so the computer must imitate some of the same decision-making processes that humans go through. Writing computer programs that play chess well has enabled us to learn more about how the human brain works.

More Serious Games

Games of a more serious nature, known as simulations, are a major focus of today's computer research. Forecasting weather is an example of a simulation with far-reaching impact on the world. Incredible quantities of data must be analyzed to accurately predict future weather patterns. Computers are perfect for this type of "game."

Economic simulations also are an ever-more-important planning tool in the hands of economic planners. Economists attempt to predict future trends by varying certain economic factors and then watching the results



Board games date back thousands of years. Here, on a vase dated 540 B.C., Achilles and Aias play a chess-like board game.

Fun vs. Violence

The declining participation in video arcade games points up something that many experts have been expecting all along: that games with an emphasis on violence not only aren't doing anything positive for young people, but they aren't even very much fun.

Once the novelty of zap-pow-bam laser fights with swarming aliens wore off, attendance at the video game parlors started declining. In 1983, attendance was down to nearly half of what it was the year before. Authorities on child psychology have long told us that a game that lets children use their imagination and intellectual skills is one that they will play and keep on playing. And it will help develop their mental faculties, as well.

That's the basis of *Databar Magazine's Funware*™ games — competitive fun without the overt and implied violence that makes so many video games a source of worry to parents and educators. Games in *Databar Magazine* are designed to provide a maximum of fun and the development of mental skills.

Take *OSCAR's Match*™, for example. The game puts a premium on the ability to retain the location of numbers for a short period of time. In the process of having a fun game children — and adults, too — can train their minds to retain information more effectively. To enjoy *OSCAR's Match*™, turn to page 51.

in the highly-complex model the computer "builds."

The movie *Wargames* was based on the idea of a slightly confused Defense Department computer attempting to launch nuclear missiles while playing a game called, "Global Thermonuclear War." While the military establishment has poo-pooed the possibility of such an event happening, there is no doubt that computer simulations play a big part in training military officers in all the services.

If you've been using your computer to play games, you know how it can sharpen your wits and your hand-eye coordination. Computer games can be a healthy option for children. Most children's play imitates adult activities — using dolls and trucks, for example. What better way for children to grow into our rapidly expanding information society than with computer games? Even the other major focus of children's play — fantasy — is enhanced with computer games. Players can imagine they are space explorers, or even ancient knights flying through space or winding around a dense, dark forest.

Games are an excellent way to get acquainted with computing. With other types of software you're more concerned about the results — the personal facts and figures — than how the computer works. But games pique your curiosity to find out where the fun comes from.

Look for games that, like OSCAR's *Funware*™, steer clear of destruction. You can be competitive, but pit yourself against the computer or another player to accomplish a goal.

Some games, especially role-playing fantasy games, encourage cooperation. By taking turns with a partner in these games, you'll both learn a winning solution. You'll collect objects, build up points and uncover secrets held in the programmed fantasy world.

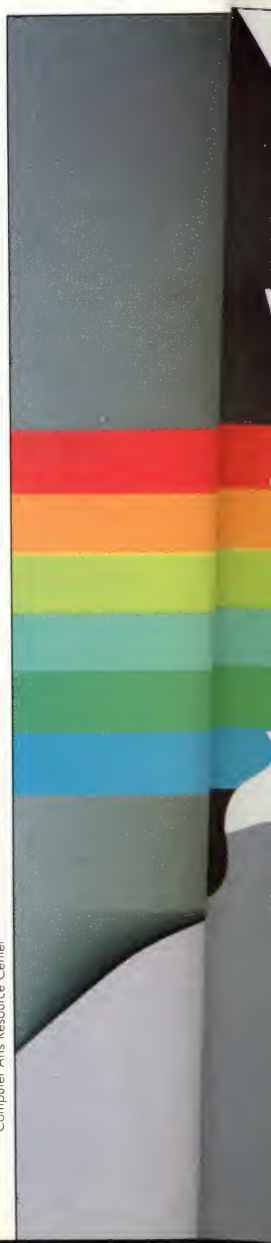
Climbing Slippery Hills

Up until now, the trouble with trying to do your own financial planning has been the tedium of the task. You gathered a good supply of sharp pencils — and even more erasers — fired up the pocket calculator, stole a quick glance at the kids' algebra books to refresh your memory about compounding simple interest and locked yourself away for a marathon frustration session that often produced more frustration than results.

Homeware™ and OSCAR are going to change all that. Our articles and software condense hours of laborious hand calculations into minutes and give you straight answers to the tough questions you're asking about what the future holds in store for your pocketbook.

With *Homeware*™ you ease into making your home computer work as a smart financial planner. For instance, one upcoming program will let you see in minutes the tax advantages an IRA (Individual Retirement Account) will give you, not some hypothetical family. It will even allow you — with just the press of a few keys on your home computer — to compare one kind of IRA with other kinds to find the best one for your family.

Future *Homeware*™ programs will let you figure out your net worth easily, prepare and plan your income taxes, and figure out your return on an investment. Most importantly, *Homeware*™ will help take the drudgery out of financial planning and make it into a challenging and rewarding family project.



Computer Arts Resource Center

the Financial

FINANCIAL PLANNING BY COMPUTER: NOT FOR BUSINESS ONLY

The world — especially the financial world — is changing so rapidly it's hard to keep up with our meager personal chunks of the whole money pie. The economy spurts and sputters. The financial markets flood the media with new financial product ads. And all the while, we see our family's financial requirements growing more complex.

These are troubling times. Will you have enough money to retire in the style you'd like to? Is there enough in the bank to put your children through college? Would a medical emergency wipe you out?

Families whose financial futures look rosy are those flexible enough today to plan their financial futures, to be ready to meet emergencies that may happen and to be prepared to take advantage of some exciting investment opportunities rising to the surface in the churning economy.

Financial planning doesn't need to be tough. It's nothing more than an

organized, systematic approach to steering money matters toward reachable goals. And if you utilize a home computer program, such as *Homeware,*™ it is also quick and simple.

The real advantage to computer financial planning is that it gives a speedy answer to questions like, "I wonder what would happen if . . ."

What happens to your tax status if you make gifts to your children today for their college educations? What's your take-home pay if you earn $100 more each month? What if your favorite stock isn't appreciating as fast as the cost of living? What is your tax situation if you sell it? What if you take your money out of a low-interest passbook account at the bank and put it in a money market account? What happens if you become disabled?

Your computer can answer these questions almost as fast as you can ask them.

Financial Planning Steps

Here is the path OSCAR and *Homeware*™ will set you on.

■ Discovery. You need to delve into the truth of your own financial situation. Start by collecting and organizing your family's financial records: checkbook, cancelled checks, paycheck stubs, income tax returns (both state and federal), credit contracts, insurance policies and savings and investment records, etc. You need to know where you are starting from if you want to reach the goals you set. The *Financial Quiz*™ on page 57 will help you get started on this step.

■ Exploring the future. In this step you will take your family's current financial needs in detail and project them into the future. By doing this, you and your family will be able to develop realistic financial goals, as well as steer clear of potential problems. Questions you'll probe include, "Does our family need to establish a college fund? How much savings will I need when I retire? What happens to my family if I die?"

■ Learning. There are scores of investments available in today's financial community. Knowing which will pay off best or quickest takes a little digging, because there are advantages and disadvantages to each. Which is best for you depends strictly on your personal situation. You'll have to consider such questions as, "What type of investor am I? What type of investments do I prefer?" Also, "How do outside economic variables affect the investments I choose?"

■ Tracking and Updating. When you set up your financial plan on your computer, *Homeware*™ will help you track your success. As your family's financial needs change, you'll be ready to update the plan. You'll answer such questions as, "Are the investments I started out with paying off? Would I be better off selling them? How is the economy affecting my current investments? Do I need to revise my goals to be more realistic?"

What About the Future?

In the next ten years or so, your family has the chance to get in on the ground floor in several areas of vital importance to their financial health.

Your money is actively being sought by a number of large, evolving financial institutions. As a result new types of investments will be popping up in the future. The smart investor will be ready to take advantage of these new investments as they become available.

During the 1960s, financial markets grew steadily. But today, the only constant is constant change. Every day, by doing nothing more complicated than pressing a key or two on a computer, billions of dollars flow from one investment into another. With the help of computers, important investment decisions that once required days of lengthy analysis are made now in minutes or hours.

The fluctuating financial markets create profitable investment opportunities (with a high degree of risk

Robert Whitman

sometimes) for you — if you're knowledgeable and alert. But the family that doesn't budget enough time to monitor its investments closely risks big money. You can reduce the time you need to spend by using your computer to both keep track of, and predict, investments and savings.

Taxes and Inflation

You can't pick up a newspaper today without reading about everybody's concern over the federal deficit (the difference between the tax money Uncle Sam collects and the money he spends).

Federal finances exert a sharp influence over our financial well being. Our tax money is helping buoy the seemingly shaky national economy. To reduce the deficit, the government has three likely options it may choose:

- Cut spending, tough to do when there's an election at stake; our leaders don't want to take funds away from voters.
- Print more money. The result usually is increasing inflation.
- Raise taxes, another tough action in an election year.

Whatever option the government chooses, planning ahead for a changing economy is still the best advice for your family.

New Careers

With affordable computer technology moving into our family rooms, some old ways of doing things are vanishing. Soon, a lot of banking will be done over the telephone by computer.

The computer revolution may also change your work situation. For one thing, jobs related to computers are burgeoning — information processing, computer technology and human services. Today, "computer literacy" is a major goal in many of our school systems, and it's fast becoming a basic requirement for getting a job.

With your home computer — and OSCAR — you can be ready for the changing financial picture and make the right decision at the right time.

Steve Umland

How Good is Your Financial Health?

Assessing your financial health can be a lot like the weather, with everyone talking about it and no one doing anything constructive. This month's *Homeware*™ program launches the *Homeware*™ series by quizzing you on the state of your financial health.

You may have taken such quizzes before, perhaps in newspapers or magazines. But this one is a little different. It not only prompts you for the answer, but gives the answer a carefully calculated "weighting" so that it has a realistic effect on the final result.

And, instead of giving you some artificial mathematical score, OSCAR's *Homeware*™ program tells you bluntly what kind of shape you are in. In future issues of *Databar Magazine*, the *Homeware*™ programs will help show you how to improve your personal financial picture.

Now, to see just what kind of shape you are in, turn on your computer, get OSCAR ready and turn to page 57.

To the Head of the Class

Last year more than 100,000 computers were used in classrooms around the country. By 1985 that number may rise to 300,000, and by 1990, one out of every four school children will have access to a computer.

The attraction, speculate experts, may well be that children feel they have a lot of control over the machine and therefore have control over their abilities to learn. Children also like the computer's tireless patience, which lets them learn at their own pace, without frustration because other students are far ahead or behind.

Classware™ is designed to take advantage of that built-in affinity that kids have for computers and help them utilize your home computer as a learning aid. *Classware*™ will present a variety of programs to help your child learn math, social studies and other topics — and do it in such an entertaining way that t learning is fun, not frustrating.

Databar Magazine will bring you different *Classware*™ programs each month, building whole series of basic skills and other learning activities. Progra skill levels will range from pre-school to junior high school. High school and college student are more likely to be able to use other programs in *Databar Magazine*, such as *Scienceware*™ or *Wordware.*™ In addition, oth *Classware*™ programs will be available at retail stores. We plan to provide a comprehensive curriculum covering math, readi science and the humanities.

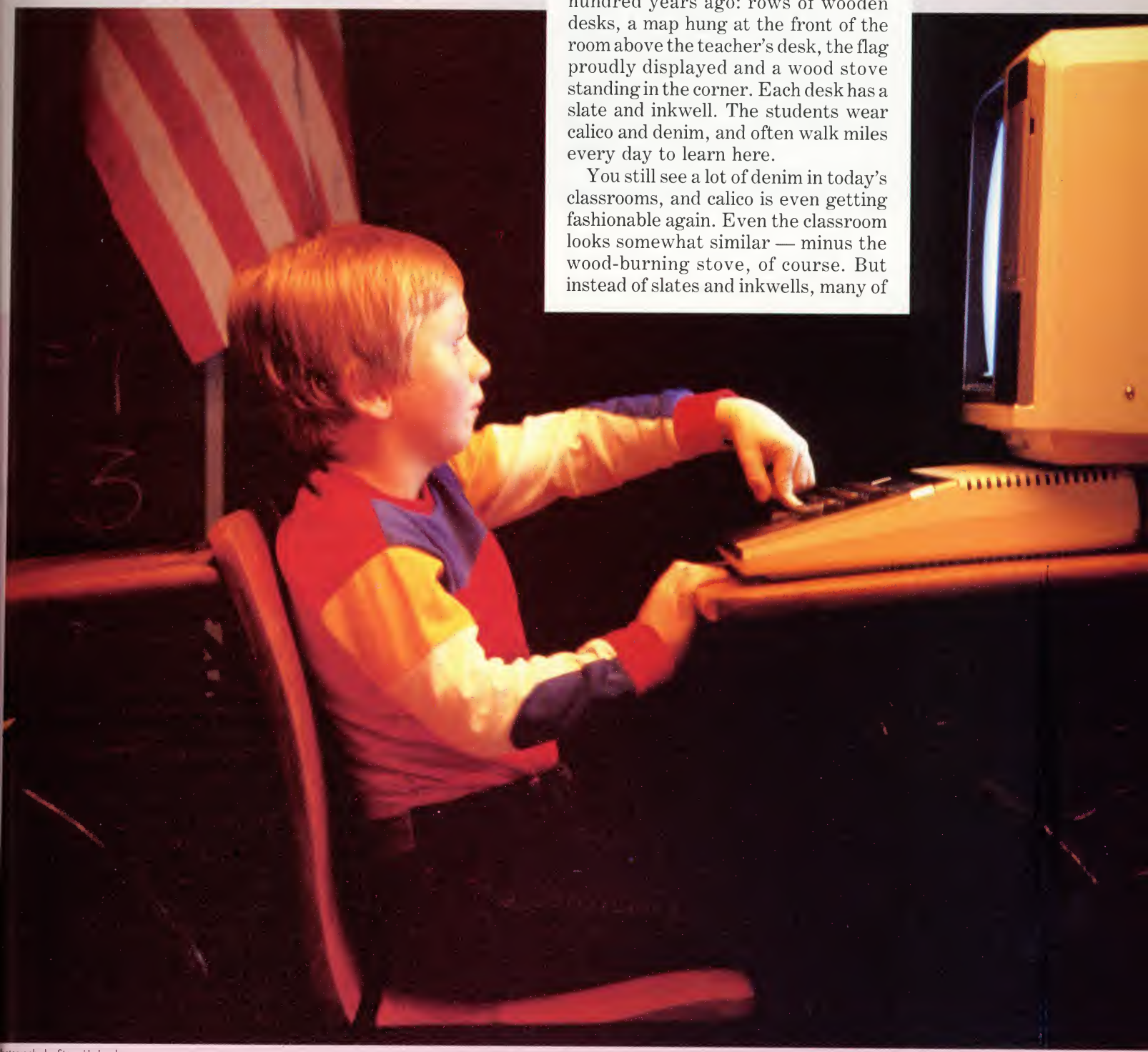
We've appointed an advisory board, educational experts who will oversee the development of educational programs and software. They have expertise i many disciplines and elementary curriculum areas. New members will be appointed to the board a we grow. A monthly article will bring you the latest information on education, not just computer in education. Guest articles and special features will make you a better architect of your child's home education and a better observer of your child's school education.

CLASSWARE™

RIDING THE NEW WAVE OF TECHNOLOGY

Imagine yourself in a classroom a hundred years ago: rows of wooden desks, a map hung at the front of the room above the teacher's desk, the flag proudly displayed and a wood stove standing in the corner. Each desk has a slate and inkwell. The students wear calico and denim, and often walk miles every day to learn here.

You still see a lot of denim in today's classrooms, and calico is even getting fashionable again. Even the classroom looks somewhat similar — minus the wood-burning stove, of course. But instead of slates and inkwells, many of



hotography by Steve Umland

"The computer can also be a center of family learning as well as fun. Parents and children can utilize this highly motivational machine and learn together."

today's children have a revolutionary learning tool: the computer.

The revolution doesn't necessarily mean that computers are going to take equal importance to the time-honored school subjects of English, math, science and others. This is not the message you get from computer magazines and other media. All now say we must teach our children computer literacy along with their other subjects.

Making Computers People-Literate

At *Databar Magazine* we're going to sound a different message and not promote computer literacy. Why? Because we think it's too tough a task. Look at how rapidly computer technology is moving, spawning new generations of almost every computer every few months. Even OSCAR will be changing in the near future, allowing you to update your current bar code scanner and software. How can any of us, much less our children, stay abreast of all new computer developments? We can't, and we don't think it's that important. Instead, Databar is going to help you to ride along with the trend of computer technology, the making of computers people-literate. Our *Classware*™ series is going to concentrate on the traditional school subjects, using the computer only as a tool to learn those subjects.

How Should We Think of This Tool Then?

The computer can also be a center of family learning as well as fun. Parents and children can utilize this highly motivational machine and learn together. In fact, in a role-reversal surprising to some adults, many parents are finding their children to be excellent *teachers* on the computer. Since children are less embarrassed by mistakes and are almost totally unintimidated by computers, they approach computers with open minds and a sense of adventure. The familiar image of the adult reading a book to the child in his lap is being replaced by the image of the warm glow of the monitor screen bathing the faces of two adventurers in electronic learning.

Like all learning devices, the computer is subject to misunderstanding. It's not a panacea for all learning difficulties. It doesn't replace books. It certainly doesn't replace the all-important personal contact between student and teacher or child and parent. But it can give an edge in learning by making what used to be the task of learning into the *adventure* of learning.

Educational Software

A lot of educational software is on the market for almost all computers. But quantity is not quality. Three principal problems face parents in search of good educational software for their children: Poor software, high prices (which limit the amount of software you can afford) and machine incompatibility (which means that the piece of software that would be perfect for your kids doesn't run on your computer).

The situation is improving, however. Software writers are paying significant amounts of attention to educational software for children. Educators are interested in finding software that is more than just electronic worksheets and bells-and-whistles games. They want children to have access to learning experiences that stretch their creativity, insight

and imagination, and they want their expensive teaching tools — the classroom computers — to be fully utilized.

Software for home use need not be compatible with software being used at school — though sometimes it would help eliminate confusion. But the home software should support classroom efforts. A call to the teacher to check on what's being used at school is a smart step.

There's useful and educational software for home computers that is also fun to use. You'll find some in this magazine, and much more on your computer dealer's shelves.

To see what sorts of computer activities your child enjoys or prefers, why not sit down and play at the computer with him some night? You needn't limit yourself to math drills, vocabulary flash cards and geometry software, either. There's software available for music, history, geography, science, English, art, social studies and many other subjects. Your computer should have a comprehensive software package if it is to be a really useful learning tool. And all of the above-mentioned areas should be available for whatever machine you have.

Cost of Programs

How much does a program cost? On the average, a program will cost anywhere from $20 to $40, available in cassette or diskette. In addition, there are much lower-priced — but equally good — bar code programs you can purchase for less than $10. (The programs in *Databar Magazine* — which you will receive when you join the Databar Club — cost only $1.25 each!)

The students of today have a tool that our early 19th century forebears couldn't have imagined: a machine that can do more calculations in an instant than they could do in a week. While our world is far more complex than theirs, the computer can be a learning tool to smooth out that complexity and make easy the difficult task of learning what we've always needed to learn.

After all, one thing hasn't changed from the time Horatio Alger left school to seek fame and fortune: the best-prepared student will be most likely to find that fame and fortune.

The Math Challenge Series

The *Math Challenge*™ series has been designed to help build basic arithmetic skills. In this age of pocket calculators, many young people (and even some not so young) look at you blankly or down at their fingers if asked to add two numbers. While there is definitely a place in today's education for calculators, there is also a need for people to have some arithmetic facility in the computer most readily available — their minds.

For example, you are standing on the corner of 9th and Main streets. Someone drives up and asks how far to Fairfax street, which you know to be one block down from 23rd. What do you do? (1) Whip out your pocket calculator and quickly find the answer. (2) Look like you're concentrating, put your hands behind your back and use your fingers. (3) Smile and say, "Not far. Keep going. You'll find it." If you do any of the above, you should sit down in front of your computer when you get home and play *Math Challenge*™, which you'll find on page 63 of this issue.

No single device or set of programs is going to answer every question or problem, but OSCAR and the *Math Challenge*™ series have been designed to make it easier for you to provide high-quality educational software for children.

The *Classware*™ series will always be written in English, not computer jargon, so children and parents will not only know how to use a program, but understand how it works.

To take a look at *Math Challenge*™, which will give your children, and you, practice at addition and subtraction, turn to page 63.

Putting-it-off is a health problem of national proportions. Almost everyone knows that smoking is hazardous, exercise is beneficial, and vegetables are more healthful than pastries. We know it, but most of us just don't do anything about it.

Our reasons for procrastinating are as complex and varied as the members of our society. But remember — it's your family's health at stake. What you need to get started is a regular, convenient and uncomplicated system to become health-wise.

Your home computer, OSCAR and a team of health experts will provide just that in *Healthware.*™ This system will provide you and your family with an "in-house" medical consultant and a workable, personal wellness program. *Healthware*™ will focus on four areas of software development: health promotion, illness prevention, home care and family development.

For example, this issue of *Databar Magazine* includes *The Health Assessment Quiz*™, a program that will help you pinpoint your current health status and look at the impact of changing some bad habits on your estimated life expectancy.

Future issues will explore:

- Staying Well — cardiac care, cutting cancer risks and quitting smoking;
- Home Care — taking care of sick people in the home; first aid for poisons, burns, cuts and bodily injuries; creating your own pharmacy in the home;
- Family Development — improving couples' communication, and family enrichment programs.

These articles and the accompanying *Healthware*™ can help improve your life and the lives of those you care about most.

To Your Health

Photography by Robert Whitman

YOUR HEALTH IS UP TO YOU

Out of every 100 deaths, fewer than 10 occur when they do because modern medicine doesn't have the cure. Only 20 are the result of biology and about 20 are pure accident. Almost 50 — one-half — are caused by an individual's own unhealthy behavior or lifestyle.

If you had been born in 1900, your life expectancy would have been only 47 years. For most Americans today, life is just getting started at that age. The elimination of infectious diseases by modern medical technology has given us a life expectancy upwards of 73 years.

That sort of progress is terrific, but it also puts an important burden on our shoulders. In 1979 the Surgeon General said clearly that we — not doctors or hospitals — control our own health destiny.

To minimize the risk of heart disease, diabetes, cancer and obesity, you should adopt a lifestyle that includes a

well-balanced diet and consistent, regular exercise. In short, you can improve your health and increase your longevity by what you eat and do.

Exercise!

The best kind of exercise for your heart *and* your waistline is aerobic exercise, such as running, biking, jumping rope and cross-country skiing. Aerobic exercises improve the body's ability to process and distribute oxygen, which results in a cardiovascular fitness that can prolong life. Aerobic exercises are also the most efficient way to "burn" and keep off excess stored fat, which is good for your body as well as your self-confidence.

Hans Selye, recognized as the originator of the current thinking about stress, also emphasized the need for exercise and fitness as a way to deal with the stress in our lives.

The human body was designed to fight or flee when stress presented itself in the form of danger — a sudden noise, an animal at the cave entrance, or any of a hundred other threats to our forebears. Today our minds may be better equipped to deal with stress, but our bodies continue to react as they did thousands of years ago.

Today's stress is quite different — your boss gives you a verbal tongue-lashing and your body reacts as though a physical threat were present. But modern convention dictates that you grit your teeth and bear it instead of fighting or running away.

Exercise provides a healthy outlet for that sort of stress. Selye said that to experience stress and anxiety with-

out intense physical activity simply adds more stress.

All too often, "training" is something that high school and college athletes do only to prepare for stressful competitive activity. As soon as the athletic competition is over, so is the training. Yet ancient Greek and Roman authors wrote of "training" as a lifelong activity, and that's what it should still be for all of us. Experts do not say exercise is the key to survival; rather, it's the key to longevity. When a 70-year-old man "in training" runs the Boston marathon in 3.5 hours it underlines the fact that our bodies decline more from disuse than aging.

Lifestyle Diet

If you struggle with weight, you're in big company. Blue Cross and Blue Shield estimate that 80 million Americans are overweight, with 30 million "obese" and another 15 million "morbidly obese."

Americans as a whole continue to eat today like their great-grandparents did. The trouble is that meals fit for someone who spent the day plowing fields behind a team of horses are way too big for an accountant who plows through figures behind the keyboard of a desk calculator.

A recent study of a large metropolitan area found 25 percent of the men and 20 percent of the women were overweight. In the 45-65 age-group, the rate increased to one in three — 39 percent of the men and 30 percent of the women.

A 45-year-old male who is 10 pounds over his desirable weight decreases his life expectancy by 8 percent. Twenty extra pounds will shorten his lifespan 18 percent or 13 years.

Still more people incur health hazards as part of staying trim. They do not eat a well-balanced diet, the right foods at the right time. For example, skipping breakfast as a way to conserve calories may result in an unproductive morning. Coffee and donuts may help cope with the 11 a.m. blahs, but at high calorie cost, with few vitamins.

The U.S. Senate Select Committee on Nutrition and Human Needs advised Americans in 1980 to increase consumption of fruits, vegetables and whole grains and decrease consumption of sugar, alcohol, saturated fats and sodium. They recommended four servings of fruit and vegetables, two servings of protein, one fat, four dairy products and four breads every day.

According to University of California researchers, eating regular breakfasts, combined with six other key health behaviors, can extend good health up to 30 years.

There's no doubt that, as Brillat-Savarin said, we are what we eat. And how long we are around has a lot to do with just what we eat.

Getting Physical

Losing weight is not nearly as big a problem as keeping it off. The statistics and diet advertising claims that show how much weight is lost in this country or in one program, deceptively do not reveal that more than 75 percent of that weight is gained again.

Many experts now believe that the best way to *keep weight off* is to dedicate yourself to a regular aerobic exercise program. For one thing, you use more calories in aerobic exercise. However, according to Covert Baily, author of *Fit or Fat?*, what is more important is that when you become leaner — have more muscle relative to fat — you become more efficient at burning calories *all the time.*

What is a regular aerobic exercise program? An aerobic exercise raises your heart rate to 70 or 80 percent of its capacity (called its "training rate") for at least 12 minutes. And you must repeat this at least four times a week. Examples of aerobic exercises include: jumping rope, jogging, running, swimming, dancing, jumping jacks, speed-walking, cross-country skiing and bicycle riding.

To figure your training rate, start by finding your resting rate: take your pulse while at rest for six seconds and multiply by 10. Next subtract your age from 220. (This is the fastest you should train or you risk overexercising, because your body cannot process the oxygen fast enough.) Next take your resting heart rate and multiply by .65; add that number to your resting heart rate and the total will be your training rate. This is what you should achieve for 12 minutes every exercise session.

For help in keeping yourself healthy, run the *Healthware*™ program contained on page 69 in this issue of *Databar Magazine.*

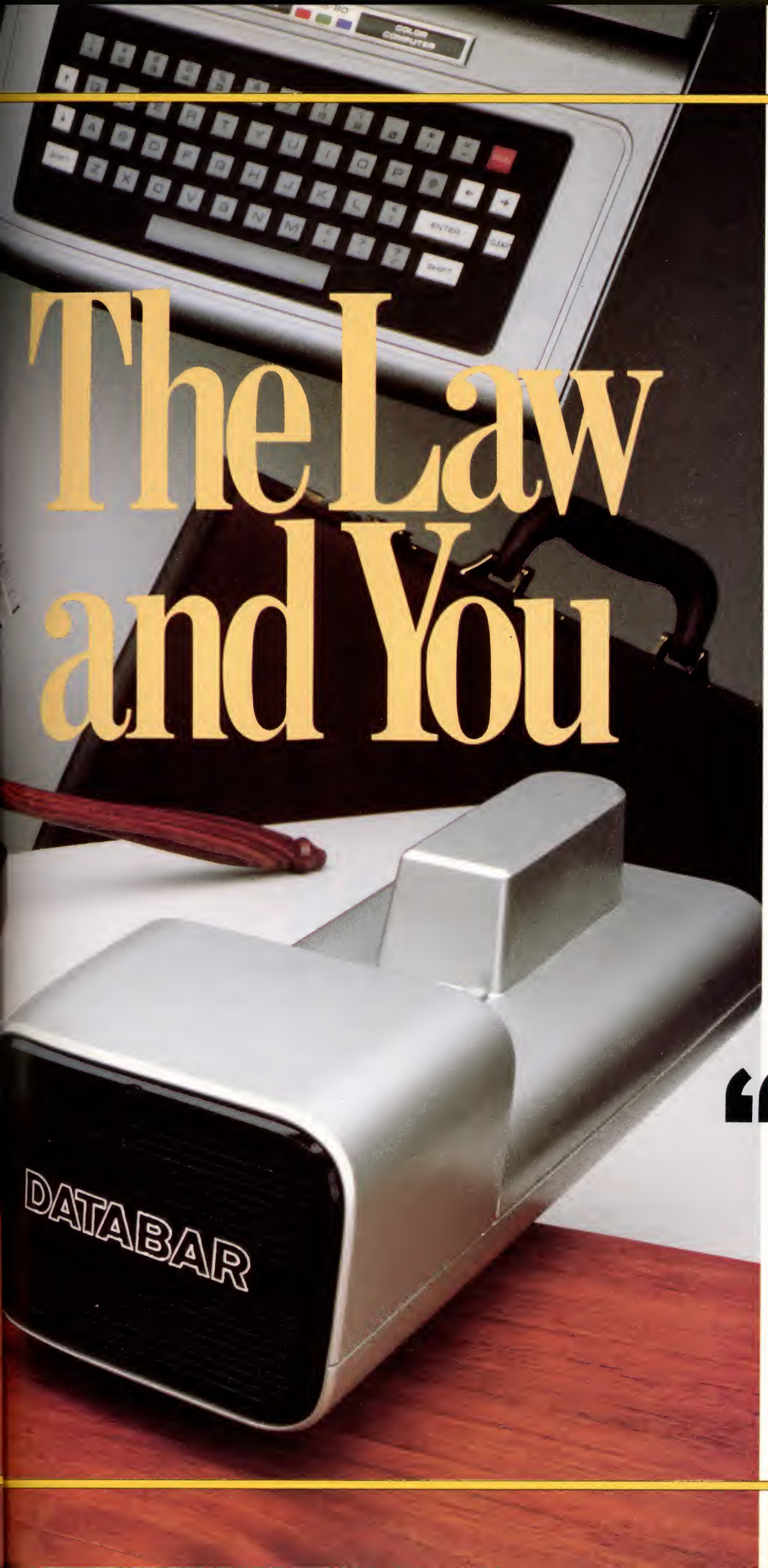
The law changes swiftly. Each day we read about court decisions, legislative actions and bureaucratic regulations changing the laws that affect our daily lives, whether it be the penalty assessed for driving too fast or the votes needed to approve a school bond issue.

Knowing what the law is and how it works in our communities, at our jobs and in our homes is a major achievement — even for a lawyer. But *Databar Magazine* and *Legalware*™ will provide the information you need to be a more effective citizen. And because *Legalware*™ is a state-of-the-art system, designed to respond to the needs of *Databar* readers, you will have an opportunity to propose topics for discussion here.

For example, a current news item about parental liability for a child's education could raise a number of questions in your home. A court ruling about a property-line dispute could involve many small businesses. As laws change or receive heightened interest because of current events (for example, the use of the insanity defense in the trial of John Hinckley Jr. for shooting President Ronald Reagan), *Legalware*™ will respond in these pages.

Already on the docket for future issues of *Databar Magazine* are articles and software on using small claims court, choosing an attorney, evaluating legal fees, and more. This should bring new understanding of the law to every interested citizen. As the American Bar Association has noted, the law is too important to be left only to lawyers.

Photography by Charles Purvis



The Law and You

LEGALWARE™

Statute Without Limitations:

THE LAW AND YOUR LIFE

"The law!" you say. "Who needs it?" The fact is that nearly every activity in our lives is governed by one law or another.

When you eat breakfast at the local diner, both criminal laws dealing with theft and civil contract laws require that you pay for the meal you have ordered.

Or when you mail off your income tax form and find out many months later that it never arrived, you can be penalized for late filing under another body of laws.

There are so many laws woven into

"There are so many laws woven into the fabric of our every-day existence that we tend not to think about them unless we're about to be accused, fined or imprisoned . . .

the fabric of our every-day existence that we tend not to think about them unless we're about to be accused, fined or imprisoned, or we feel wronged enough to sue someone.

Not too many years ago, the sight of a uniformed policeman on the corner stirred a rush of reassurance in most law-abiding citizens. They felt protected, safe.

Things aren't so simple today. Often that same sight of a uniformed policeman can make us feel uneasy and vulnerable because of stories we've read or heard: A neighbor is hauled off to jail for neglecting a parking violation, while a confessed murderer goes free on a legal technicality.

Many Americans, unfortunately, believe the law is fickle, that it protects the criminal better than the victim, and that the best way for a law-abiding citizen to deal with it is to avoid contact with law officers, lawyers and, indeed, the entire legal system.

This misconception threatens what has been acknowledged as one of the most efficient, responsive legal systems in the world. In a democratic society, people who ignore the law deny their roles as citizens. "Our legal system rests so precariously on public confidence that the rule of law itself is threatened by a lack of real understanding by the public," warned Morris Harrell, immediate past president of the American Bar Association (ABA), in a recent speech.

Public Education Pays Off

In his year-end report on the judiciary in 1982, Chief Justice Warren E. Burger of the U.S. Supreme Court observed that public education pays off. He cited a recent study that found juvenile delinquency dropped significantly, "when law-related courses are properly taught in schools." Accordingly, the ABA has assigned its highest priority to educating the public about the law and the American legal system.

Consider the very common situation of apartment rental and how quickly it can dissolve into a problem for the courts. Mark, 18, just graduated from high school. He wants to move away from home to share an apartment with a friend. Like many of us, Mark trusts friendship to conquer any problems. But he soon finds himself tangled in arguments about money when his roommate can't pay a share of the rent.

To prevent a situation like this from ending a friendship, it pays to discuss the legal ramifications of the relationship first. Who signs the lease? How are rent payments to be made? How are household expenses and chores to be divided? Should friends be given keys to the premises? When such things are spelled out, bitter feelings between roommates are avoided along with time-consuming, dollar-costing trips to small claims court or to your friendly neighborhood attorney.

About Contracts

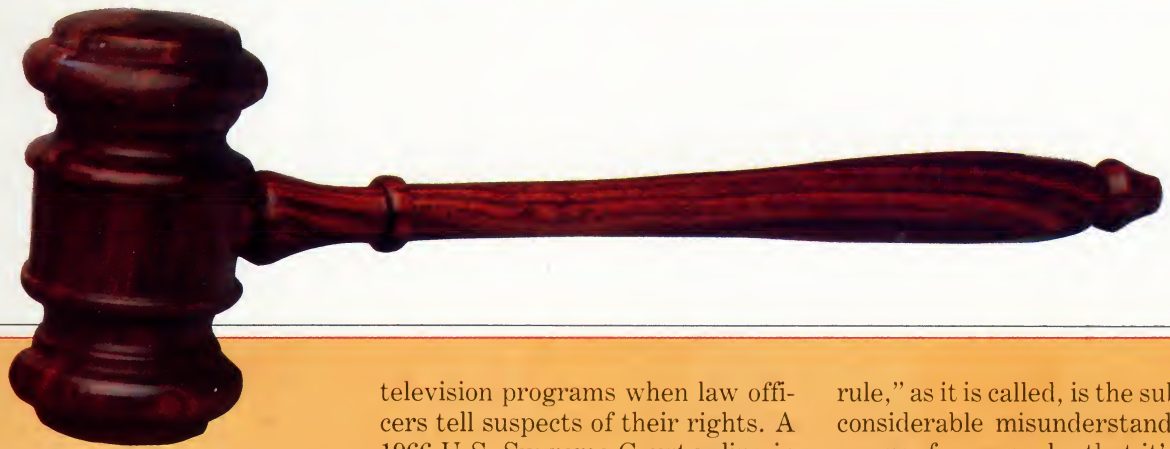
We've all been told to read and understand contracts before signing them, but consider this case, which illustrates just how important contracts can be. For the fun of it, pretend you're the judge hearing this case. You can check your judgment at the end of this article where we will tell you how the real case was determined.

Mary Williams, a single parent with seven children, bought several household items on a special installment plan from the Walker-Thomas Furniture Company in Washington, D.C. Every time she made a new purchase, she signed a form contract stating she was leasing the purchased item from the store for a monthly rental payment. The contract explained that the Walker-Thomas Company would be the legal owner of all items purchased until the monthly payments for them had been paid. Thus, as long as Mary owed any money to the store, everything she had bought there remained the property of the store, no matter how much she had paid. If she failed to make monthly payments, the store could take back all items previously purchased.

Mary bought a stereo under this plan. Before buying it, she owed the store $164 for all her earlier purchases, on which she had already paid $1,400. Soon after purchasing the stereo, she failed to make further payments and the store tried to take back everything else she had already bought.

Understanding how to deal with such an every-day legal situation can make life a lot simpler. After all, the rules and regulations designed to maintain peaceful relationships and achieve values society considers important — landlord-tenant laws, consumer laws, small-business laws, family laws — are meant to help smooth the course of our daily lives.

"The continued existence of a free and democratic society depends upon recognition of the concept that justice is based upon the rule of law grounded in respect for the dignity of the individ-



Know Your Rights

Some legal matters may not involve many of us on a day-to-day basis, but they are critical to understanding the direction of our society. And because the law is not written in stone, it is the responsibility of a well-informed public to change it when it's necessary.

One continuing legal controversy is the Miranda warning, the one you hear on *Hill Street Blues* and other television programs when law officers tell suspects of their rights. A 1966 U.S. Supreme Court ruling in *Miranda vs. Arizona* is the origin of the warning: "You have a right to remain silent. Any statement you make may be used as evidence against you. You have a right to have an attorney present at the questioning. If you cannot afford an attorney, one will be appointed for you."

But must officers give the warning at the time of arrest? No. The Supreme Court was careful to limit the requirement, stating that the warnings must be given only when a suspect is in custody and about to be interrogated.

The court further stated, however, that any evidence obtained without such a warning is excluded from a trial. This "exclusionary rule," as it is called, is the subject of considerable misunderstanding. It means, for example, that it's possible that a confession, given voluntarily by a suspect who has not been read the Miranda warning, may not be permitted to be used as evidence in court.

The average citizen finds it baffling that a confession to a crime may not always be used to prove the suspect guilty. Because laws change with society's needs, these rules relating to evidence in criminal cases may change, too. The court was to consider cases last fall dealing with the constitutionality of the exclusionary rule. If there has been a change, look to *Legalware*™ to update you in future issues of *Databar Magazine*. This issue's *Legalware*™ software begins on page 75.

ual and his capacity, through reason, for enlightened self-government," says the American Bar Association's *Code of Professional Responsibility*.

So if you're tempted to say, "The law — who needs it?" you might want to think again. Your lack of understanding could be part of the problem.

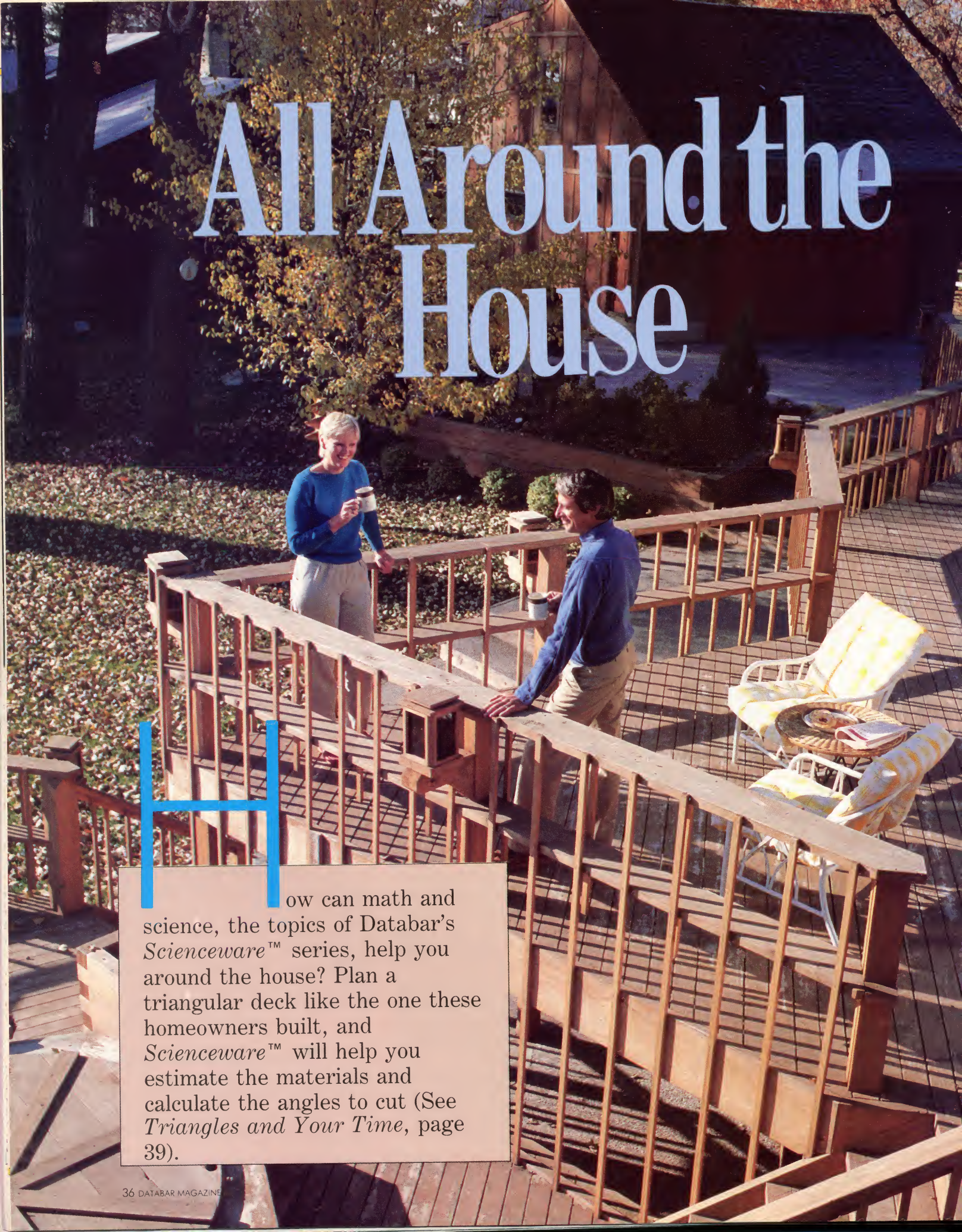
The Decision

As for Mary Williams' situation, could the store really claim all of the items she had purchased? Was its special installment contract fair? Did it violate any laws regulating contracts? A Washington, D.C., court held that such a contract was "unconscionable." The court said:

"Ordinarily, one who signs an agreement without full knowledge of its terms might be held to assume the risk that he has entered a one-sided bargain. But when a party of little bargaining power, and hence little real choice, signs a commercially unreasonable contract with little or no knowledge of its terms, it is hardly likely that his consent, or even an objective manifestation of his consent, was ever given to all the terms. In such a case the usual rule that the terms of the agreement are not to be questioned should be abandoned and the court should consider whether the terms of the contract are so unfair that enforcement should be withheld."

Although the store was attempting to use a legal tool — a contract — to protect its own interests, the court upheld Mary's individual rights.

All Around the House



How can math and science, the topics of Databar's *Scienceware*™ series, help you around the house? Plan a triangular deck like the one these homeowners built, and *Scienceware*™ will help you estimate the materials and calculate the angles to cut (See *Triangles and Your Time*, page 39).

Courtesy of Heath Company

Scienceware™ articles will work for your family even if you're not a home-improvement enthusiast. If there are math and science students in the household, they'll find another, more practical slant on the topic they study in textbooks. If you are a hobbyist in photography, electronics, golf or almost any other recreational field, you'll find *Scienceware*™ makes it easier to have fun.

Best of all, OSCAR's *Scienceware*™ programs are designed for non-math people. If your palms sweat at the thought of fractions, trying to hold your own in a discussion of R factors, or figuring out escape velocities, OSCAR and *Scienceware*™ are made for you. Students and parents alike will find this series a useful learning tool.

OSCAR won't transform you into a science whiz kid. If you hate math, *Scienceware*™ is not going to have you champing at the bit to tackle calculus. What you *can* get is hands-on experience with math and science concepts in an unhurried and comfortable atmosphere. The programs offer the opportunity to get back in touch with some of the math skills that you may have forgotten through lack of use.

Most important, the *Scienceware*™ programs concentrate on practical applications for math and science. Numbers may bore you to death, but those figures come alive when they tell you something about your daily life.

Take hobbies, for instance. Golf enthusiasts will be able to figure out their handicaps with *Scienceware*™ programs. You can find out how much money you will save with energy-saving products such as window quilts, electronic igniters and fuel-efficient appliances. Besides hobbies and mathematics, *Scienceware*™ programs will also include information that can be used for do-it-yourself home-improvement projects. It's one more way you can put OSCAR to use in your own home. As with all the *Scienceware*™, the home-improvement series will not

Scienceware™ programs will concentrate on do-it-yourself home improvement projects and hobbies, such as electronics and photography.

BANISHING THE MATH AND SCIENCE BLUES

George Gobel once complained, "Have you ever felt like the whole world's a tuxedo and you're a pair of brown shoes?" For the millions of people with a weak foundation in science and math, the feeling is familiar.

We've become a high-tech society where sophisticated computer and

require expertise in the field to apply the information.

Time is a critical factor in taking on home projects. Some take a weekend and others take large blocks of time that you'd rather spend in other ways. So our programs will indicate how much time you can expect to spend on various projects. We'll show you how to figure the amount of materials needed.

Our programs will be useful and informative for the whole family — students, experimenters and hobbyists, as well as the non-technical person.

high-tech space-age technology affects just about every area of our lives. And that's what *Scienceware*™ is all about —articles and software programs that apply the principles of math and science to everyday problems.

The Way Math is Taught

A hundred years ago, even basic school subjects were not essential for employment or enjoyment of life. The early part of this century produced many business and industrial magnates who had less than grammar school educations. But today our society has become so complex that individuals with deficiencies in math and science feel outclassed and out-of-step much of the time.

Jere Confrey, director of Mount Holyoke College's SummerMath program for math-anxious high school girls, believes that a lot of problems stem from the way math is learned. "Many students approach mathematics by memorizing instead of by trying to understand," says Confrey. "If you rely on straight memorization of formulas, you have only one route to the answer. As soon as you run into a non-routine problem, you're lost."

SummerMath concentrates on teaching students problem-solving techniques, persistence and flexibility in the student's approach to math. Computers are used to eliminate some of the situations that foster math anxiety in traditional classroom settings. "One of the things we think creates problems for students," says Confrey, "is their perception that math classes are very evaluative and very public." Everyone knows when you get the wrong answer.

Furthermore, learning at your own rate is out of the question in most classrooms. Curriculum schedules are set up in advance and march right along, regardless of who gets trampled or bored. The end result can often be "math anxiety."

Math Anxiety

Math anxiety is a term used to describe the irrational fear of mathematics, says Joan Claesgens, director of the Math Anxiety Program at the University of Minnesota. "Anxiety results in avoidance, and avoidance results in reduced ability to perform. It's a spiraling effect."

For many, the spiraling effect begins in grade school and can stem from many causes. Since each succeeding math unit in school tends to build on skills learned in the previous one, a prolonged absence from class or a move to a new school can begin the cycle. Some children learn at a slower rate and fall behind as new skills are being introduced. Others get lost in the shuffle during the move to New Math and back to regular math again.

Without a solid foundation, confidence erodes and soon the math-anxious student concludes, "I'm dumb and I'll never be able to learn this." By the time these people reach high school and college, this "mathophobia" has closed the door on many options for them, most significantly a chance at well-paying jobs in science, engineering and technology.

What's Being Done?

More and more clinics, seminars and short courses are being developed to help the math-anxious person. Since 1976, the University of Minnesota has offered a Math Anxiety Program that includes diagnostic clinics, support groups, tutoring and special classes to develop math skills ranging from simple arithmetic to analytical geometry. According to Claesgens, over 4,000 people have taken advantage of the program over the last seven years.

The designers of *Scienceware*™ believe that there is no reason to have the "math and science blues" when you have a friend like OSCAR.

Triangles and Your Time

Triangles and time would seem to have little relationship, other than being fairly close to each other in a dictionary. But they do. Those triangles you may have disliked so much in high school geometry and trig are very much a part of your daily life, and knowing more about them can save you effort, money and time.

For example, finding out the height of a wall or the total area to be painted can be very important to calculating the amount of materials needed to complete a building project. And that's where the ability to "solve" a triangle can make life easier. Suppose you want to paint your house or wallpaper a room. Measuring a squared-off area to determine the amount of materials to purchase is a fairly simple task. But what about gabled areas? This month's *Scienceware*™ program will show you how to calculate the answer fast.

Lumber is expensive these days, and knowing exactly how much you need for a building project can save dollars. As with painting, it's easy to calculate the amount of lumber needed to finish off a porch or add a deck if they are rectangular. But if they are not, solving that triangle again can pinpoint just how much material you'll need.

The ability to solve a triangle is as functional in the kitchen as in the work shop. Celebrate a special occasion with a Star Cake. Bake a layer cake. Use one layer for the body of the star. Cut the second layer into five equal triangles to form the points around the body. You can use this issue's *Scienceware*™ program to find out exactly the size triangles you need.

One way to measure the distance to a far-away mountaintop is to sight in on a given point on the mountain from two locations, carefully measuring the angles and the distance between two sighting points. Turn to page 81, and this issue's *Scienceware*™ feature will tell you just how to do that.

WORDWARE™

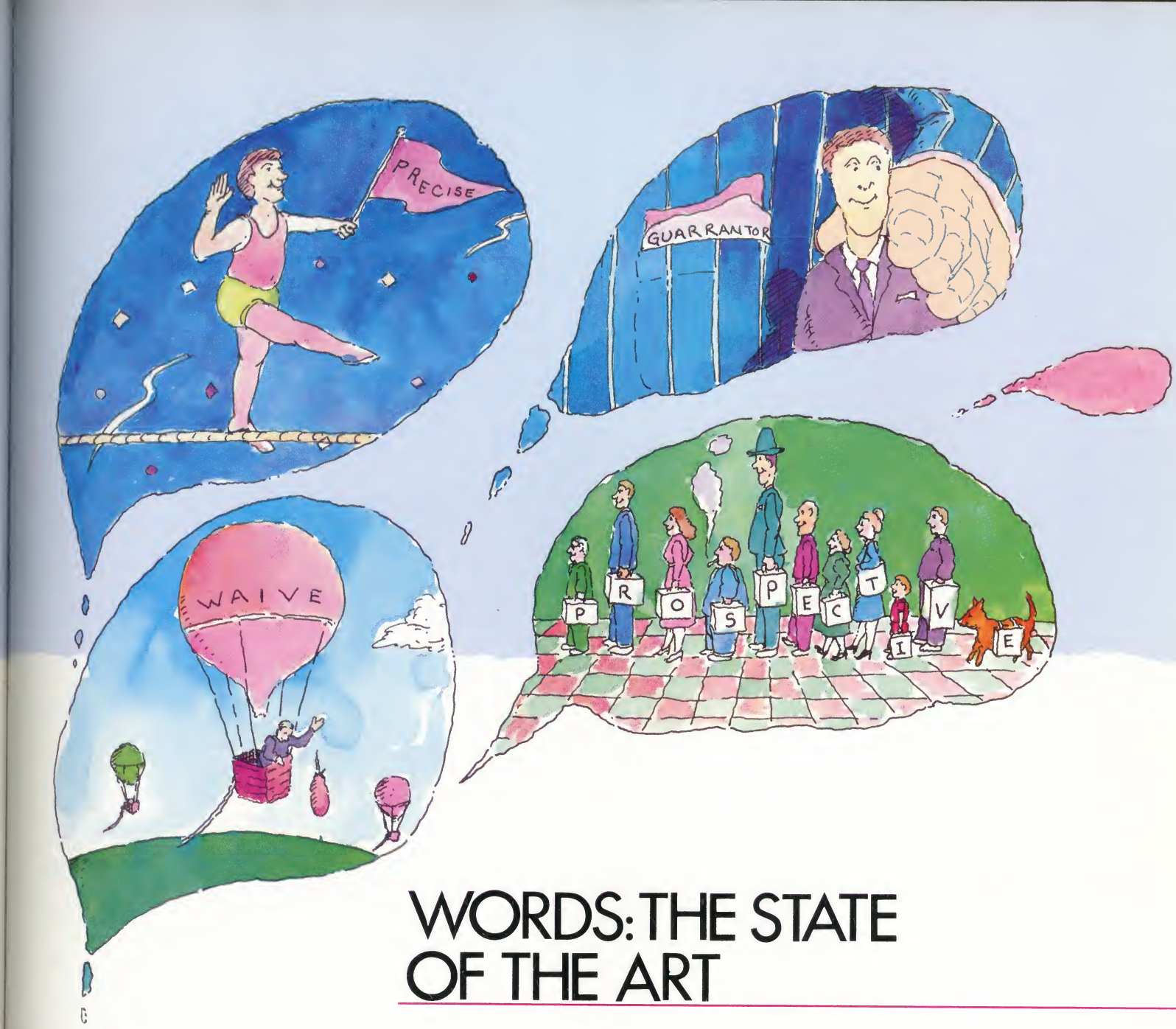
The World Of Words

Just try to imagine a world without words. Photographs, paintings, international symbols, smoke signals, gestures and musical and scientific notations would be our means of communication. But unspoken and unwritten communications simply can't take the place of a few well-chosen words.

Command of the language is becoming increasingly critical, particularly in today's competitive job market.

But just pick up a newspaper and you're likely to read about the battered English language. We all need help with words, and at Databar we have the one word that can help increase your wordpower: OSCAR. OSCAR's *Wordware*™ series will help you read more efficiently, check your writing for clarity, answer questions about the fine points of grammar before you embarrass yourself in a memo to the boss, practice frequently mispelled/misspelled (choose one) words, and organize your thoughts in a logical manner before committing them to paper or a word processor. OSCAR will help you write better business letters, resumés, even better love letters.

OSCAR is going to change the way you write, talk and read. Take our word for it.



WORDS: THE STATE OF THE ART

Illustration by Myron Grossman

Just how powerful are words? They've toppled governments, caused the strong to cry and inspired the weak to amazing feats. They've started and stopped wars, helped give women the vote and catapulted formerly obscure people into prominence.

There's nothing easier than the phrase "I Love You" to express the deepest emotion one person can have for another. And "Ya know?" or "And then he goes . . ." repeated by a teenager can drive the most patient parent to absolute insanity.

Words make you laugh: "Did you hear the one about . . . ?"

Words make you cringe: "Him and me, we done it. Ain't that right?"

Words sell: "BUY!"

Words confound: "The systematized digital optional reciprocal integrated thingamajig."

Words simplify: "Push here."

Words commit: "I do."

Words finalize: "The End."

And best of all, words provide lots of options: "Well, maybe."

But for all the importance of words, reading and writing are in a sorry state. Just take a quick look at some of the facts:

Only one-fifth of high school graduates can write a persuasive essay. Thirteen percent of all 17-year-olds in this country are functionally illiterate.

And trouble with words doesn't stop with younger people. On college campuses, nearly 40 percent of the students are older than age 25. A large share are hoping to learn new skills for today's job market. But many of them have voiced concern over their reading and writing skills, feeling these skills affect their ability to compete with the younger students.

A growing number of corporations across the country are hiring consultants to teach their executives how to write clearly and concisely. That's because a well-written memo, sales report or marketing projection gets the results the writer intended. A poorly written one can cause confusion, at best, and serious errors, at worst.

Insurance companies, and even the federal government, have taken steps to rewrite complicated policies into simple, understandable English.

Coming Attractions

Someone once said (or, more likely, wrote), "Writing is easy; all you do is sit staring at a blank sheet of paper until the drops of blood form on your forehead."

But OSCAR's *Wordware*™ and your home computer can take the drudgery out of word work by helping you with both writing and reading.

Whether you want to write better at work, increase your chances of success in school, or just because you love words, *Wordware*™ can help. The series has four parts: *Wordwrite,*™ *Wordread,*™ *Wordpower*™ and *Wordfun.*™ Each part will be covered with both articles and software (a word just recently added to most dictionaries). This issue's article and program examine bad reading and writing habits. One key to the *Wordware*™ series is its skill-building for word processing. If you're not currently doing word processing on your computer, you likely soon will be. *Wordware*™ gets you ready for electronic writing.

Here's a quick look at how future segments will help you.

Wordwrite™:

Maybe that title should be "Right Words" because these programs will help you make your words active. And with *Wordwrite,*™ you'll get computerized tips on editing your own writing as well as that of other writers.

If you want to know how understandable your writing is, there'll be programs to analyze its readability, assist with the proper use of nouns and verbs, and help edit sentences to decrease wordiness and increase variety. *Wordwrite*™ will help end the clutter that turns simple and clear

writing into gobbledygook. You also get help with that old bugaboo, punctuation.

One way OSCAR and your computer will help is by answering questions. For instance, what makes certain reading material difficult? At what reading level are best-selling books written? How many words per sentence do successful writers use? What do you need to do to make your writing more interesting? *Wordwrite*™ will tell you.

Wordread™:

The better you read, the better you write. And the better you write, the better you read. *Wordread*™ will help you read faster, comprehend more and retain the information longer.

Reading skill often depends on what is being read. A novel is read in a manner quite different from the latest personnel department rules and regulations. *Wordread*™ will enhance all of your reading: business, professional, school and personal.

Wordfun™:

Everyone agrees that the secret to learning is to make the subject matter enjoyable. If you can make it fun, all the better. *Wordfun*™ is a fun way to build your vocabulary, improve your spelling and correct improper usage.

There will be vocabulary teasers:

What is the correct definition of putative? (a) supposed (b) doubtful (c) concerned with punishment (d) undeniable

Or, for "closet misspellers," here's an example from another *Wordfun*™ section:

Though it's sometimes spelled 'undoubtably' and pronounced 'un-dowt-ab-lee,' the correct spelling is 'undoubtedly' and it's pronounced 'un-dow-ted-lee.'

Wordfun's™ section on spelling mistakes will also be helpful, and you can pit yourself against OSCAR in a speedy game of Hangperson.

If you're a crossword puzzle fan, you'll enjoy the annual Crossword Vocabulary Review.

Wordpower™:

What do you do when the pressure of an overdue paper, report or letter to your Mom starts to get you down? Do you stare at that blank sheet of paper for hours? Do you procrastinate until you just absolutely have to get it written and then spend half the night writing it? Do you hire a free-lance writer? *Wordpower*™ will help unblock your ideas by helping you generate creative options for your writing project.

To further tap the potential of your home computer and to help you write better, OSCAR will give you:

Writer's Anxiety Quiz, to help you find out just what creates anxiety when you try to write and tell you how to overcome it.

Ten Ways To Unblock Your Writing. Unblocking your creativity is often just finding out what stands in its way and getting rid of it.

How To Organize. Lack of organization is often a bigger enemy of good writing than anything else. Saying the right things won't help if your presentation is so disorganized that no one will read it.

Wordpower™ will also help you sharpen your business-writing skills with programs to write a resumé or a letter of application for the new job you want. And, after you get the job, *Wordpower*™ can help you write readable letters and executive summaries to keep your employer smiling.

And just in case you believe you've mastered every other kind of writing, there's not a writer alive who can't use

more ideas for writing love letters.

Word Processing

Whether you'll be using a word processor for love letters or business memos in the future, *Wordware*™ will design specific programs to put you in touch with the writing keyboard.

(Oh, and by the way, the definition of putative is (a) supposed, reputed. It's used this way: "His/her putative ancestor was a Duke/Duchess.")

Beginning on page 87, you and OSCAR can get on the road to better reading and writing habits with *Wordware*™ programs.

GENWARE™

The BASICs of

If the fingernail-sized microchip is the heart of the microcomputer revolution, programming is its soul. Without instructions, a computer is a dumb beast, unable to perform the simplest tasks. These instructions are called *programs*, and the process of writing them, *programming*.

You may have wanted to try programming, but were scared off because it sounded too complicated, too "mathematical."

Perhaps you have even tried to learn the BASIC language by reading the manual that came with your computer, but gave up in frustration. But now Databar offers *Genware*™, special software programs that will help you learn to write programs in BASIC, using your computer itself as a guide and teacher.

Genware™ is written for people without previous experience in computer programming. Each topic, starting with the first monthly issue, will be taken one step at a time, with many examples used to make everything perfectly clear.

Learning to program, however, is a "hands-on" job. You cannot expect to learn to program by simply reading. You must practice. Trying to memorize the syntax and vocabulary of BASIC without typing it in is not only inefficient, but frustrating. Moreover, as you will see, programming is much more than writing some BASIC statements; it involves planning ahead, understanding of what you are

Programming

trying to do and some patience to solve some problems in ingenious ways.

One comfort: you don't have to be a genius or have an aptitude for mathematics to be a good programmer. All you need is the willingness to learn to think in a logical, orderly manner.

By the third lesson in the *Genware*™ series, you will be writing your own programs with ease. And by the time you complete the series, you will be an accomplished programmer, able to easily write programs to help you handle everyday affairs around your house.

Computer Call Home... In BASIC

You don't have to know how to program a computer to use one. But learning how to program will provide insight that lets you take full advantage of the investment you've made in your home computer.

All computers, from large, multi-million-dollar giant "mainframes" to small hand-held portables, require a set of specific instructions, called *programs*.

These instructions may be written in one of many programming languages. You may have heard of some of them — Fortran, COBOL and Ada, for example. Each language has a specific purpose: Fortran is primarily for scientific purposes, COBOL is used by businesses and Ada is used by the Department of Defense.

We will deal with the most popular and useful of all computer languages for non-specialists, BASIC. Once you learn its English-like commands, you will be able to write programs yourself and make the computer "march to *your* drummer."

The BASIC Language

BASIC was developed at Dartmouth College by John Kemeny and Thomas Kurtz, who realized there was a need for a computer language that could be used by people with widely diverse backgrounds. BASIC is an acronym for Beginners All-Purpose Symbolic Instruction Code. The simple design and structure of the lan-

guage makes it easy for people with no previous experience to learn to program quickly and easily. BASIC is now available on almost every microcomputer system and is one of the most popular languages in use; there are more programs written in BASIC for home computers than in any other language.

Data processing professionals once looked at BASIC as an "amateur" language. But many professional programmers now use modern versions of BASIC daily; it is a common language for business applications, even on larger computers.

Why Programming?

Why do we need a programming language or, for that matter, a program? The answer to these questions lies in the inherent structure of the computer.

The central processing unit, or CPU, is the workhorse of the computer system. All of the work, such as addition and subtraction, is done in the CPU.

The CPU is capable of "understanding" only about 100 instructions of the simplest kind, such as, "Add this number to that number," or "Tell me if this number is equal to that number."

Everything a computer does, no matter how complex, is done with these simple instructions. For example, to add two numbers in memory would take three instructions on most computers:

1. get the first number from the memory unit;
2. add the second number from memory to it; and
3. store the result in memory.

BASIC reduces this to a very simple statement:

```
LET C..A.B
```

What is a Program?

Programming is just a fancy name for "giving directions", like the written directions you might give colleagues at work so they can find your house for a party, or the instructions for assembling a new bicycle tell you how to put it together. All programs, whether written for computers or people, have the same basic ingredients:

- An author or programmer;
- Data or information;
- Decision points or "branches" ("If you see a large red barn, you've gone too far, so turn back.")
- Iterations (Repetitions, such as "When you've finished with assembly 'A' on your new bicycle, complete assemblies 'B' through 'E' in the same fashion.")
- Outputs (Results, such as a finished bicycle or friends arriving on time.)

Problem Solving

Programming is a way of writing instructions needed to solve a particular problem. Note that we said "write the instructions." No computer language will "solve" a problem. That's your job. A programmer must determine the problem to be solved, design a solution plan and only then write the actual program.

The major aspect of programming is the design of the *solution plan*, sometimes called problem solving. One mistake many how-to-learn-BASIC books make is trying to teach typing in code first instead of teaching *how* a program should flow. For most programs, the amount of time spent on the solution plan will be much greater than the amount of time spent writing the BASIC statements.

It is relatively easy to write the necessary BASIC statements once the solution plan has been developed. Planning the solution, however, is a skill that most people must develop with practice.

Genware™'s step-by-step programs will provide what you need to know about programming — it's up to you to provide the practice.

What GENWARE™ Has in Store

At the end of the 12-month course you should be able to:

- Determine the problem to be solved and break it down into its component parts;
- Identify the input needed to solve the problem;
- Name and document the variables used;
- Select the operations to be performed;
- Use iteration and selection techniques in your solution;
- Write valid BASIC statements to implement that solution;
- Determine what output the program is to produce and plan its format;
- Check your solution for validity.

Confused? Don't worry if some of these terms are unfamiliar; all will be explained during your *Genware*™ course with the help of OSCAR and *Genware*™ programs. Each issue of *Databar Magazine* will focus on a particular area of problem solving or the BASIC language.

Each lesson will be in two parts: the lesson for the month and a program highlighting some aspect of that lesson. Sometimes we'll leave a program uncompleted, and you will have to finish it . . . and run it on your computer.

You will also need the manuals that came with your computer. They will give you specific instructions for entering, editing and saving programs on your particular brand and model of computer. You may also need them to check some details of BASIC syntax; different microcomputers use different dialects of BASIC. In *Databar Magazine* we will stick to a common version of BASIC to reduce problems caused by differing versions of the language.

- Introduction to Programming and Problem-Solving Techniques. You will be introduced to the special terminology and some basic programming concepts.
- Entering and Editing a Program. The fundamentals of entering a simple program into your computer. You will enter and run a program during this lesson.
- Variables in BASIC. Learn what variables are and how to use them.
- Problem-Solving Principles. Find out how to break a problem into parts and create a diagram, or flowchart, of your solution.
- Arithmetic Expressions. How to write arithmetic expressions in BASIC and use special functions.
- Output in BASIC. Make your program produce the output you need and format that output on the screen to make it easy to read.
- Input in BASIC. Make your programs "user friendly" by asking for input from the user.
- Logical Expressions. The special kinds of decisions you can make in a program and how to write them in BASIC.
- Simple Selection Statements. Make your program choose between alternatives.
- Simple Loops in BASIC. Learn to make your program repeat instructions as many times as specified.
- READ and DATA Statements. Make a table of information for your program and use the information in the table.
- Practice Problems. This last lesson will focus on practice problems using features learned in the previous lessons.

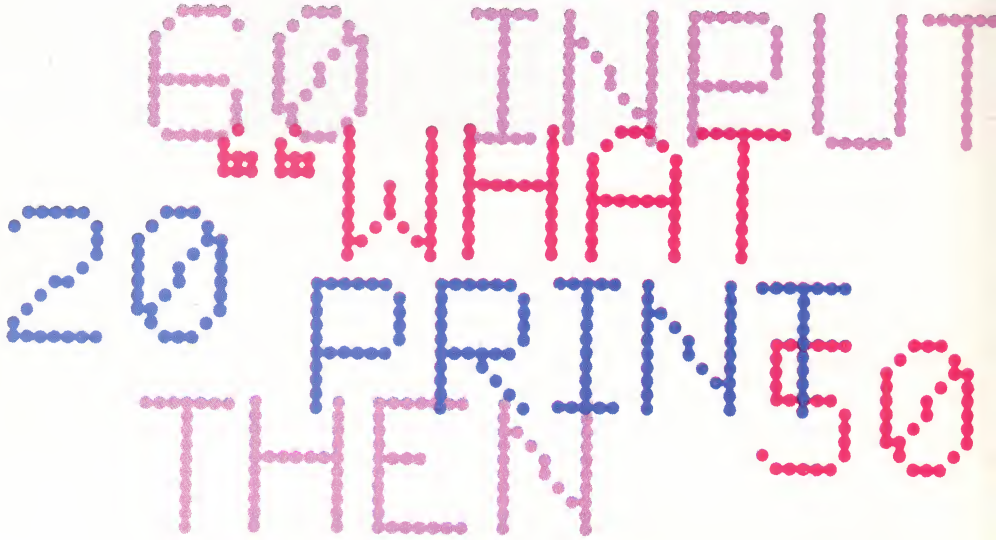
While it is tempting to enter the first thing that comes to mind, it's much easier to concentrate on the problem and compose a solution plan on paper before typing it into the computer. In time you will be able to write your programs directly on the computer, though we recommend that you write them on paper for the first few months.

What You Need To Know

What do we expect you to know before learning how to program? You do not have to be a math whiz. All you'll need is a knowledge of ordinary, everyday arithmetic, such as addition and subtraction. You don't need to be a genius either. Almost anyone willing to practice can learn to program a computer.

Once you get over the first feelings of intimidation, working with a computer will be fun. The computer will respond quickly to your inputs, and if you make a mistake, it will tell you. Don't let it bother you; the computer is only a tool, and you are always in control, even if it doesn't always seem that way. After all, you don't give up hammering just because you hit yourself on the thumb once.

Now, for a look at two BASIC programs, turn to page 93.



How to Use OSCAR Correctly

1

Plug OSCAR into your computer, following the instructions in your User's Manual. Carefully remove the cover page and program pages of a program from the magazine and place them on a flat, clean, dry surface. Test OSCAR by lifting the wand. OSCAR should generate an "Enter Next Line" prompt — a high-pitched beep. Replace the wand.

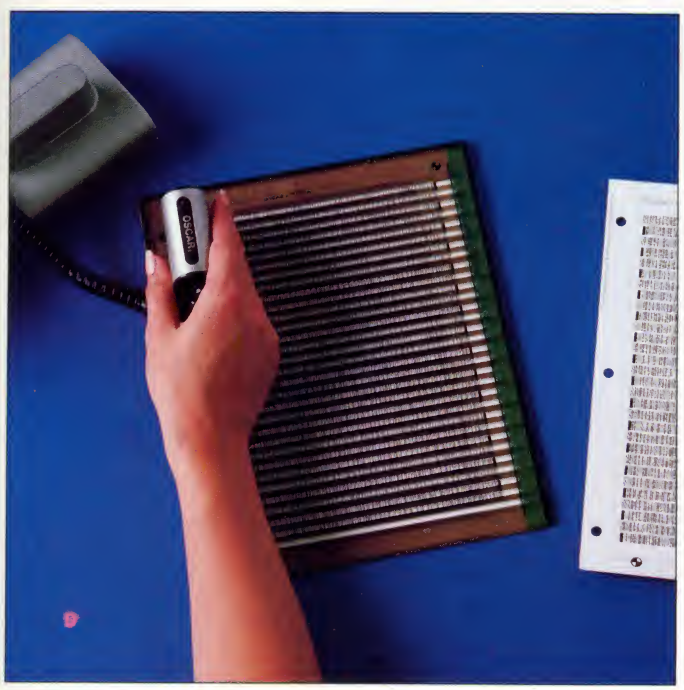
2

Position the plastic template over "Program Page 1," lining up the template's corner boxes with the corner boxes printed on the program page. There should be an equal amount of white paper showing through the template grooves at each end of the bar code lines. Turn on your computer, remove OSCAR's wand to turn on OSCAR again. Wait for the "Enter Next Line" prompt.

Photography by Bill Braly

The OSCAR User's Manual provides detailed instructions on how to use OSCAR with different brands of home computers. You'll need to study the User's Manual to learn all the procedures for using OSCAR. The abbreviated instructions on these pages give you a beginning look at how easy OSCAR is to use.

3



Place the tip of OSCAR's wand in the left side of the template's top groove. The notches on the wand's bottom should interlock with the template's ridges. Wait for another "Enter Next Line" prompt and smoothly glide the wand across the first line. If you hear a buzzing noise, slide the wand back to the start of the line and begin again. Don't get frustrated with the buzzing. It takes practice to scan smoothly.

4

Listen for an "End-of-Line" prompt, a higher beep, when the wand reaches the end of the line; OSCAR has read the line successfully. Leave the wand in place and enter the commands for your computer listed in OSCAR's User's Manual and on the next page. Again, because OSCAR is a precise electronic instrument, you shouldn't try these steps without first reading your User's Manual.

Commands to Get Started

Study your User's Manual for how to use these commands in loading a Databar program into your computer with OSCAR.

Texas Instruments 99/4a
Press any key
Press **1**
Type **OLD CS1**
Press **ENTER**
Press **ENTER**
Press **ENTER**

Commodore 64/VIC 20
Type **LOAD"",1,1;** and press **RETURN**

Commodore PET
Type **LOAD;** and press **RETURN**

Atari
Type **ENTER "C** and press **RETURN**
Press **RETURN** again

TRS-80 Color Computer
Type **CLOAD** and press **RETURN**

5

Move the tip of OSCAR's wand straight down into the second groove and scan the second bar code line right to left. Continue moving down the page, scanning each line in the direction opposite the last line, but always starting at the end of the line that doesn't have a thick black bar. Wait for an "Enter Next Line" prompt after each "End-of-Line" prompt before scanning a line. Sometimes the "Enter Next Line" prompt may be delayed several seconds.

6

When you've finished scanning the first program page, turn the page over to "Program Page 2" and repeat the same process (without stopping to enter anything after the first line). At the end of this page, move the template to page 3 (and to Page 4 if included), and finish entering the program. Don't delay in moving from page to page because some computers have time limits for loading programs.

F U N W A R E

FOR
T.I. 99/4A

PROGRAM Nº.
09930003

OSCAR'S MATCH

Find the pairs of numbers hidden behind the computer's doors.

OSCAR's Match, a game similar to Concentration®, requires a sharp memory to pair the hidden numbers in the fewest possible turns. Everybody — kids and adults — can play, either solo or with 1 to 3 others. Four skill levels give you 6 to 24 doors to match.

0 39895 25002 3

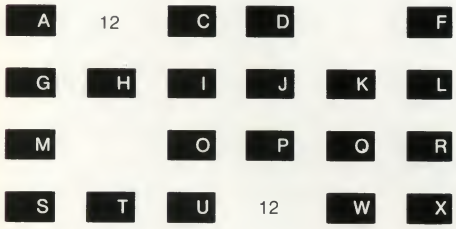
OSCAR'S MATCH

MEMORY IS A FUNNY THING

How often have you forgotten the punchline to a great joke you've just heard? Or worse, a joke you've already started telling someone?

How long can you remember a phone number you've just looked up? Long enough to walk across the room and dial it? Yet, you may not have trouble getting other numbers out of your head — much longer numbers like your Social Security number.

To researchers, human memory is still an enigma, but they have learned enough about memory to discover it works in different ways. They think there are two kinds of memory: short-term and long-term. Short-term memory holds detailed information that is only temporarily useful — phone numbers we look up, the location of our car in the parking lot or the time our flight leaves, for example. Since there's no reason to remember every little detail of daily life, our minds transfer only limited information out of short-term memory into long-term memory.



What Is OSCAR'S Match™?

The idea of *OSCAR's Match*™ is to match up two numbers hidden at random on the screen. The successful player is the one who can best remember where the numbers are hidden.

Each box on the screen has an identifying letter, and hidden behind each box is a number. That same number will be behind some other box, too. Turn over any two boxes on the screen. If the numbers match, you score a point. If they don't match, the boxes snap shut, and you'll have to try to remember what numbers were in these two locations (and the others you've seen) until your next turn. The game ends when all numbers have been matched. The player with the most matches is the winner.

You also can play *OSCAR's Match*™ by yourself. Try to complete the game in the fewest possible turns.

Techniques to Play the Game

Here are two techniques for improving short-term memory to try, pattern rehearsal and association:

In the first, memorize numbers that are in a pattern, such as the four corners. Also, look for odd or even numbers in a row, or remember several numbers as one large number. For example, if you've seen 4, 7 and 6 in a row, remembering the number 476 may be easier than trying to remember the three separate digits.

In association, link numbers and their letters with easily remembered words and symbols. For example, A-1 is a steak sauce; B-12 is a vitamin; C3 is part of a Star Wars character's name; B4 sounds like the word before.

OSCAR's Memory Practice

Here's a little practice exercise for playing *OSCAR's Match*™. Read the paragraph below once through, trying to lock the important facts into your short-term memory. Then answer the the 10 questions right away, jotting the answers on a piece of paper. Don't look back at the paragraph while you're answering the questions.

> Bob and Betty went to Brian's house last Thursday to play chess. Bob watched while the other two played. After only 5 moves, Brian's dog Checkers knocked the pieces all over the kitchen floor. Betty was angry because she was two pieces ahead. Later, all three friends went to Bob's house, which was six blocks away. Bob's dad, Chuck, was in the den reading a book on baseball, while their cat Charly slept by the four glasses on the brown table. Ben, Chuck's other son, was playing checkers with his sister Beth. Ben just turned 11 and Beth is 2 years older, which makes her the same age as Brian.

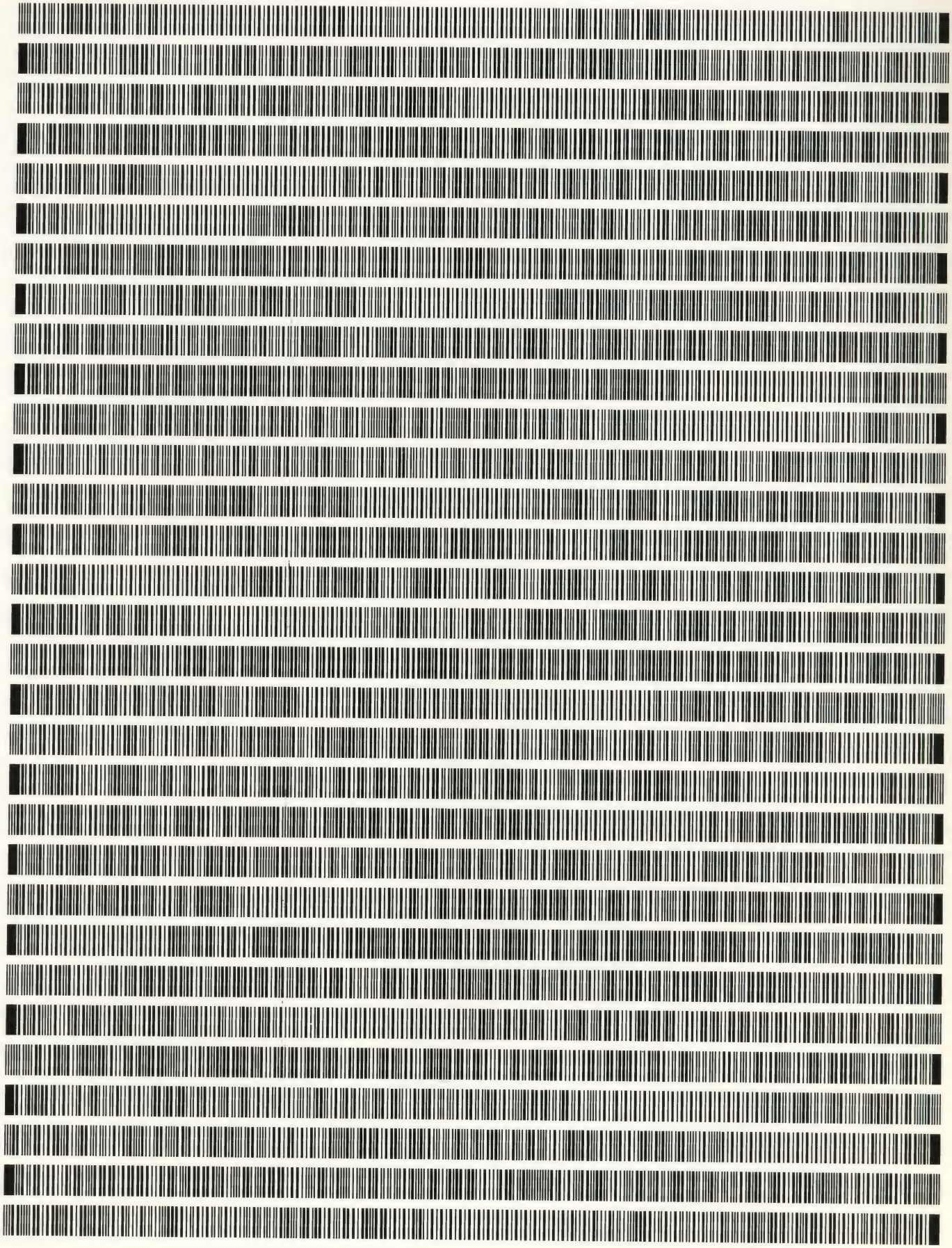
1. Name the three people who were first mentioned.
2. Where was the chess game played?
3. Who was ahead when the chess game was knocked over?
4. How old is Beth?
5. How many glasses are on the brown table?
6. What's the name of the dog?
7. What day is it?
8. How many people have names that start with B?
9. What was Chuck doing?
10. How many blocks is it between the two houses mentioned?

(Check answers below.)

Program Instructions

- Load *OSCAR's Match*™ into your computer with OSCAR. Then type "RUN." (Refer to your User's Manual if you have difficulties.)
- Press 1, 2, 3 or 4 to indicate the number of players.
- Select a skill level — 1 is the easiest, 4 the hardest.
- For each turn, type one of the letters appearing on a box. Examine the number hidden behind the box and choose a second box. If the number hidden behind the second box matches the first, you get a point and another turn.
- You keep your turn as long as you keep getting points. One wrong guess, though, and it's the next player's turn. The asterisk above the scoreboard indicates whose turn it is.
- When *OSCAR's Match*™ is over, the computer will ask if you want to play again. Press "Y" (Yes), or "N" (No).

Here are the answers:
1. Bob, Betty and Brian
2. Brian's
3. Betty
4. 13
5. 4
6. Checkers
7. Thursday
8. 5
9. Reading a book on baseball
10. 6



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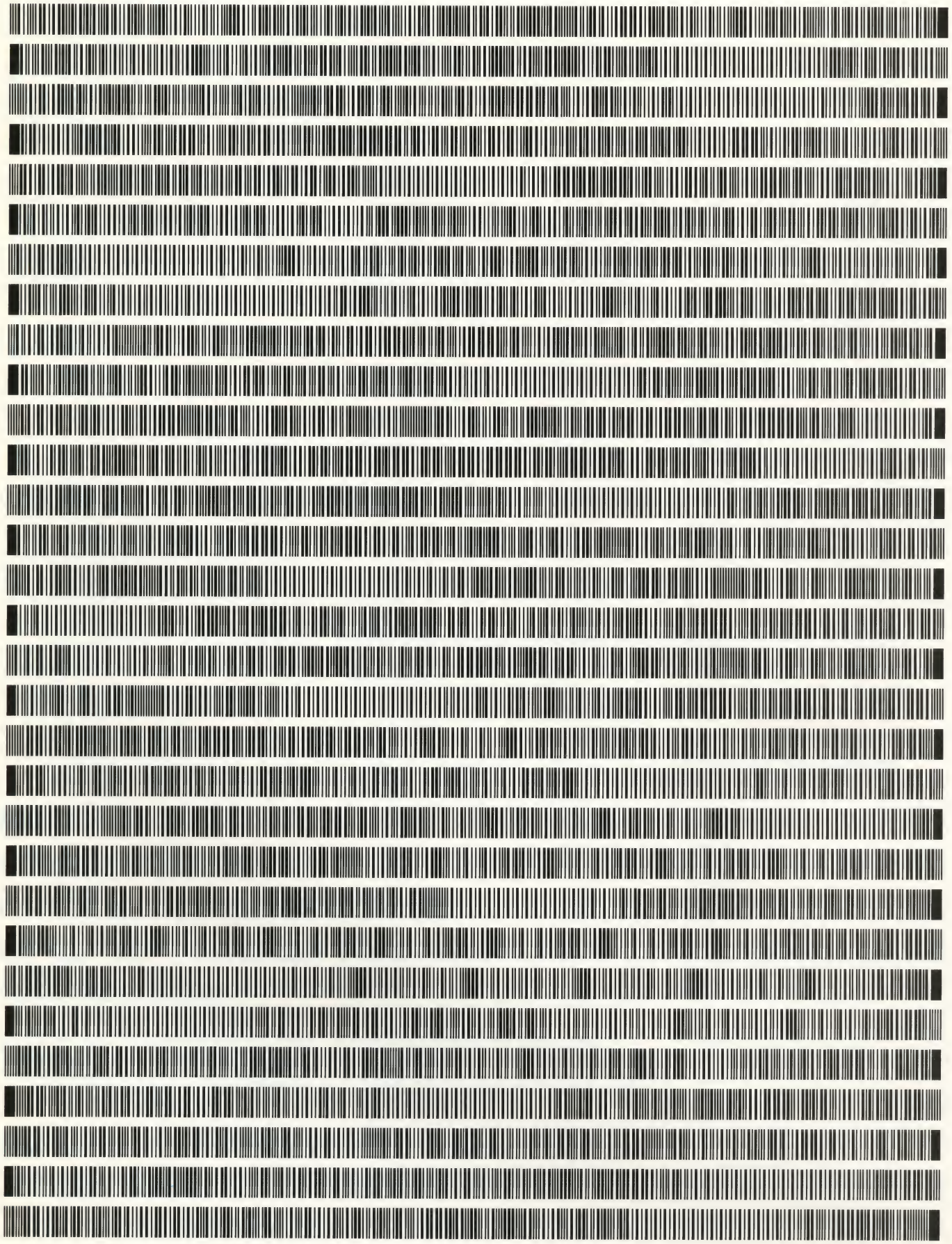

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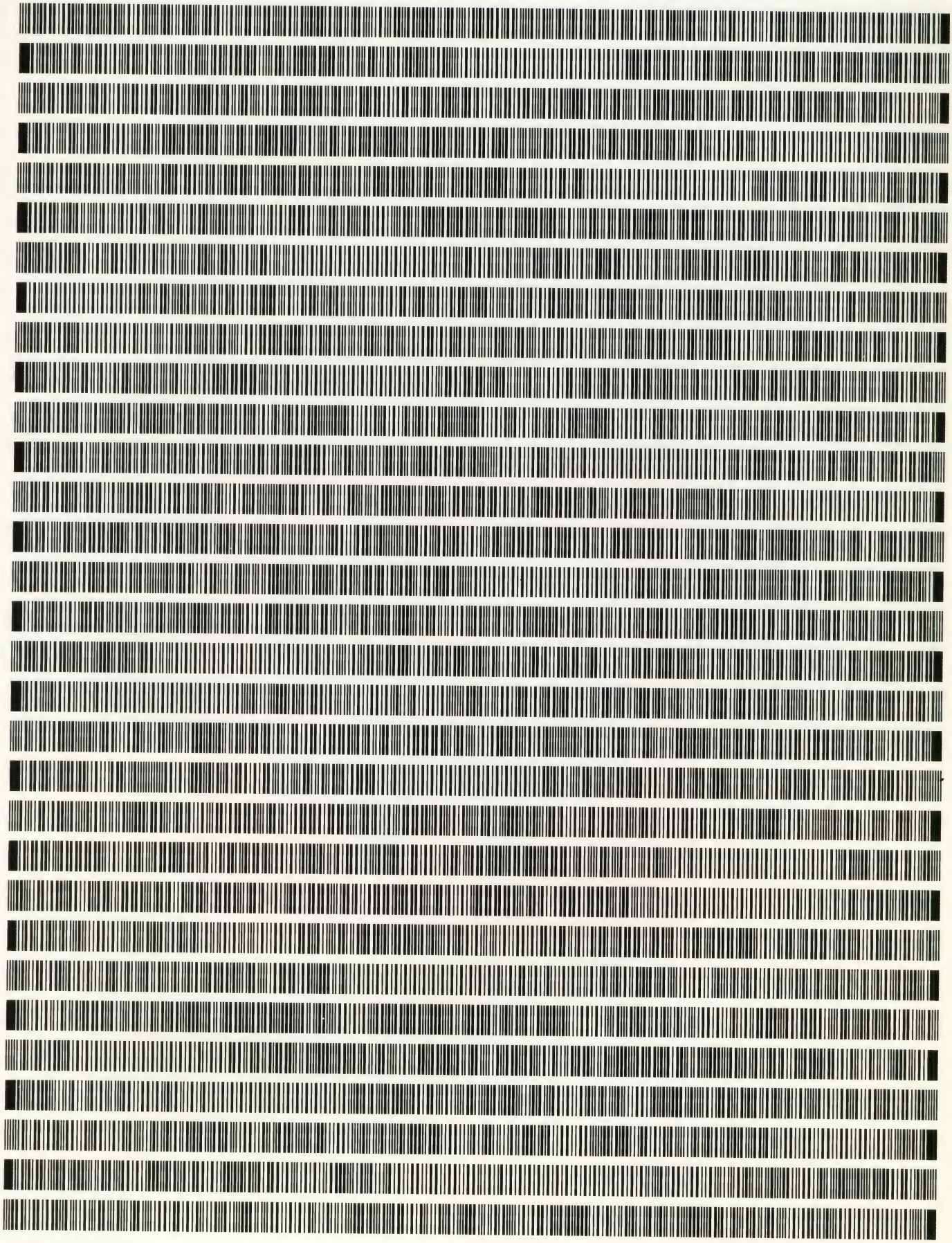

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HOMEWARE

FOR
T.I. 99/4A

PROGRAM Nº.
09960003

FINANCIAL QUIZ

OSCAR checks the pulse of your pocketbook.

Are your family's funds slipping away? OSCAR rates you on how you're currently handling financial matters. Use the quiz for clues to how you can improve your money management skills.

0 39895 55002 4

FINANCIAL QUIZ

QUESTIONS FOR THE FUTURE

As a departure from the normal way of using Databar software, temporarily skip the article that follows. Go right to the Program Instructions after reading this paragraph and load the program into your computer. Why are we asking you to do this? We want you to use your current knowledge in answering the quick quiz. Answer it honestly and then read the article, where we tell you about the process you've just gone through and suggest some other ways to use the program.

What Just Happened?

By running the *Financial Quiz*™ program, you've just glimpsed at many of the vital concepts in smart home money management. You've had to make quick decisions on whether you're currently practicing the concepts or not. The importance of this first exposure to the program is your introduction to the two-tier structure of money management. On one level are the hypothetical **financial planning principles**; one example would be: reduce tax burden. On the second level are the practical applications of those principles, or **modern management techniques**; examples of techniques to reduce tax burden are: investing in tax shelters or using an IRA account. Poor money management often involves using a technique without considering the principles.

Here are the concepts presented in the *Financial Quiz*™.

Financial Plan. If your financial plan is in your head, it doesn't count. Although planning is not a time-consuming task, it is one that demands a written record, either on paper or the computer.

Household Budget. Like a financial plan, a household budget is a task that teaches discipline in money management. A household budget will help you see what areas you're spending too much money on, letting you reset priorities and, if you need help, find better ways of making sure the books balance each month.

Current Net Worth. Calculating your net worth is a relatively simple task that should be done on paper or the computer. The most logical time to revise your net worth is when you are doing the other two discipline tasks above.

Money Market Accounts. This is a Modern Management Technique essential to today's financial climate. The Money Market Account has become a basic investment, offered by banks, brokerage houses and mutual fund companies, because it has the liquidity and safety of a savings account, yet carries a higher rate of return than traditional savings programs.

Life Insurance. The principle behind the technique of insuring your family is basic protection against the unknown. Many families underestimate the coverage they need. Also, many families fail to find the most cost-efficient coverage. Future *Homeware*™ programs will help you evaluate your life-insurance needs.

IRA's. Two principles boost the importance of this relatively new management technique: preparing for retirement and deferring and reducing taxes.

Disability Insurance. Like life insurance, the principle behind this technique is preparing for the unknown. A disabling accident can be as devastating to a family's finances as a death in the family. This technique is the one that can protect you and family members. Of course, most of us are covered under our employer's disability plans, but unfortunately, the coverage isn't enough to take care of us should we be disabled for life. You may want to consider an individual policy.

Monthly Savings Program. To put it simply, it's tough to increase your net worth without putting aside a set amount of funds each month for the future. Just as important is where you invest these funds.

Current Will. This is another technique of the principle of planning for the unknown. Other principles involved include establishing guardians for children and reducing estate taxes.

Setting aside time each week. Finally, we ask the crucial question: Are you including money management in your busy schedule?

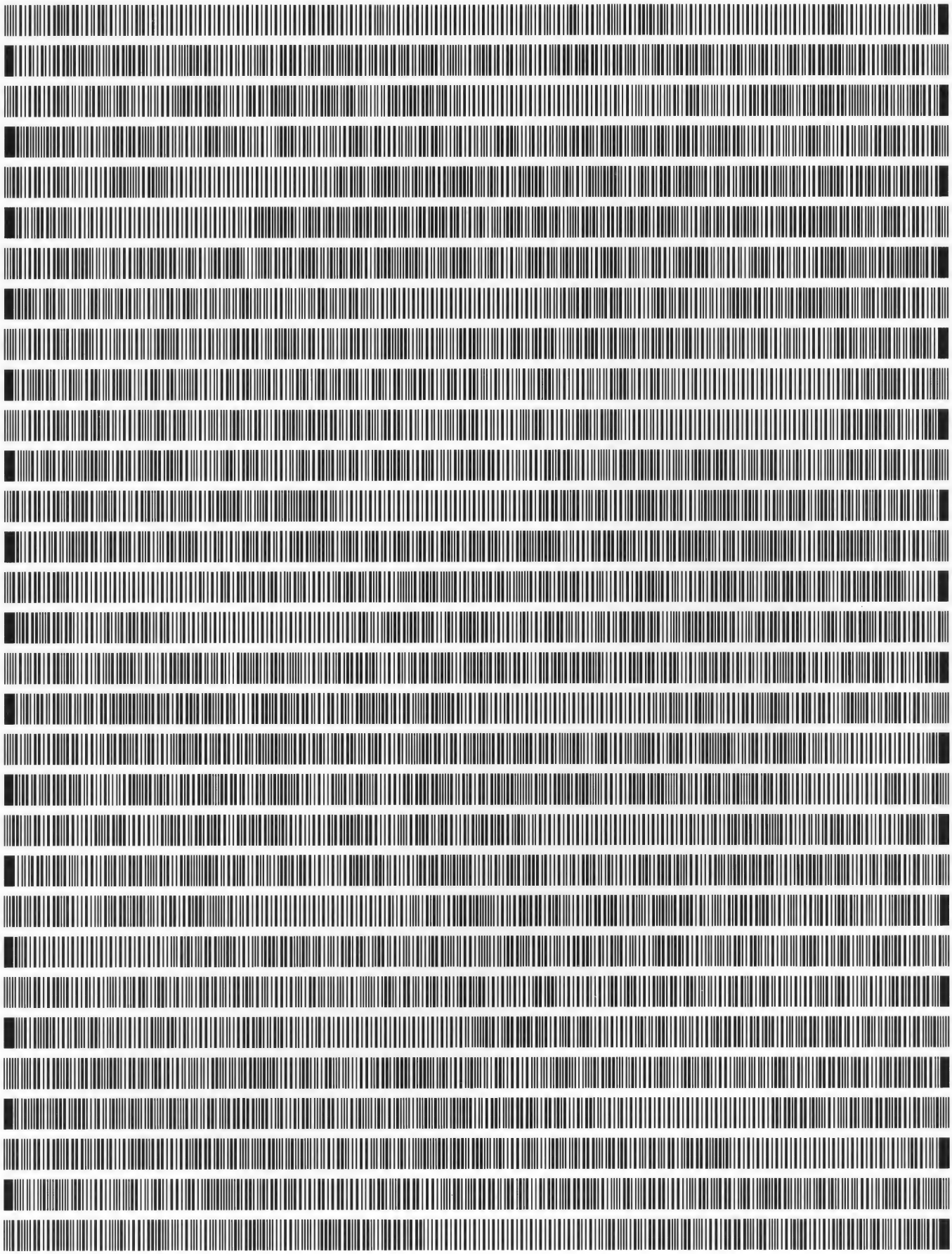
What Now?

It's time to play "what if" with the *Financial Quiz*™. Run the program again and begin changing answers to indicate which steps you may take in the future. See how these changes affect the outcome of the program. One excellent way to begin teaching children about money is to ask them to run the quiz.

Program Instructions

- Load the program into your computer with OSCAR. Then type "RUN." (Refer to your User's Manual if you have difficulties.)
- Answer each question with a "Y" (yes) or a "N" (no).
- Press any key to find out your basic financial planning savvy when the computer says, "LET'S CHECK THE RESULTS."
- Press any key again to get the verdict on your modern money management techniques.
- Press any key again for an evaluation of your general financial health.
- Decide whether you want to retake the quiz. See how changing one answer can change your rating. To continue, push "Y;" otherwise, push "N."

This publication is designed to provide accurate and authoritative information in regard to the subject covered. It is sold with the understanding that neither the publisher or the author is engaged in rendering financial or other professional advice. If financial or other professional advice is required, the services of a competent professional person should be sought. (Paraphrased from a Declaration of Principles jointly adopted by a Committee of the American Bar Association and a Committee of Publishers and Associates.)



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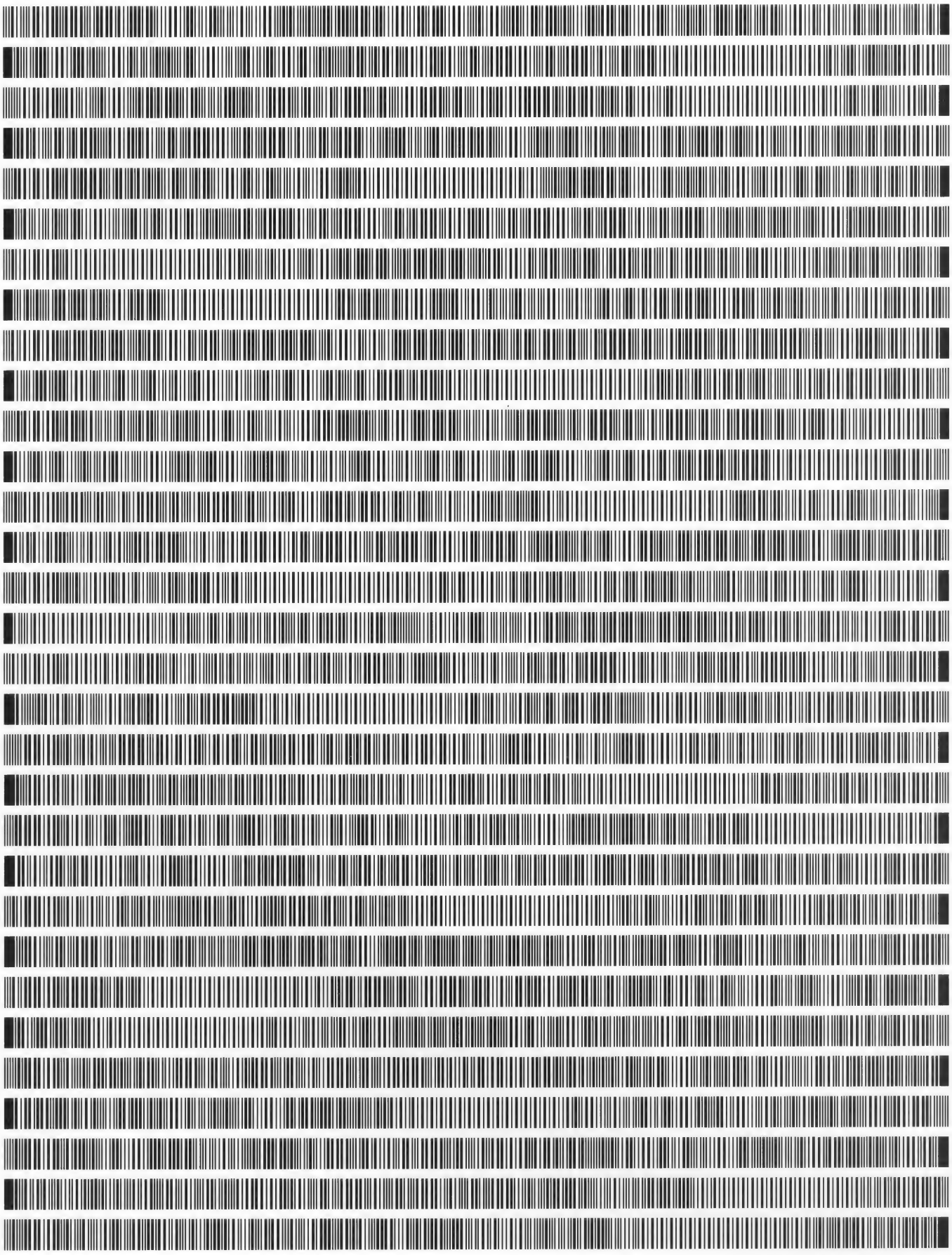

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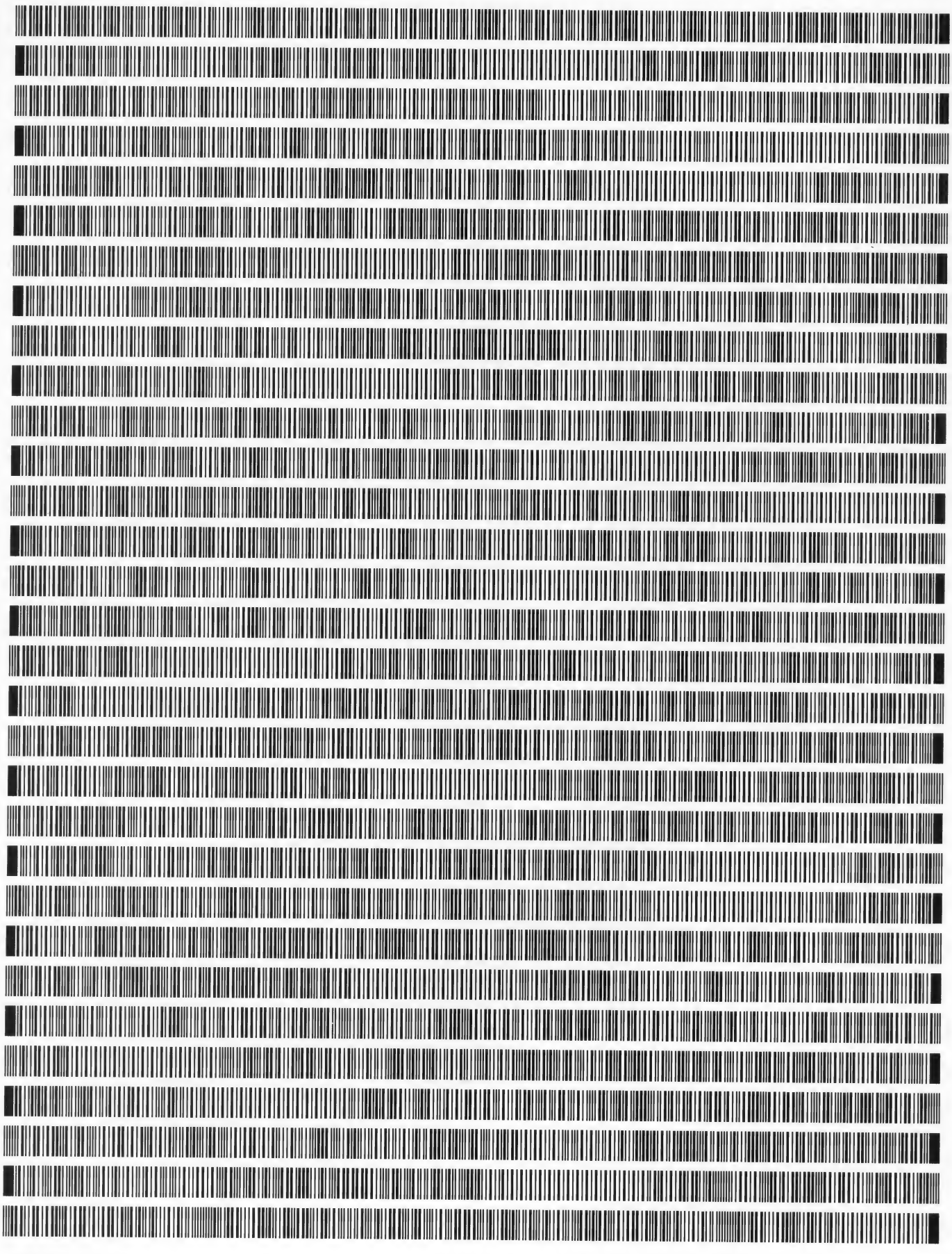

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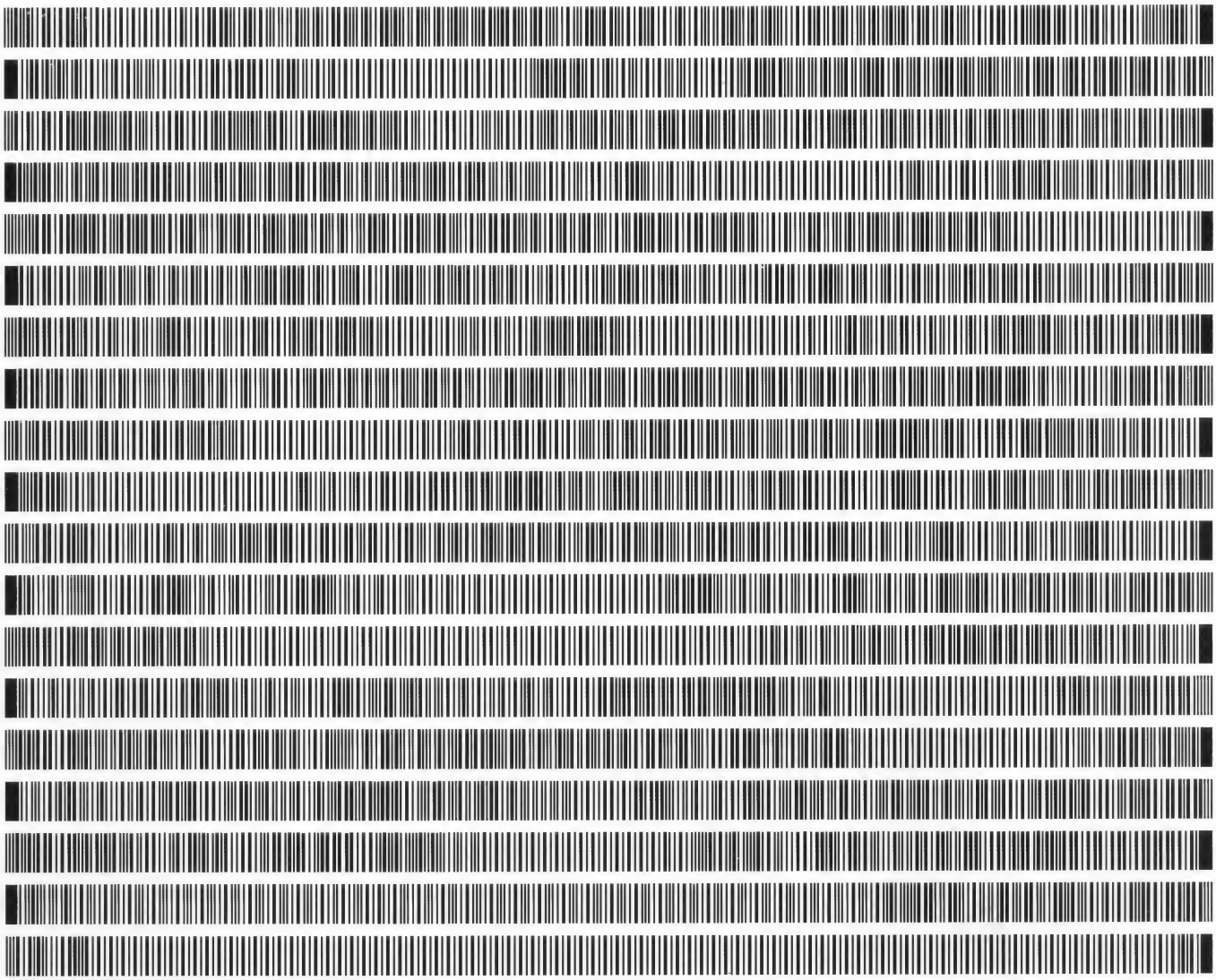

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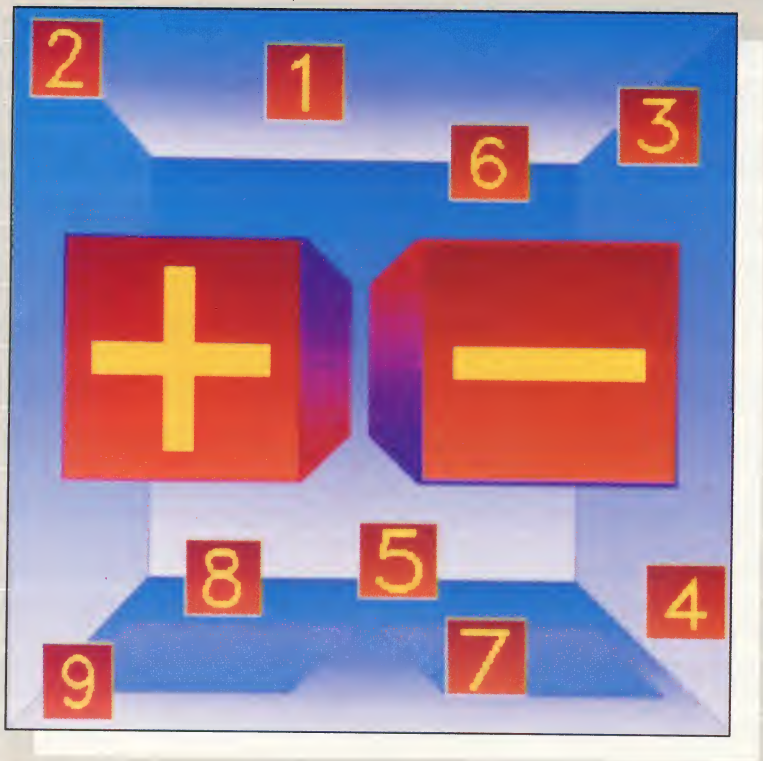
C L A S S W A R E

FOR
T.I. 99/4A

PROGRAM Nº.
09920003

MATH CHALLENGE 1

Pit your mathematical skills against the computer or a friend.



Math Challenge 1 — a game for kids in grades one to four — flashes addition and subtraction problems in three skill levels on the computer. The first one to answer gets the points — if the answer's right.
Competitive fun and learning.

0 39895 15002 6

MATH CHALLENGE 1 / DATABAR SOFTWARE

MATH CHALLENGE 1

SHARPENING THE MIND FOR MATH

Even though computers and calculators today do much of the math we used to do ourselves, we still need to do numbers in our heads. The skill of figuring simple math problems without pencil, paper or keyboard is important to doing well in school and out of school.

Of course, even when we're using paper or a calculator to do math, figuring in our heads is essential to speeding the process. For instance, you have a list of more than 100 single-digit numbers to add up with a calculator. To do the task quickly, you can scan the list, adding groups together and entering the totals in the calculator. If you spot two 4s and two 6s in a row, you can add these to 20 in your head and then enter a 20 in the calculator.

To Parents:

Math Challenge 1™, the first activity in the *Classware*™ series, is a fast-moving fun numbers game. Because of its three skill levels (single, single/double and double/double digit problems), children can use this program for developing their skills as the new skills are introduced in school. Playing alone or against each other, children will learn to quickly add and subtract in their heads at level one, then progress to more difficult problems in levels two and three. Play *Math Challenge 1*™ with your kids and you'll develop some mental nimbleness, too.

Since the problems that the players are asked to solve in *Math Challenge 1*™ change at random, you can set up the program as a 10- or 15-minute daily drill without boring your child with repetition. Of course, you may need to first explain the addition and subtraction tables he or she will need to know. You may also need to introduce the concept of *places* — 10s, 100s — and of carrying numbers for the upper skill level.

Use *Math Challenge 1*™ for children 6 or older — old enough to grasp the concepts of addition and subtraction and their practical uses. After your child gains confidence in math skills using level one, encourage him or her to master the problems offered in the next two levels.

To use *Math Challenge 1*™ as a game for two youngsters, let your child invite a friend over to play, and subtly supervise the game to make sure the kids are playing it correctly and learning from it. Throughout the game, encourage both players, giving them learning tips as they play. Children learn better when you make learning fun for them.

To enhance the skill-building in math that *Math Challenge 1*™ provides, look for other opportunities to test your child in a fun manner. When you're in the car with the youngster, ask him or her to quickly add the sums of numbers on road signs or billboards. At the breakfast table, ask your child to add the numbers on the nutrition charts on cereal packages. In the grocery store aisle, ask the youngster to total two product prices or subtract two to find the savings.

To Math Challenge 1™ Players:

Get ready to see how well you can add and subtract. Decide which player is number 1 and which player is 0. If you are Player 1, you will hold your finger above the 1 key, near enough so you can push it quickly when you know the answer. Player 0 will push the 0 key when he knows the answer. Whenever a new problem appears on the screen, the first player to push his key gets to tell the computer the answer. A correct answer wins a player two points:

Don't be too quick to answer! Make sure you know the right answer before pressing your key, then wait for the computer to ask for the answer before typing it in. You may need to use pencil and paper to solve Level Three problems before answering the problems on the computer. A wrong answer counts against you and adds another point to your opponent's score.

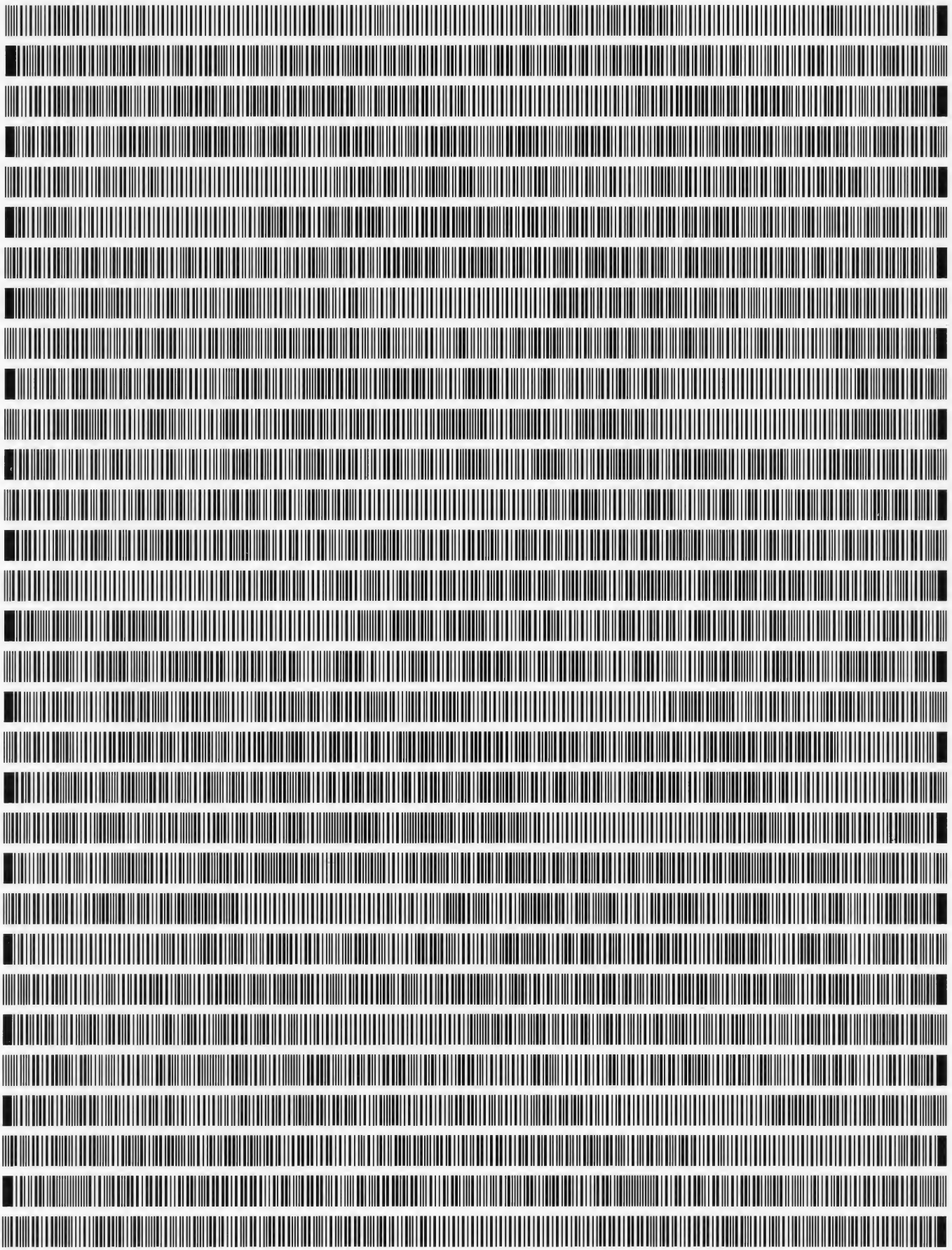
If you are playing alone, using *Math Challenge 1*™ as a drill, you can use either the 1 or 0 key — but don't use both.

There are 10 problems in each round. You choose the number of rounds for a game. The computer will tell you when each round ends, and you have the choice of continuing to pile up the score with a new round, starting a new game, proceeding to the next skill level, or ending the game. If you want to change the kind of problems you're doing — from addition to subtraction, for instance — you must start a new game and make a new selection.

The computer will keep score for you, by the way. You don't have to do it in your head.

Program Instructions

- Load the program into your computer with OSCAR. Then type "RUN." (Refer to your User's Manual if you have difficulties.)
- Choose the kind of problem you want to solve — addition, subtraction or a mixture of both kinds. Then select the skill level — single digit, single/double digit or double/double digit problems. The game begins automatically.
- Quickly press your key when you think you know the answer to the first problem. The first player to press the key gets to play.
- Type in your answer when the screen says, "ANSWER NOW!" Do it without delay to win two points, for if you wait too long the computer awards your opponent a free point. Watch carefully! The computer will not accept your answer before it asks for it, even if you type the right keys.
- Type "Y" (yes) at the end of each round to continue the game and keep the score mounting. Type "N" (no) to halt the game.



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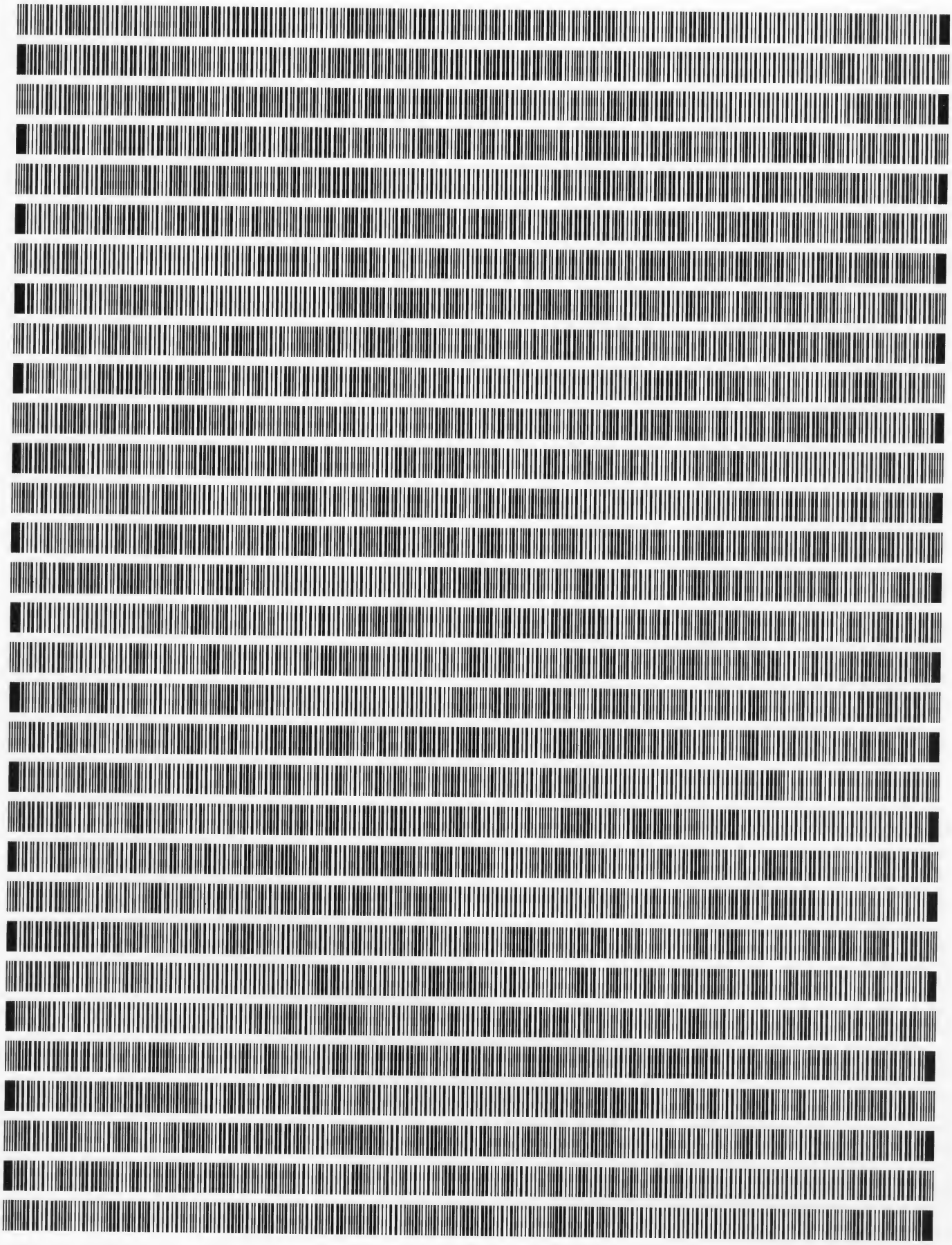

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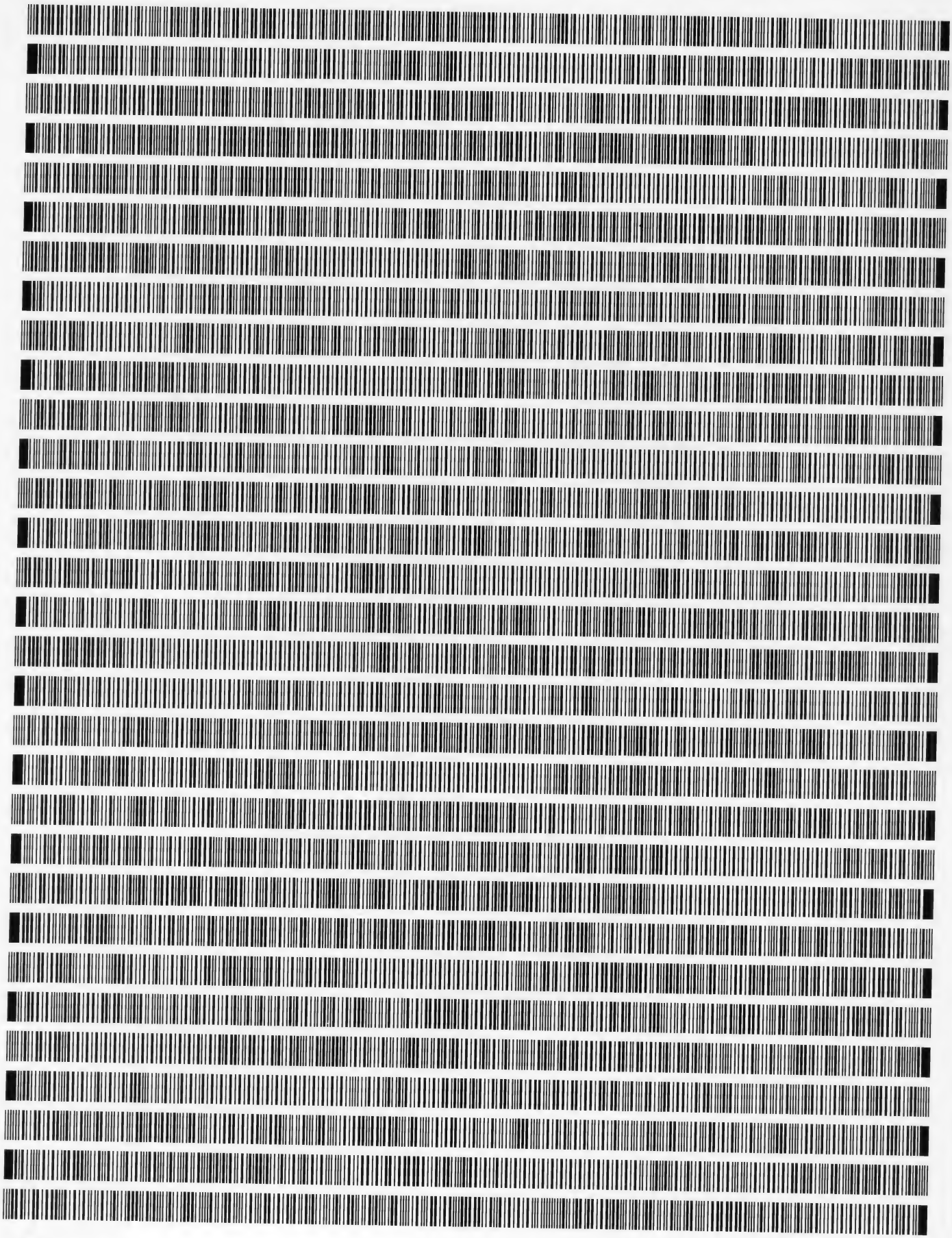

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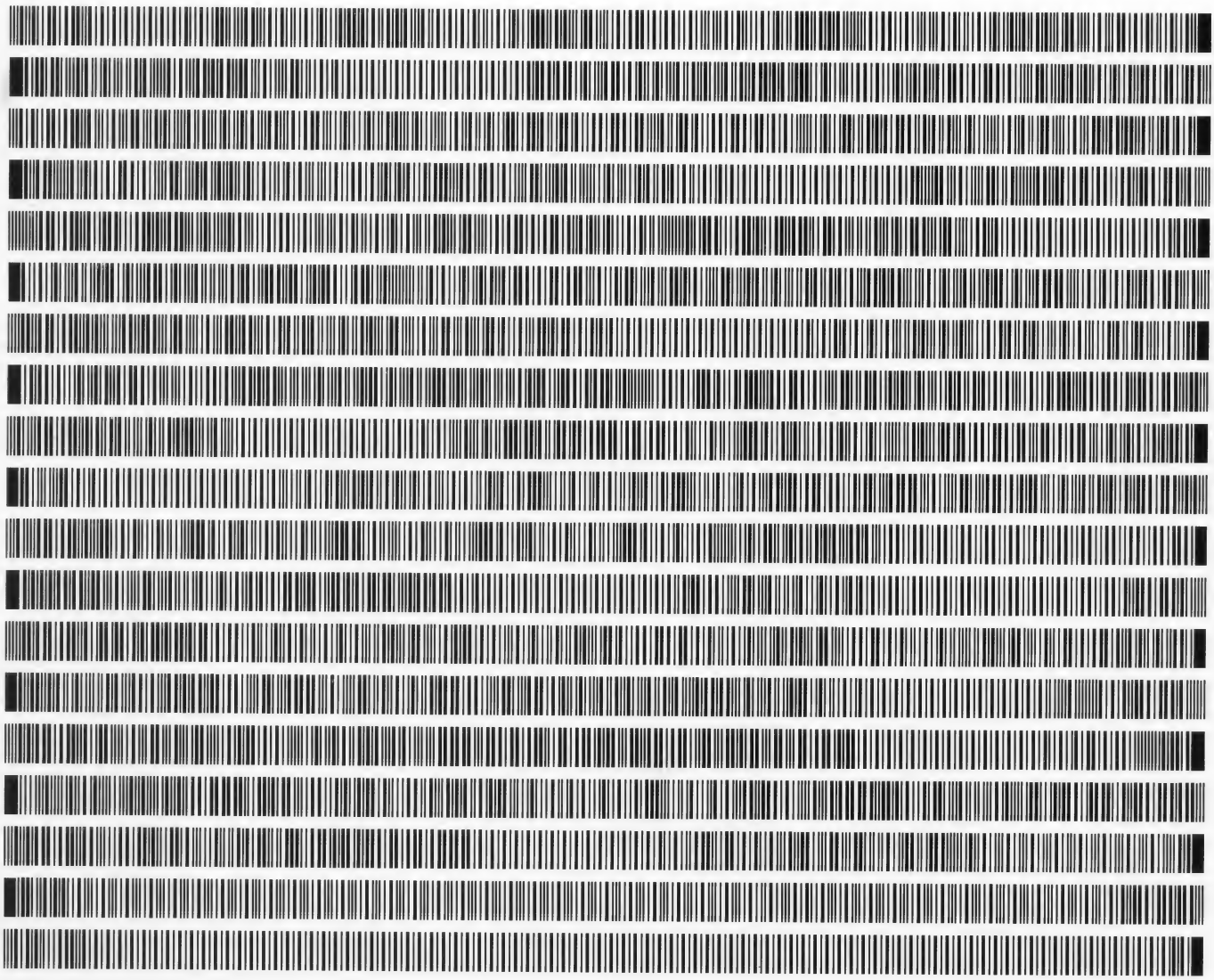

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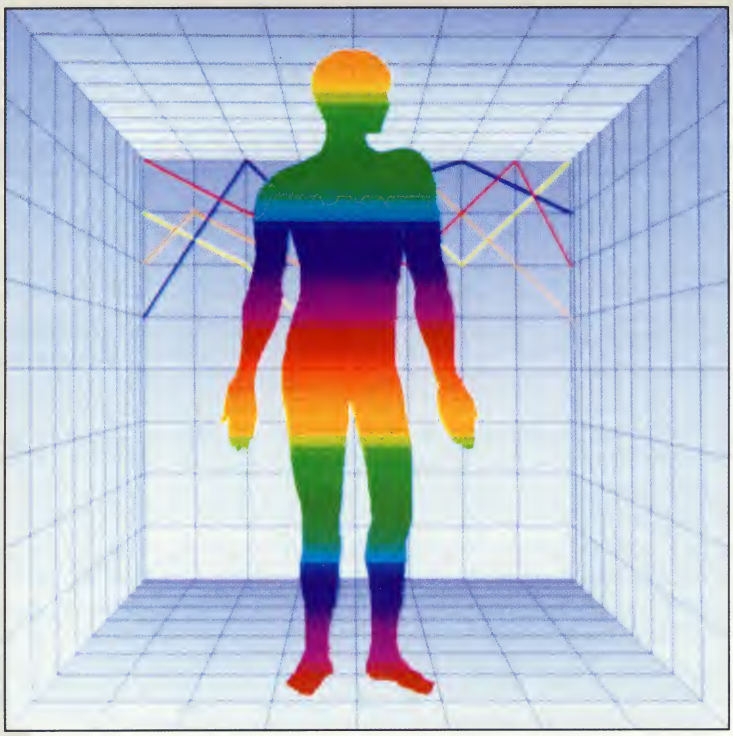
H E A L T H W A R E

FOR
T.I. 99/4A

PROGRAM Nº.
09910003

HEALTH ASSESSMENT

How are your current health practices affecting your life expectancy?



Answer the crucial questions for building a healthy life-style. Can you and your family add to your life expectancies with new health habits?

0 39895 05002 9

HEALTH ASSESSMENT / DATABAR SOFTWARE

HEALTH ASSESSMENT

LIVING LONGER

How we live almost always determines how long we live. A mountain of statistics bears that out.

According to the statisticians, the average length of life today is 73 years. Compare this to only 47 years, the average at the turn of this century. We've added 26 years to the average since 1900 by arresting many infectious or acute diseases like polio, smallpox and tetanus, and by other means.

Will we add another 26 years to the average by 2060? Researchers think not. Even though there are chronic diseases like cancer and heart disease that may be less and less prevalent in the future, the impact of this on the average length of life for all of us probably will not be dramatic. Why? Because the nature of the human body is such that our cells will only regenerate so many times, and we are approaching the maximum fixed average length of life now.

So how do we alter our own course to insure we get the maximum length of life our bodies will give us? The obvious answer is to alter the way we live. Consider this: One recent study indicates that 78 percent of the nation's hospital patients could have stayed home if they'd followed better health practices. Another study, this one in Massachusetts, indicates that 43 percent of us eat too much, 33 percent still smoke, 28 percent don't exercise at all, and 12 percent misuse alcohol.

With this *Health Assessment*™ you can evaluate your own health behavior and how it affects your potential for long life.

Health Assessment™ is based on a 1973 study by Nedra Belloc and her colleagues at the Human Population Laboratory of the California State Department of Public Health. Belloc and colleagues identified seven health habits that influence our chances of living a long, healthy life. They included: sleeping seven to eight hours a night; eating a full breakfast each day; limiting between-meal eating; maintaining ideal weight; scheduling regular exercise periods each week; limiting alcohol consumption to two drinks a day; and not smoking.

Health Assessment™ lets you make use of one of the strongest features of your home computer — the ability to play "what if" games. Once you've run the program, run the questions again and change one of your health habits to see how this affects your life span.

Here are the habits that may have the greatest impact on your results.

Smoking: In our quiz, answer yes to the question, "Do you smoke?" if you smoke one or more cigarettes a day.

Exercise: In our quiz, we consider "regular exercise" to be activities you engage in several times a week.

Sleeping: In the Belloc study, men who slept eight hours a night did better than those sleeping less. Women who slept seven hours a night did best, but sleeping a little less wasn't as bad for women as for men.

Desirable Weights

(Medium Frame)

Desirable weights for men 25 years of age and over*

Height with shoes on (1-inch heels)

Feet	Inches	5% Under	Median Weight	20% Over
5	2	117	124	148
5	3	121	127	152
5	4	124	130	156
5	5	126	133	160
5	6	130	137	164
5	7	133	141	169
5	8	138	145	174
5	9	142	149	179
5	10	145	153	184
5	11	150	158	189
6	0	154	162	194
6	1	158	167	200
6	2	162	171	205
6	3	167	176	211
6	4	172	181	217

Desirable weights for women 25 years of age and over*

Height with shoes on (2-inch heels)

Feet	Inches	5% Under	Median Weight	20% Over
4	10	96	102	122
4	11	99	104	125
5	0	102	107	128
5	1	105	110	132
5	2	107	113	136
5	3	110	116	139
5	4	114	120	143
5	5	117	123	148
5	6	121	128	153
5	7	125	132	158
5	8	129	136	163
5	9	133	140	167
5	10	136	144	172
5	11	140	148	177
6	0	144	152	182

*Weight in pounds (in indoor clothing)

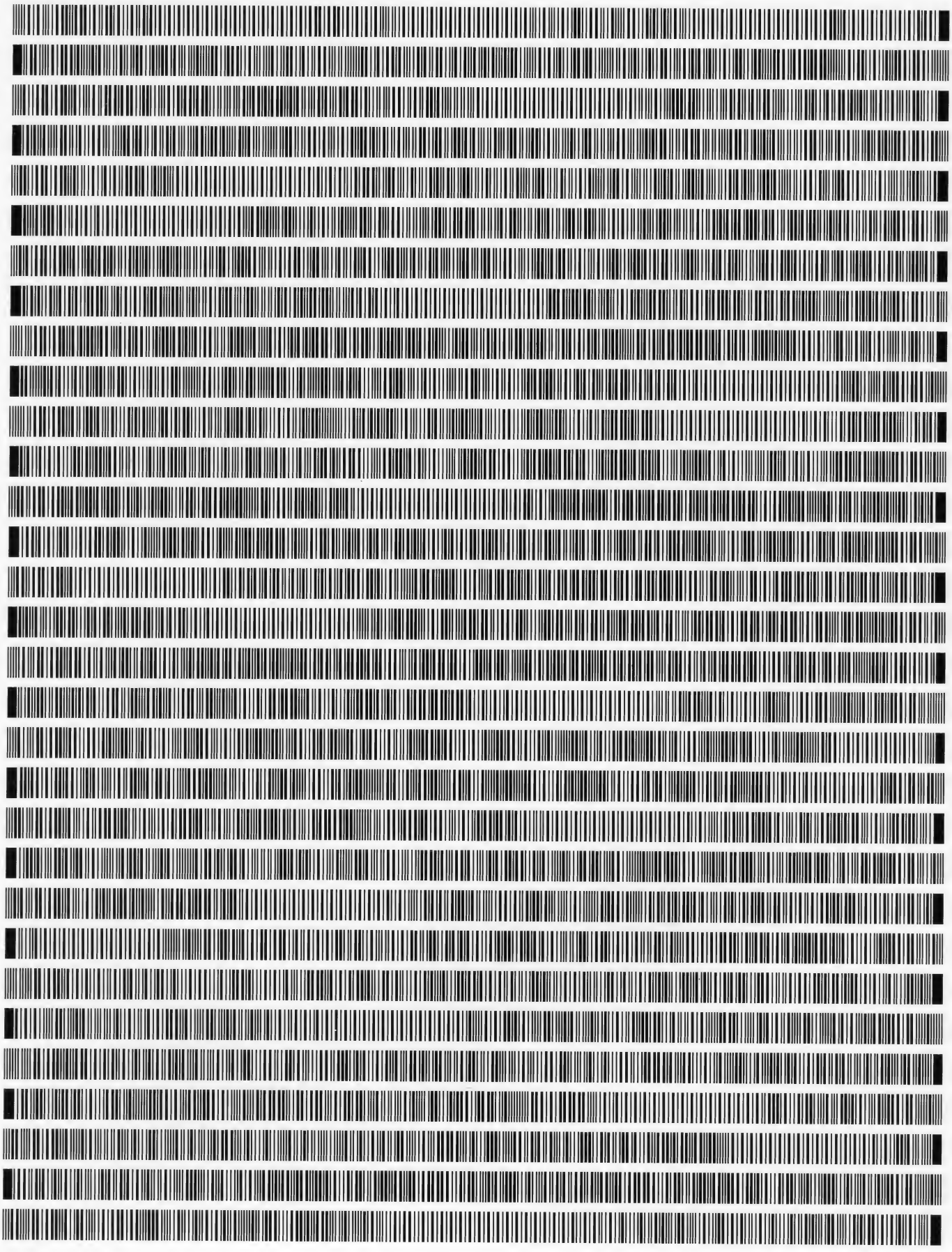
Program Instructions

- Load the program into your computer with OSCAR. Then type "RUN." (Refer to your User's Manual if you have difficulties.)
- Indicate your sex by entering "M" or "F".
- Answer questions by pressing "Y" (yes) or "N" (no).
- Use the accompanying tables when the computer asks about your weight.
- Run the program again after the computer has figured out how much your lifestyle has stretched (or shrunk) your life expectancy. Simply change one answer to see how any single factor can affect you.

Databar Magazine wishes to thank Nedra Belloc, *The Journal of Preventive Medicine* and Academic Press, Inc., for their support in preparing *Health Assessment*™. Our thanks also to Metropolitan Life Insurance Co. for the use of its weight tables.

This publication is designed to provide accurate and authoritative information on the subject covered. It is sold with the understanding that neither the publisher nor the author is engaged in rendering health, medical or other professional advice. If health, medical or other professional advice is required, the services of a competent professional person should be sought. (Paraphrased from a Declaration of Principles jointly adopted by a Committee of the American Bar Association and a Committee of Publishers and Associates.)

HEALTH ASSESSMENT™
HEALTHWARE™



TEXAS INSTRUMENTS 99/4A

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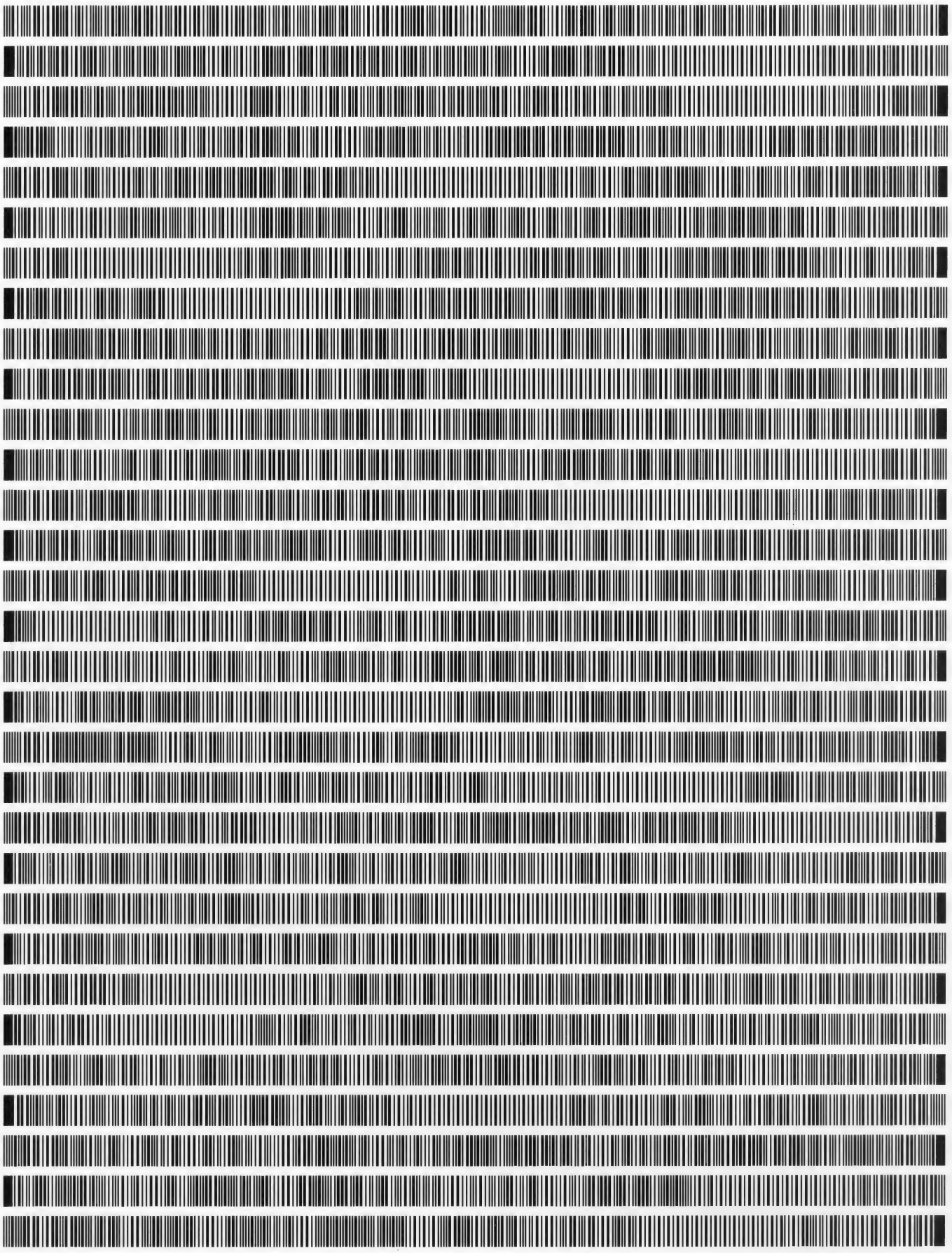

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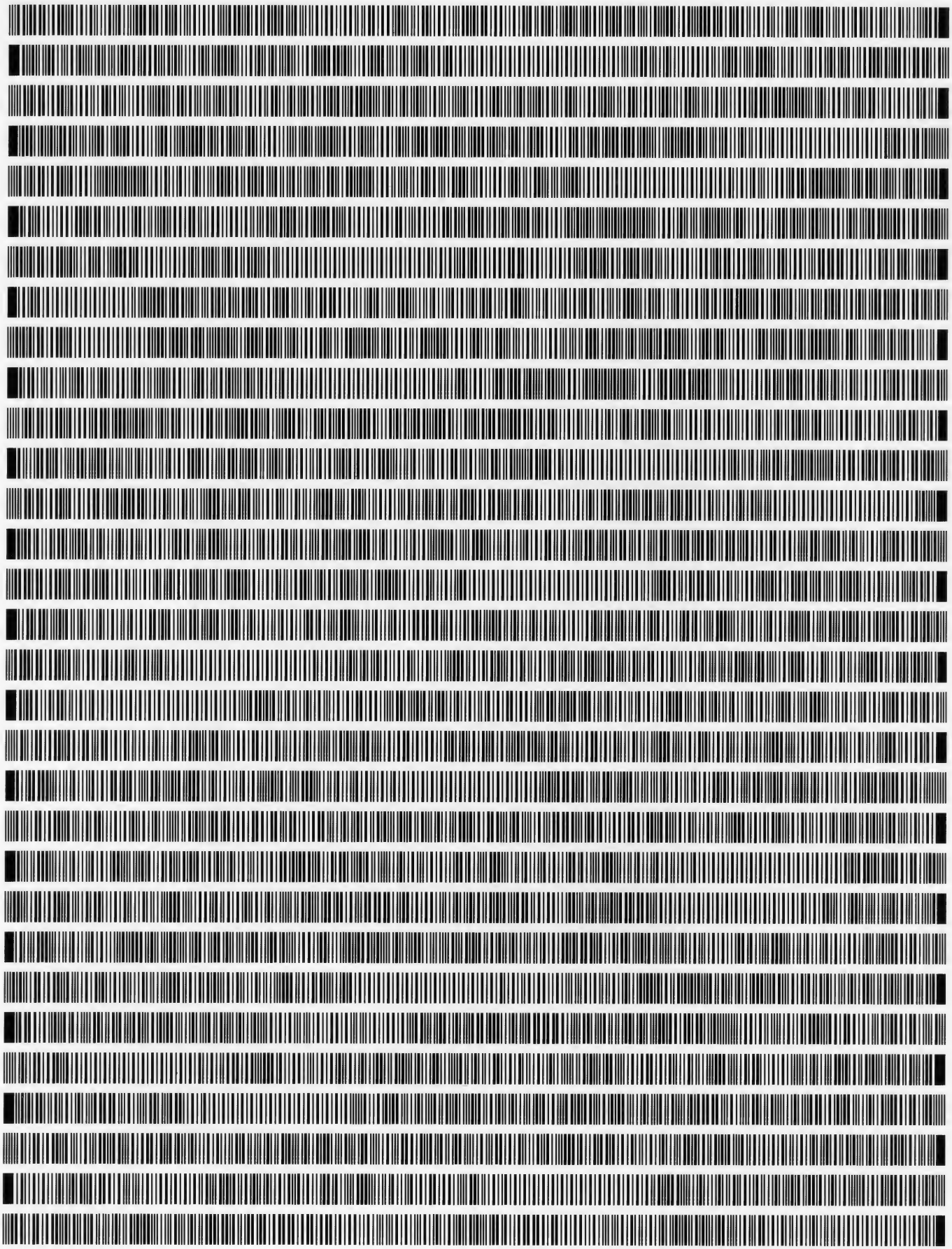

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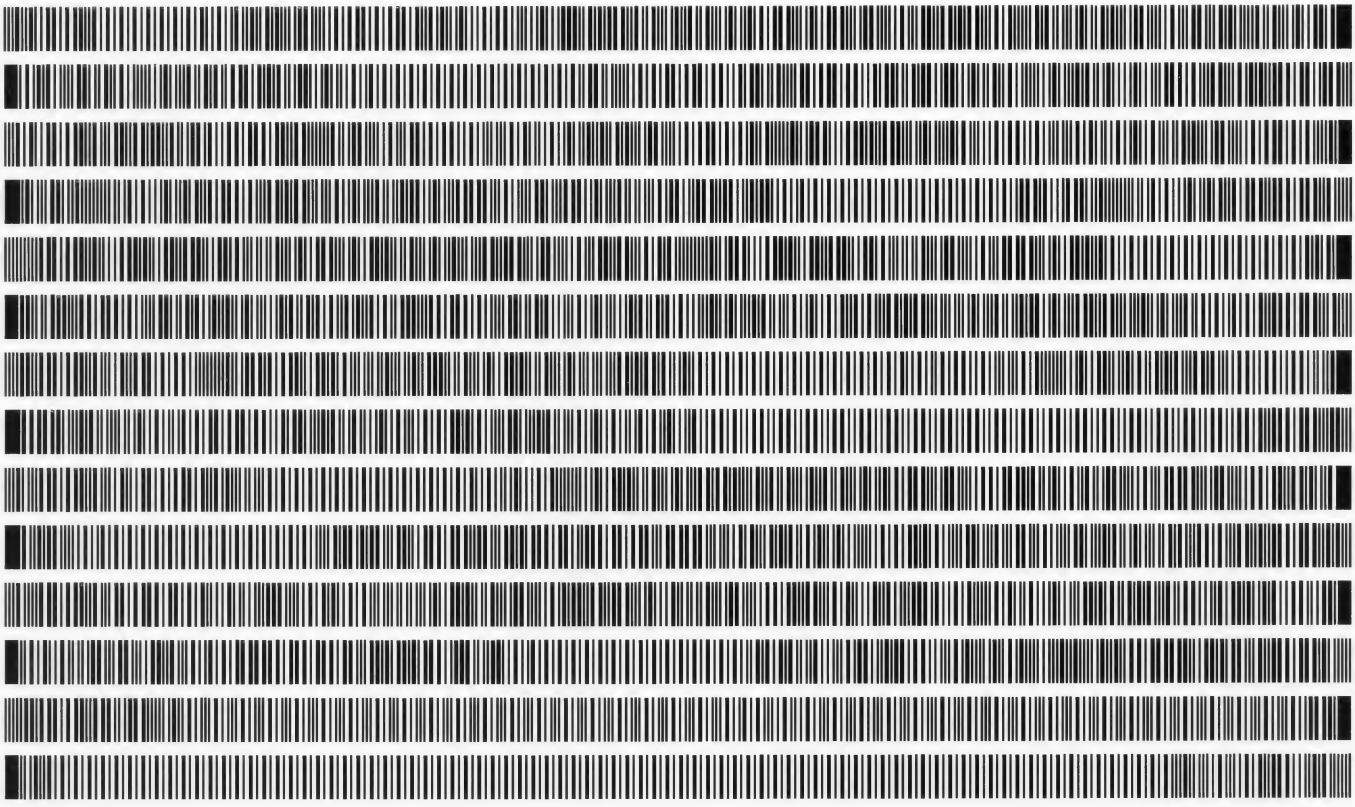

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L E G A L W A R E

FOR
T.I. 99/4A

PROGRAM Nº.
09980003

THE LAW AND YOU

A look at how laws affect your daily activities.

What kinds of law come into play when you drive to work or school and park your car? OSCAR has a quick quiz to help you examine these activities and others to find out.

0 39895 75002 8

THE LAW AND YOU

LOOKING THROUGH A MAGIC MIRROR

Rule by a written set of laws, agreed to by those governed, has always been one of the things that distinguishes civilized people from contemporary barbarians.

Chief Justice Oliver Wendell Holmes likened our body of laws to "a magic mirror, wherein we see reflected not only our own lives but the lives of all men that have been."

In America, the law pervades our lives — we are born, educated, mated and put to rest according to laws. Yet most of us know so little about the law. Our "legal training" usually comes from Perry Mason television reruns and the newspapers' crime-and-punishment beat.

Nevertheless, we *must* know something about the law, just to survive. As one legal expert said, "Law is the one subject that interacts in everyone's life, every day of life, and even after death."

Legalware™ and the Law

Legalware™ is designed to provide the needed practical information about the law and how to use it. *Legalware*™ programs let you briefly examine specific areas of the law. The quick and easy activities of the programs will help you develop your understanding of the law and your skills in dealing with it every day. Further, *Legalware*™ may challenge your attitudes and feelings about the law.

For example, one case study that will appear in *Legalware*™ will explain how a confession to a crime may, in some cases, be ignored by the court, thus letting a defendant go free even though he has admitted guilt. *Legalware*™ will provide challenging information and exercises on topics such as this so you can become informed enough to participate in your government and understand the meanings of justice and equality.

How Laws Affect You

For this first installment of the *Legalware*™ series, called *The Law and You*, let's examine the differences between criminal law and civil law.

Generally, criminal law regulates the conduct of an individual and provides punishment for non-conformance. That punishment can be a fine, jail or both. In a criminal complaint, it will always be "The People (or The State) versus (somebody)," which means the state or federal government is the complainant, or as lawyers say, the prosecutor.

In civil law, it's almost always "(Somebody) versus (Somebody Else)." That is, civil law deals with relationships among individuals. As used here, individuals *can* be companies or even governmental bodies.

Generally, civil laws either can compensate individuals for harm from others or protect from harm. Compensations from civil law cases are called damages. Civil law cases that protect result in orders, either an order to do something or an order that forbids something. For example, the civil law of contracts may order a person to follow through on an agreement. In addition, some contract laws may order the person to pay damages. It's also important to know that no one can be sent to jail for a violation of civil law.

Sometimes a situation can involve both criminal and civil law. In a fraud case, for example, you can sue the perpetrator to recover any money you've lost (civil law), *and* you can file a complaint with the appropriate authorities to have them take action against the person (criminal law). For example, a person who drives a car while under the influence of alcohol can face both a criminal consequence (loss of liberty and a fine) and a civil consequence (damages) for the injuries to person and property that may have occurred.

Other Rules

Aside from formal laws adopted by governments, there are other rules we must live by — rules laid down by parents, employers, regulatory bodies and the like. Not real "laws," but just as important.

Try *The Law and You* to determine whether you understand the differences and to look at some of the kinds of laws that have an impact on your home, your family and all your daily activities.

Program Instructions

- Load the program into your computer with OSCAR. Then type "RUN." (Refer to your User's Manual if you have difficulties.)
- Type your name, hit RETURN or ENTER.
- Read the first daily activity and the law involved, and decide what kind of law it is. If you're right, a second law for the activity will appear. Again, choose the proper law. If you are incorrect with any choice, the computer will tell you to TRY AGAIN.
- After the final question, type "Y" (yes) if you want to review the activities and laws once more, "N" (no) if you don't.

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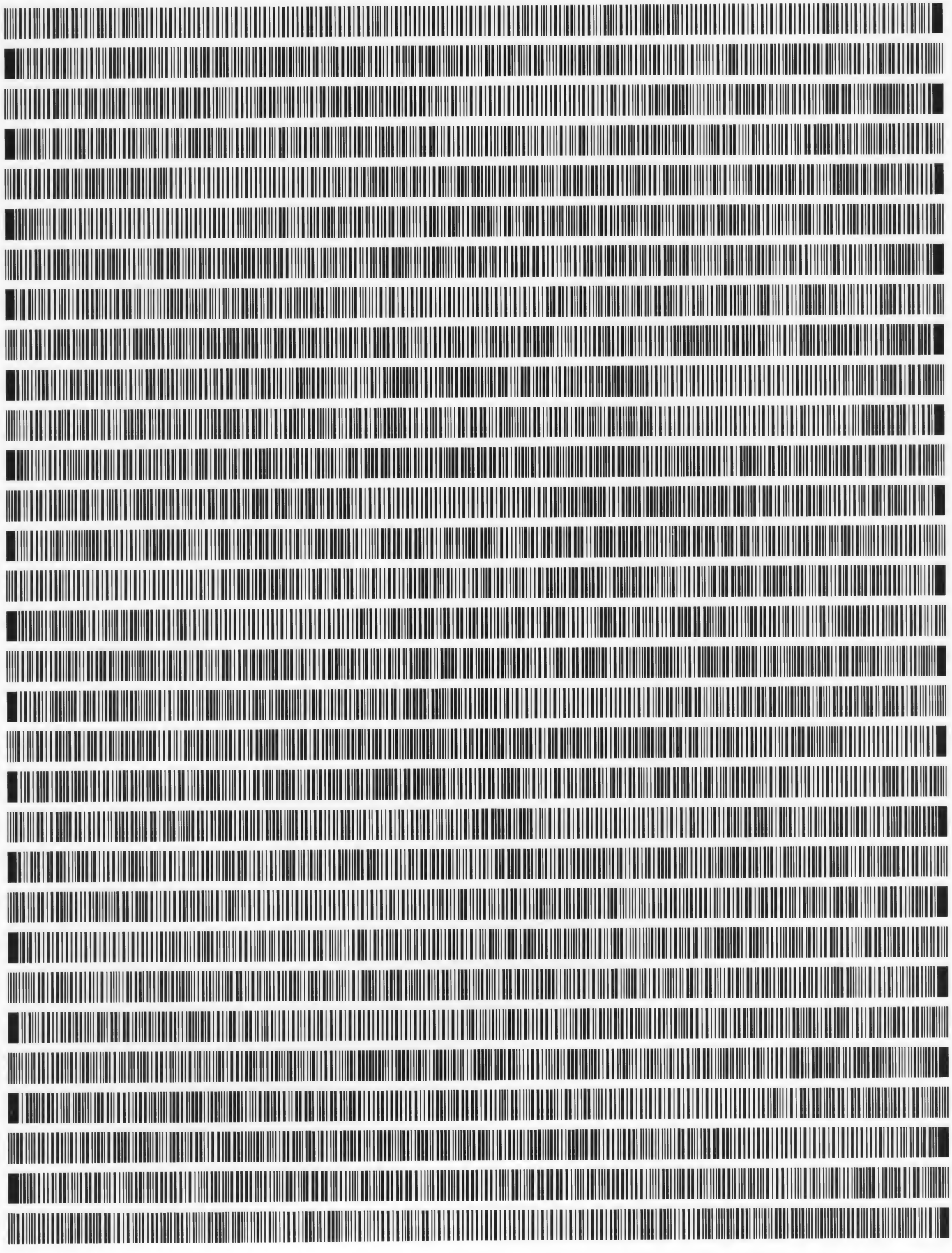
THE LAW AND YOU
LEGALWARE™



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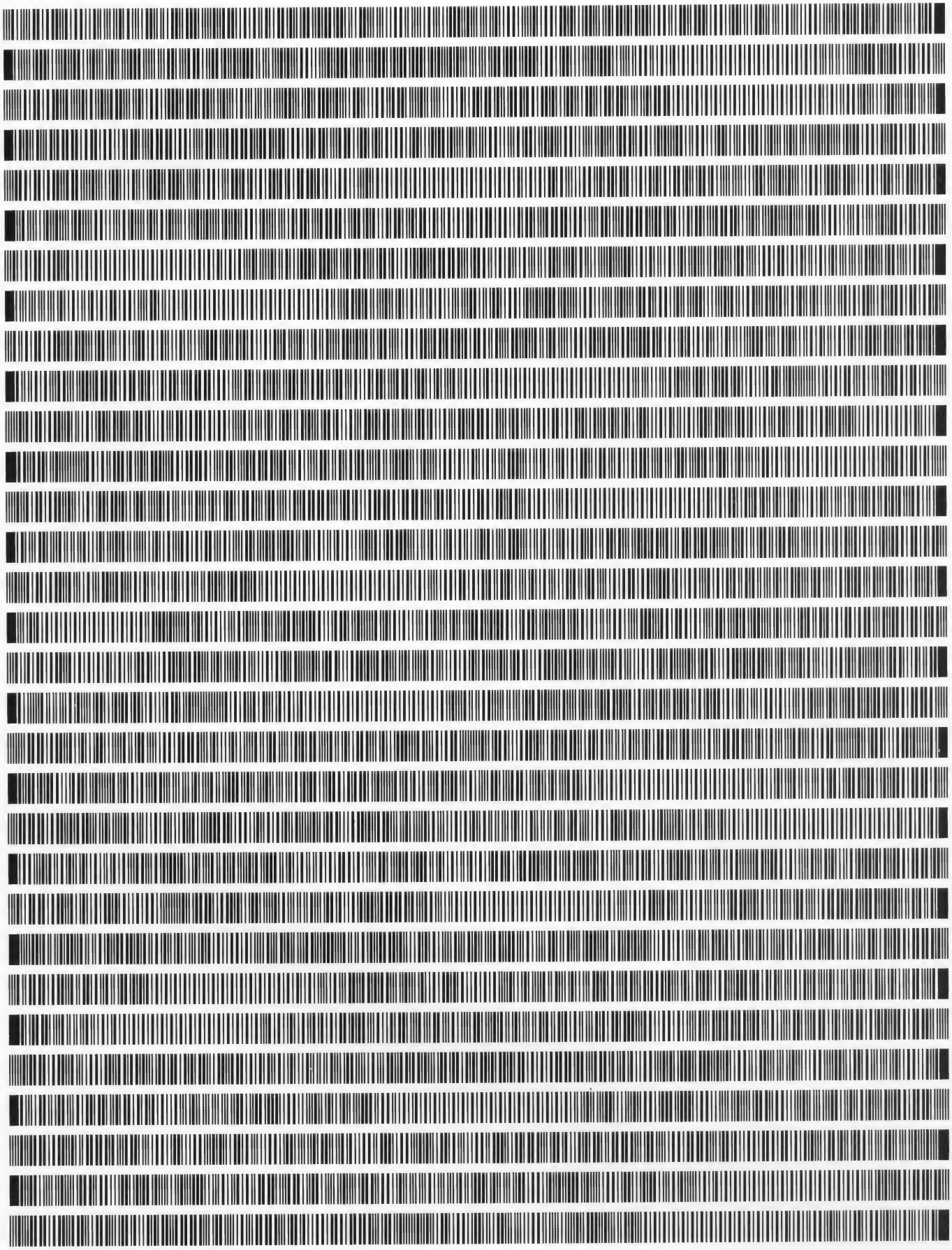

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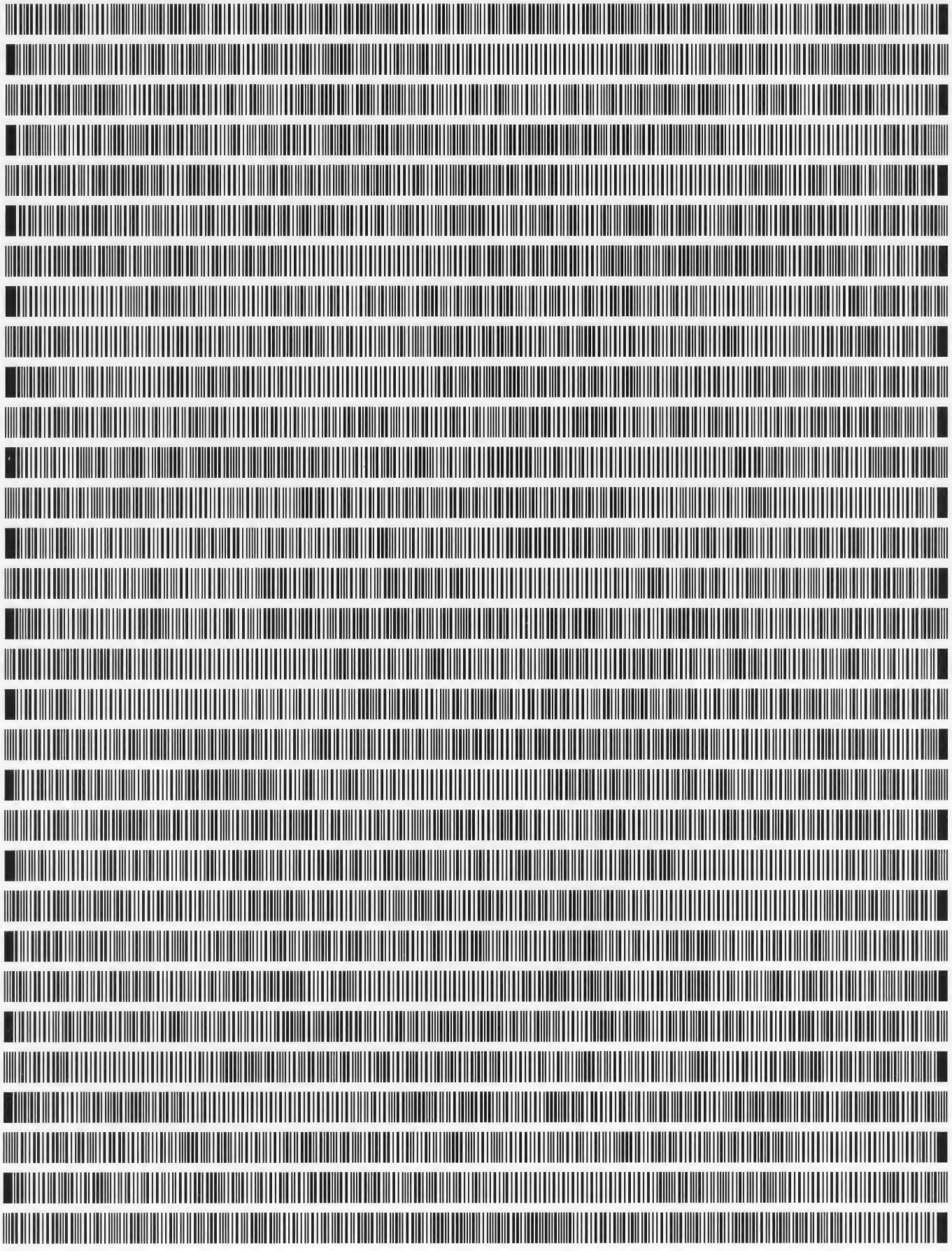

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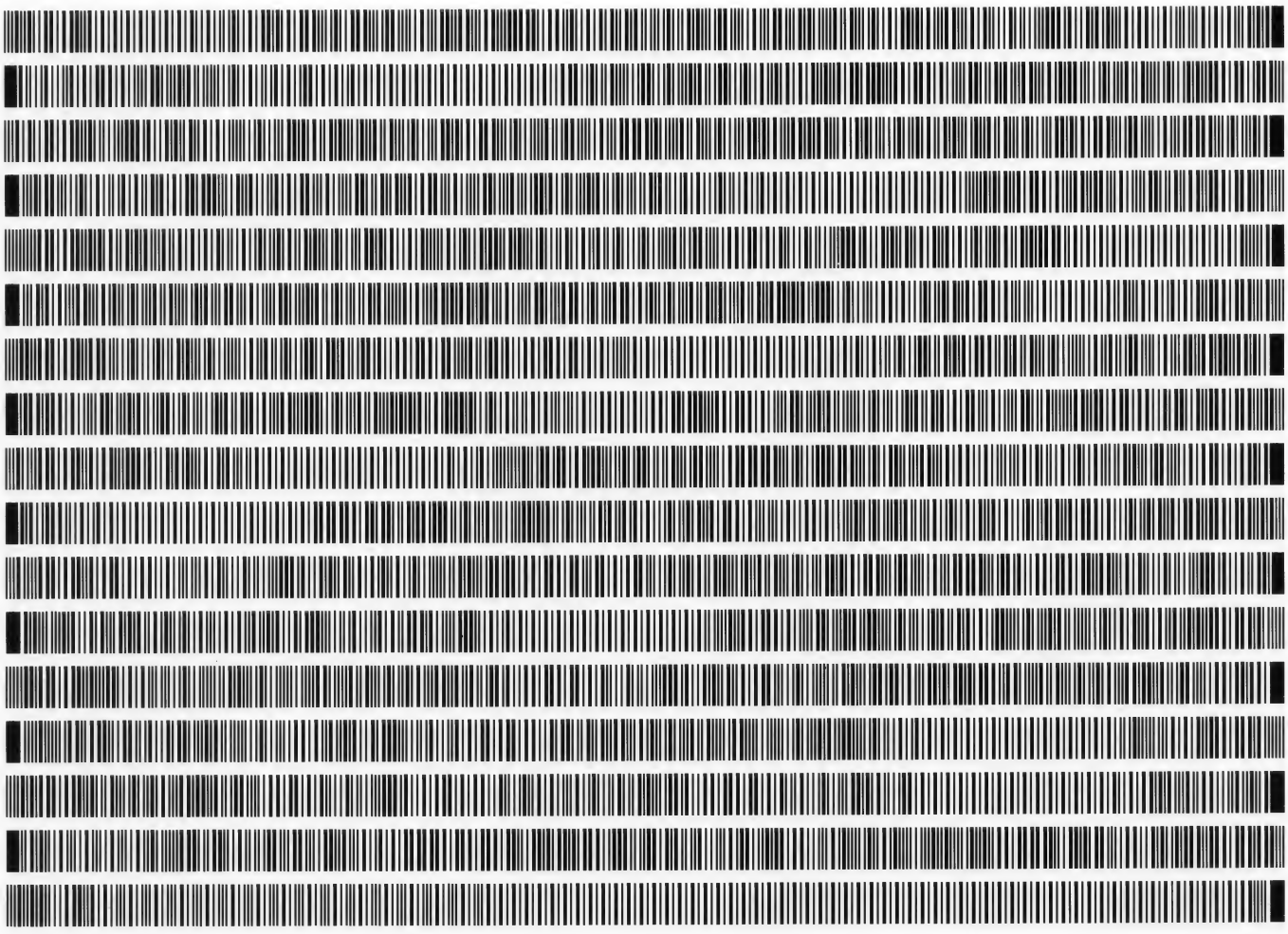

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SCIENCEWARE

FOR
T.I. 99/4A

PROGRAM Nº.
09940003

TRIANGLE SOLUTIONS

OSCAR makes math friendly for your practical applications.

How much lumber or paint should you buy for a triangular deck or the gable of your house? How can you calculate the distance to a faraway object? OSCAR and Triangle Solutions quickly find the answers for you.

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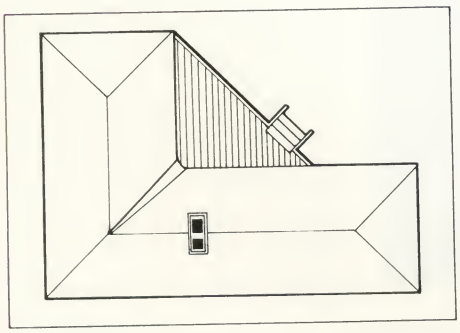
TRIANGLE SOLUTIONS

KNOW YOUR TRIANGLES

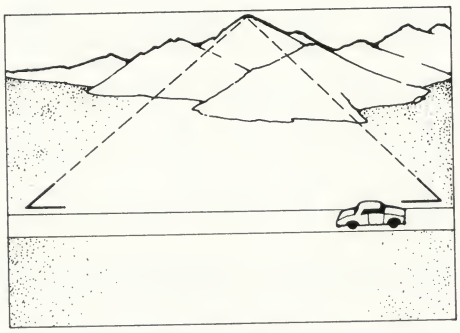
Triangles have been important to the understanding of science and mathematics for many centuries. Trigonometry is the study of the sides and angles formed by triangles. Most of our modern machines and buildings could not be built without the ability trigonometry gives us to "solve triangles."

But, as you may remember from your high school trigonometry class, figuring out how long the side of a triangle is from just two of the angles plus one of the other sides can be a painstaking, error-prone calculation. Not with *Scienceware's*™ exercise in *Triangle Solutions*™. The program gives you instant answers to triangle problems that took earlier mathematicians hours to solve. But while 19th-century scholars may have taken joy in solving triangles, is the skill ever of any use to you? Read on.



Building a Deck

■ Let's say you want to build a triangular outdoor deck. You'll need to know the square footage so you can figure out how much lumber to buy and the angles of the sides to tell you how to cut the lumber. With *Triangle Solutions*™, all you do is measure the three sides on your plan, press option Number 1, and you'll have your answer in seconds.



Measuring Distance

■ While checking some potential real estate for your vacation home, you decide to determine how far it is to a distant mountain top from building lots. There is a quick way to find out with a protractor and your car. Find a road that runs straight along the mountains. Stop your car, and fix on a distinguishing outcropping on the top of the mountain. Draw a line in the dirt that points to it and another that parallels the road. Measure the angle of the two lines with the protractor. Then drive a few miles, carefully measuring the distance on your odometer. Stop your car at some point. Take another sighting of the same outcropping, draw two lines in the dirt again, and measure the angle in the same way. With this data, you can use *Triangle Solutions*™ when you return home to closely estimate how far away the mountains are.

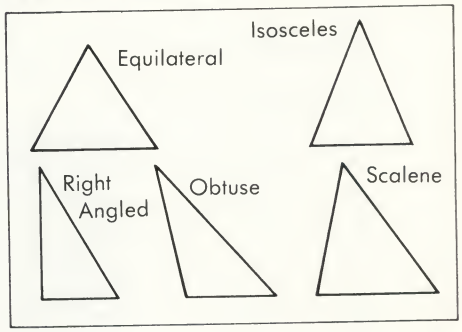
A few other examples of applications where you can use *Triangle Solutions*™ include: 1) calculating the paint needed for a gable; 2) estimating the length of a guy wire on a TV antenna tower; 3) measuring the distance across a ravine or river you can't easily cross.

Remember that to solve triangles you need three pieces of information, as did the ancients:

1) Side-side-side;
2) Side-angle-side, or:
3) Angle-side-angle.

Be sure to enter all your figures in the same unit of measurement: all feet, all yards and so on. Use decimals instead of mixing feet and inches — 12.5 feet, for example, instead of 12 feet, 6 inches, or 12½ feet. Do not use more than four digits in a number. Accuracy is to the second decimal.

Types of Triangles



Equilateral Triangle: All sides are equal.

Isosceles Triangle: Having two equal sides.

Right Triangle: Contains an angle of 90 degrees.

Obtuse Triangle: Contains an angle larger than 90 degrees.

Scalene Triangle: Having three unequal sides.

Program Instructions

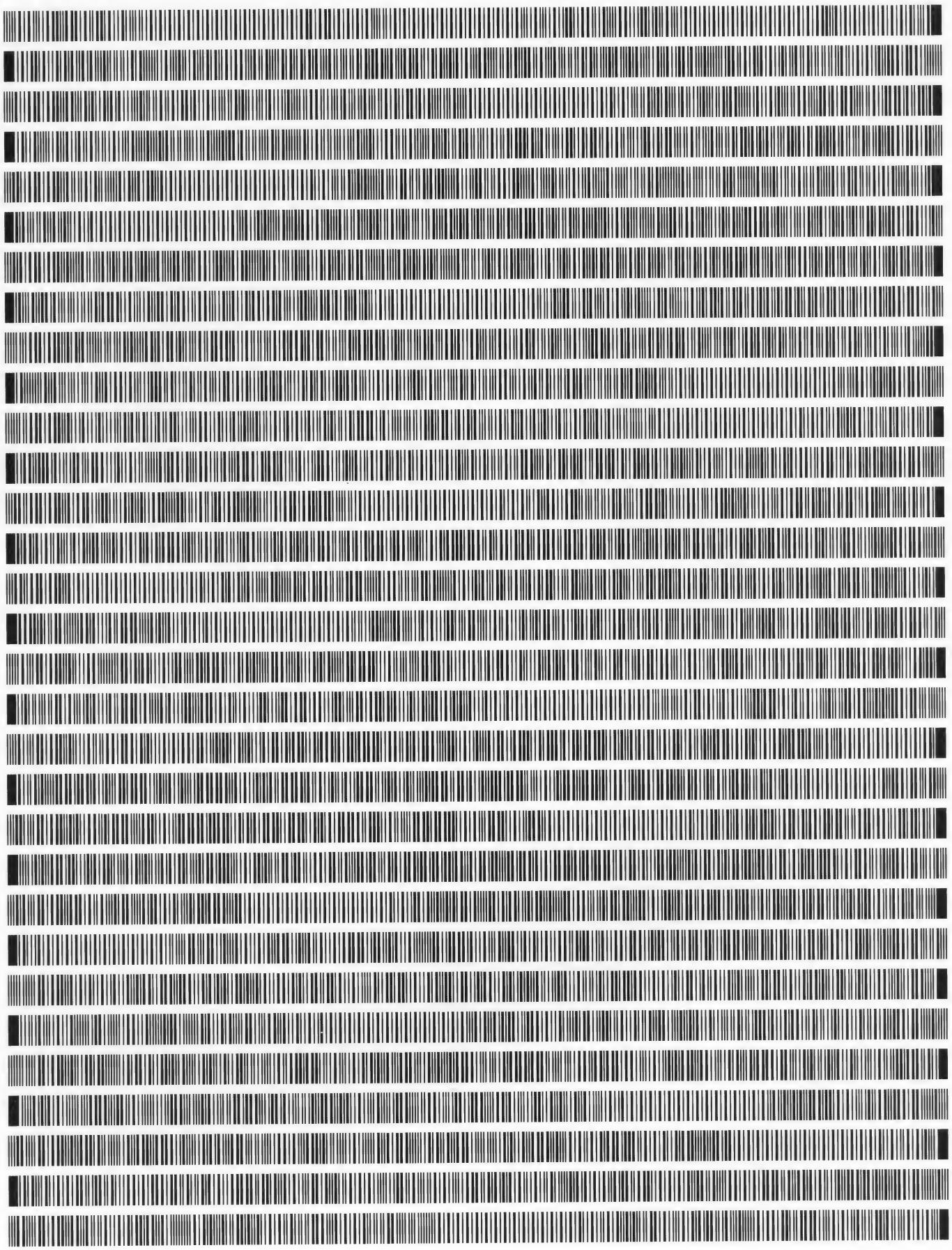
■ Load the program into your computer with OSCAR. Then type "RUN." (Refer to your User's Manual if you have difficulties.)

■ Pick the option that applies to the information you have available. You do not need to press RETURN or ENTER.

■ Enter your information as the computer asks for it. After you enter each figure, hit RETURN or ENTER.

■ When the computer fills in the missing sides or angles, press any key and the program will give you the area of the triangle.

■ Hit "Y" (yes) to figure another triangle.



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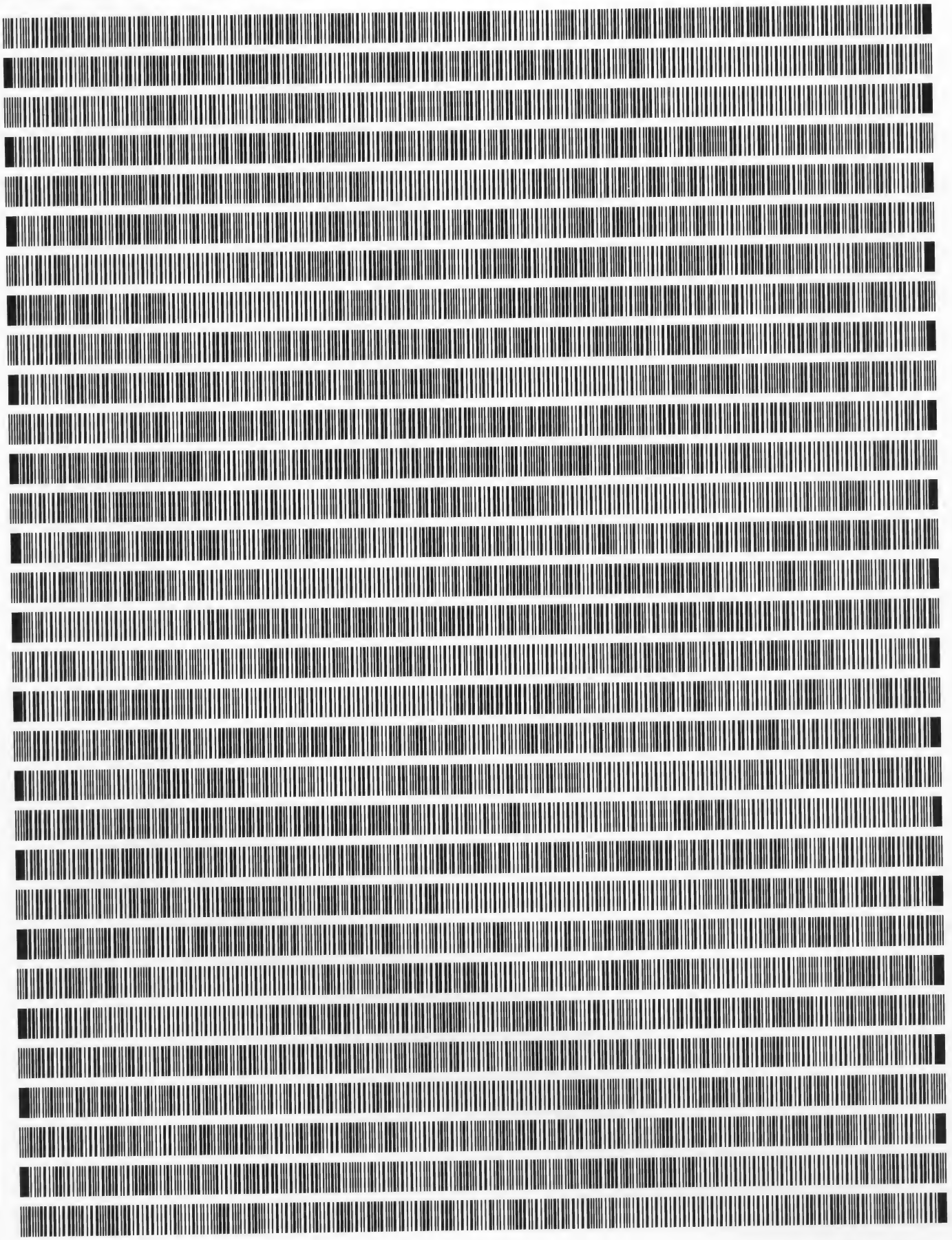

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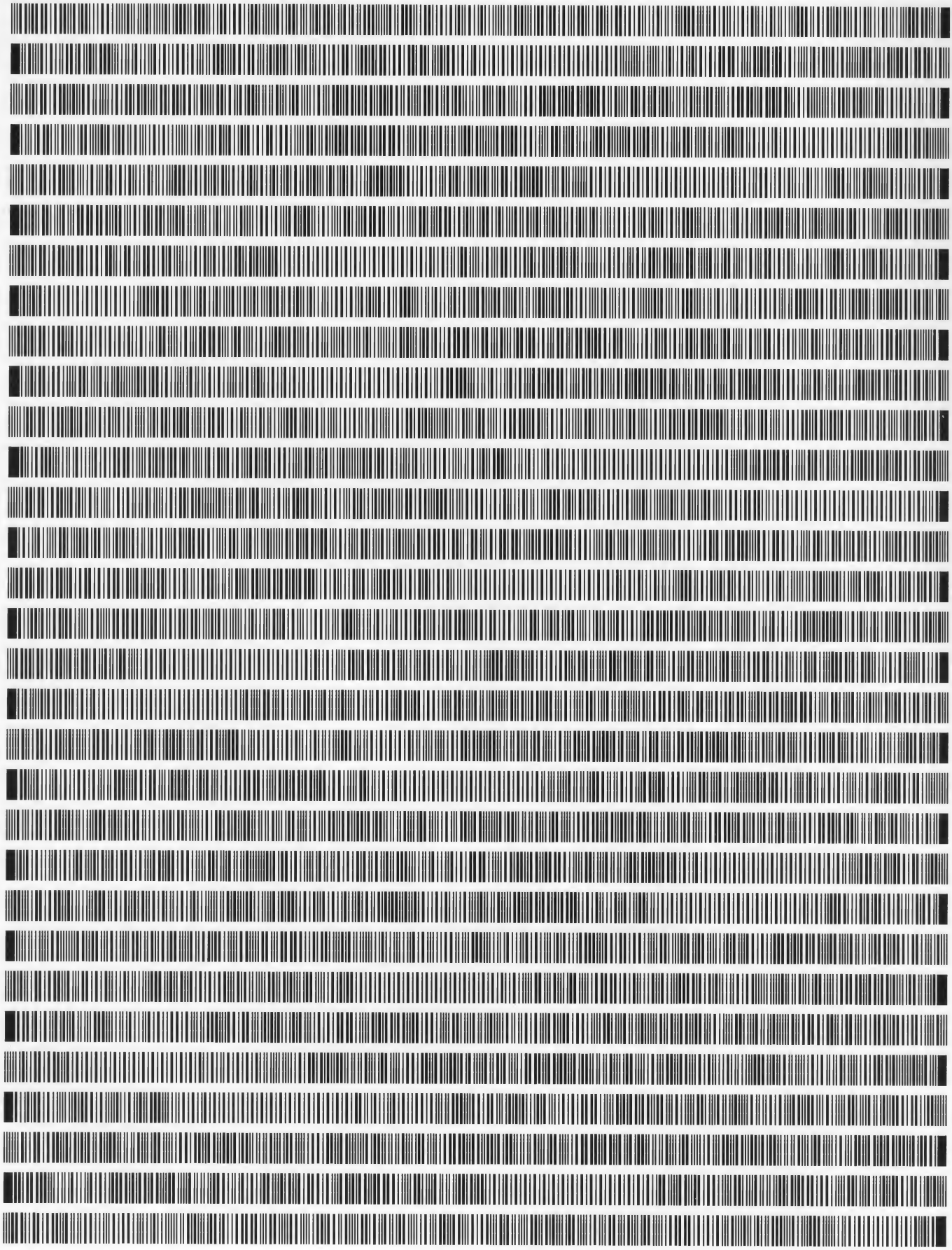

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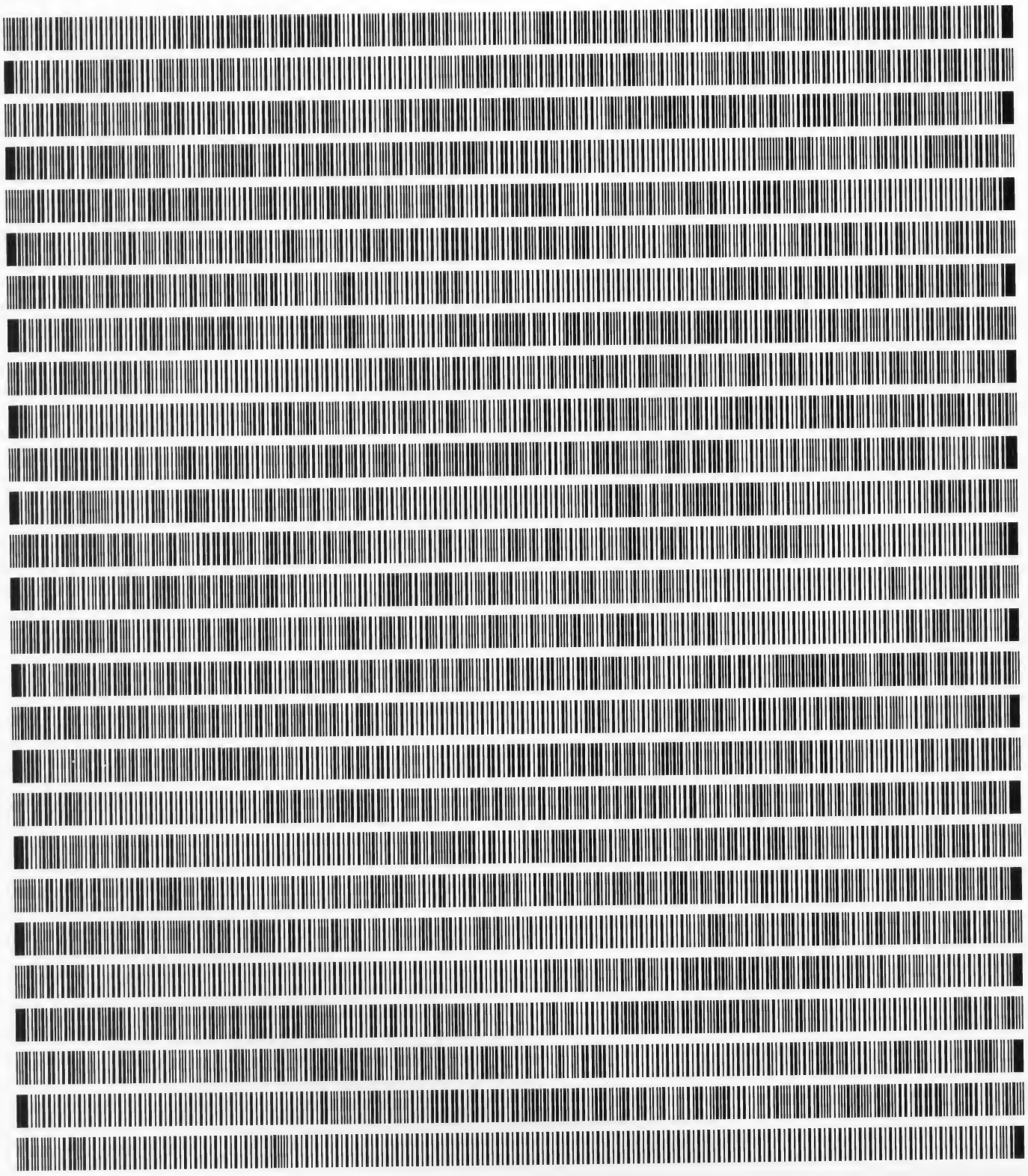

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...e page, fold along perforation line and tear carefully.

WORDWARE

FOR
T.I. 99/4A

PROGRAM N°.
09950003

WORD HABITS

Are your reading and writing habits keeping up with the demands of our high-information society?

Word Habits is a fast and friendly quiz on how well you now read important reports and articles, and how well you write memos, assignments and letters. Use the answers to boost your reading and writing skills.

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WORD HABITS

THE FIRST STEP

Words are wonderful — if you know how to use them.

Developed over centuries into the English language of today, words are the symbols we use to share our ideas with each other.

English is a grand language, broad and versatile enough for anyone's needs. Elegant and expressive, for the poet. Pragmatic and precise for the scientist or the accountant. Vivid enough to put you in a far-away land while sitting in your living room. Simple and sincere, for friends.

But as useful as English is, language is in danger; it's under attack daily. The major enemies of English are those who misuse words. Does that include you?

The *Wordhabits*™ Quiz program will start you on the path toward improving the way you communicate with others and toward upgrading your reading skills, as well.

How Do Bad Habits Start?

Most of us are reared with the language, barely conscious of words while we learn them. In school we were supposed to learn the good word habits. But bad word habits often shove aside the good. How? Copying others is the primary culprit. Once one lazy word user influences a younger word user, the trail of word abuse is set ablaze.

Because bad habits tend to drive out the good, according to reading expert Myron Q. Herrick, much of the language's usefulness is lost to many of us. Few read at more than one-tenth the speed they're capable of. Speech and writing often are garbled in every facet of life, school, work and play.

Word Habits and Reading

Good word habits are useful for everyone. If you understand the language, you'll enjoy reading more — whether it's for profit or pleasure. You'll know that a poem is a poem because the words make images flow gracefully through your mind.

And from reading flows writing and the spoken word. If you can talk to people clearly, you can persuade them to do what you want them to do.

Advice to Get Started

Our *Wordhabits*™ quiz is designed to help you pinpoint some weaknesses in your current word habits. How do you cure those weaknesses? That's what we'll be helping you with in future *Wordware*™ programs. But to get you started, we polled some writing experts to give you tips to think about. Use these ideas and the *Wordhabits*™ quiz to start making some positive changes.

Stop Overusing Words

Carla Bender, corporate communications consultant, cautions writers to watch out for the "the-and-it" trap.

"Reread your writing after every draft, looking for the word 'it' and for sentences beginning with 'The,' " Ms. Bender says. "The word 'it' is so vague that often you can't tell what the word refers to. I tell writers they should be able to eliminate the word in almost every case and improve their writing in the process. Another trap is starting sentences with 'The.' Reread your writing and you may discover three or more sentences in a row beginning with 'The.' "

Practice Writing

An exercise in good writing is to try to copy the style of the short news features found in the front sections of many magazines. Ann Arnott, the originator of the "Mostly Money" column in *Redbook Magazine*, says the two- or three-paragraph news feature is one of the hardest types of writing because you must boil down the essence of a 700- to 1,200-word press release into less than 200 words.

Be Less Formal

John Neville, a professional business communicator, says business writing often suffers because the writer tries to be too formal.

"Too many writers use long convoluted sentences with lots of parenthetical expressions, trying to sound authoritative," Neville says. "I tell writers to use short sentences in almost a staccato fashion, keeping the language varied. And I see no harm in making business writing less formal by asking for reader involvement. 'Picture if you will . . .' is an excellent phrase to start a sentence."

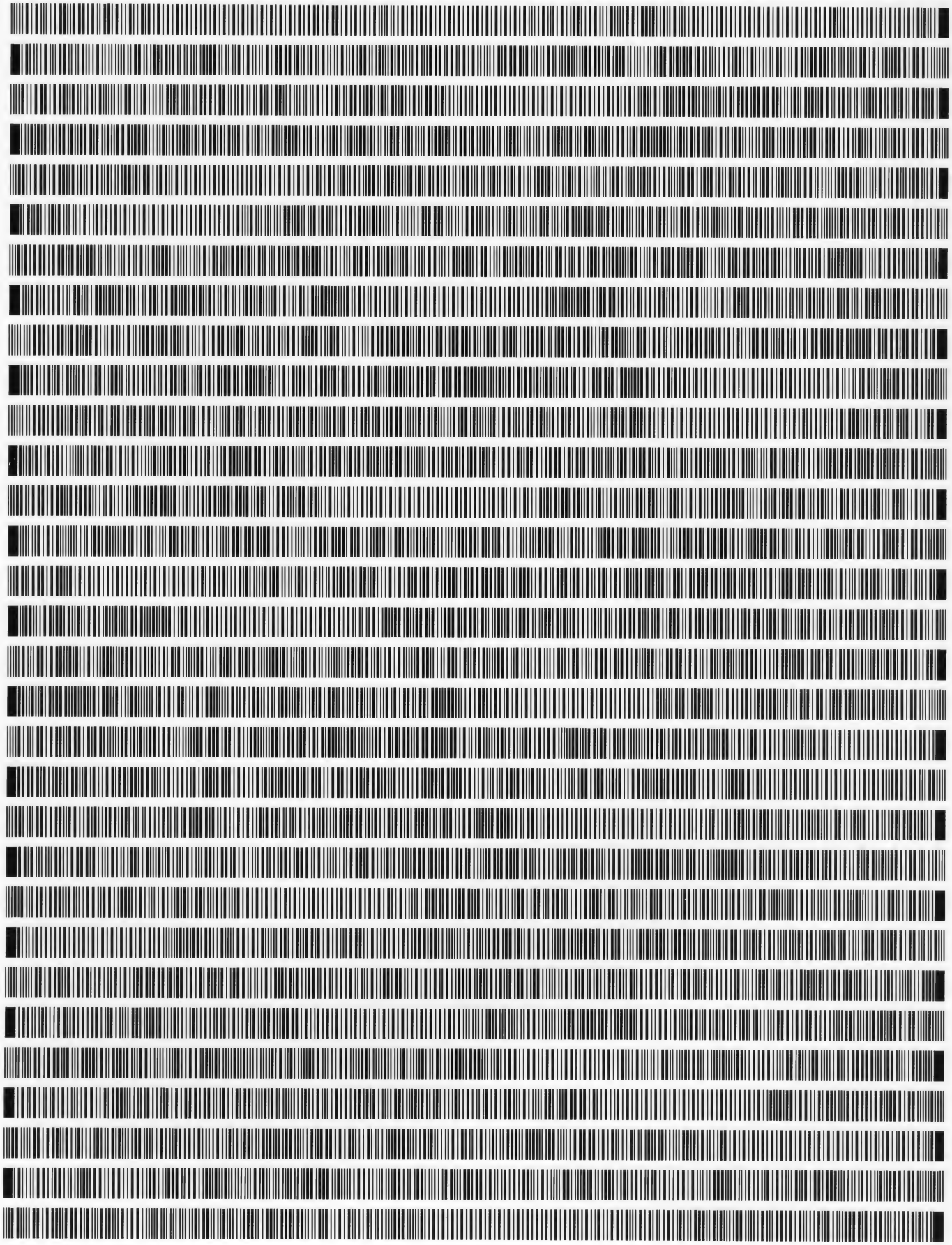
What to Look Up to?

What kinds of writing do other writers admire? David Stevens, senior editor of a leading men's magazine, says, "Read the Paul Stuart menswear ads in *The New Yorker* magazine. The relaxed style of easy familiarity with men's fashions in the writing immediately improves your own feel for words."

Better Homes and Gardens magazine editors suggest new staff writers read the book, *The Letters of E.B. White*. And advertising agencies often suggest new copywriters read the L.L. Bean catalog. For the rules of writing, most magazines and many journalism schools suggest *The Elements of Style* by Strunk and White.

Program Instructions

- Load the program into your computer with OSCAR. Then type "RUN." (Refer to your User's Manual if you have difficulties.)
- Read each question carefully and answer "Y" (yes) or "N" (no). Be honest.
- Try the quiz again after your evaluation. Change one answer and see if it improves your score. If it does, you've learned a good word habit.
- Hit "Y" if you want to try another round. Otherwise, type "N."



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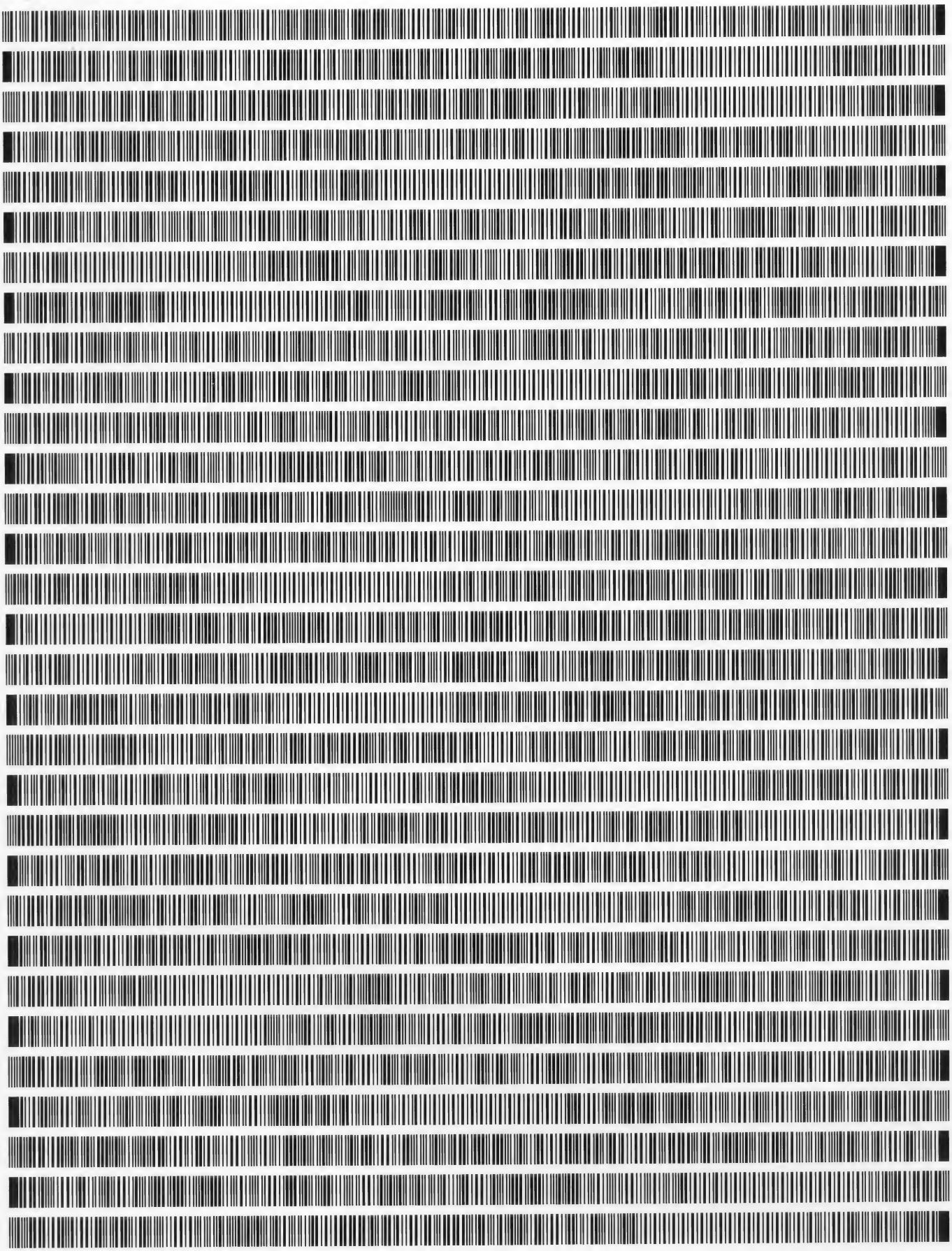

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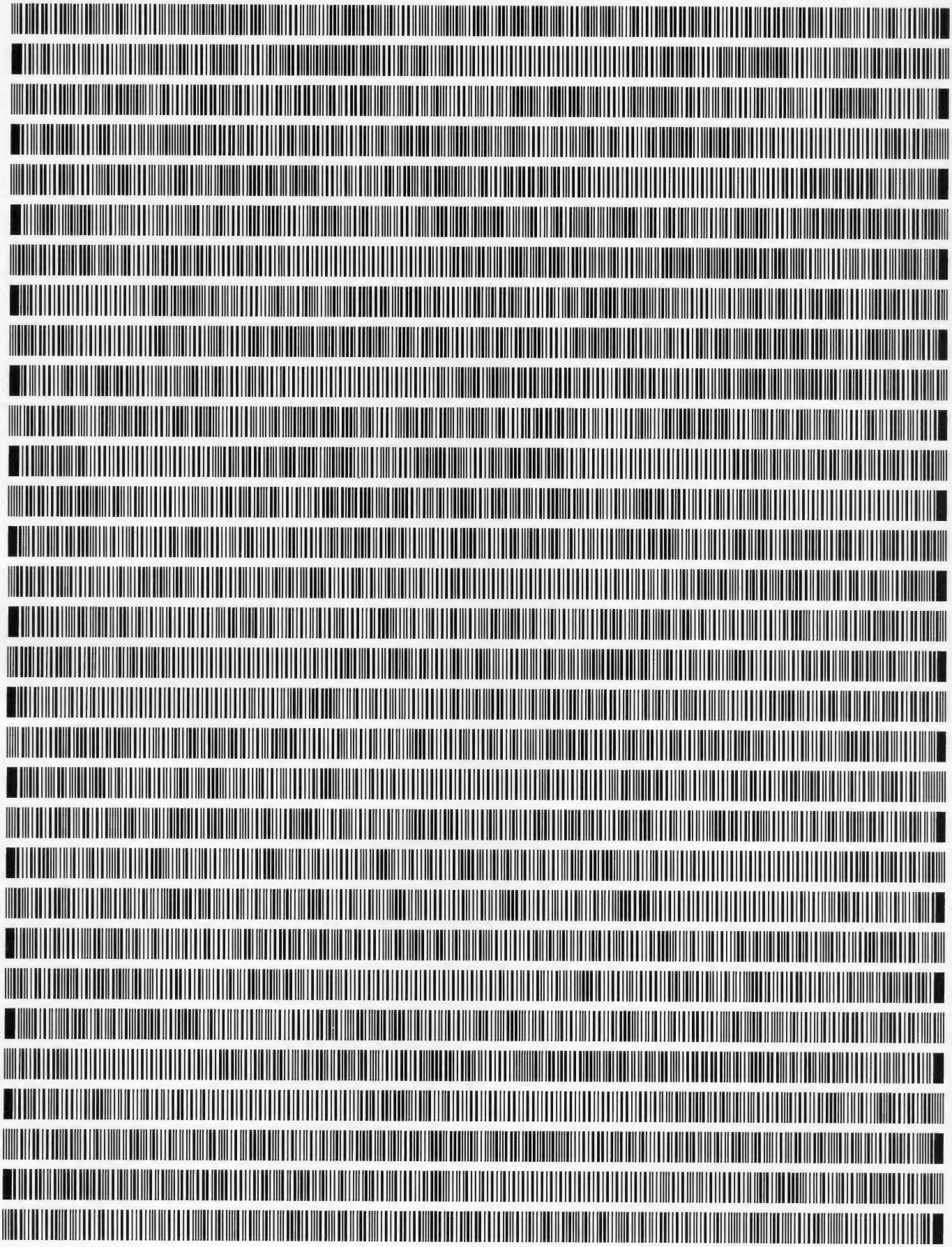

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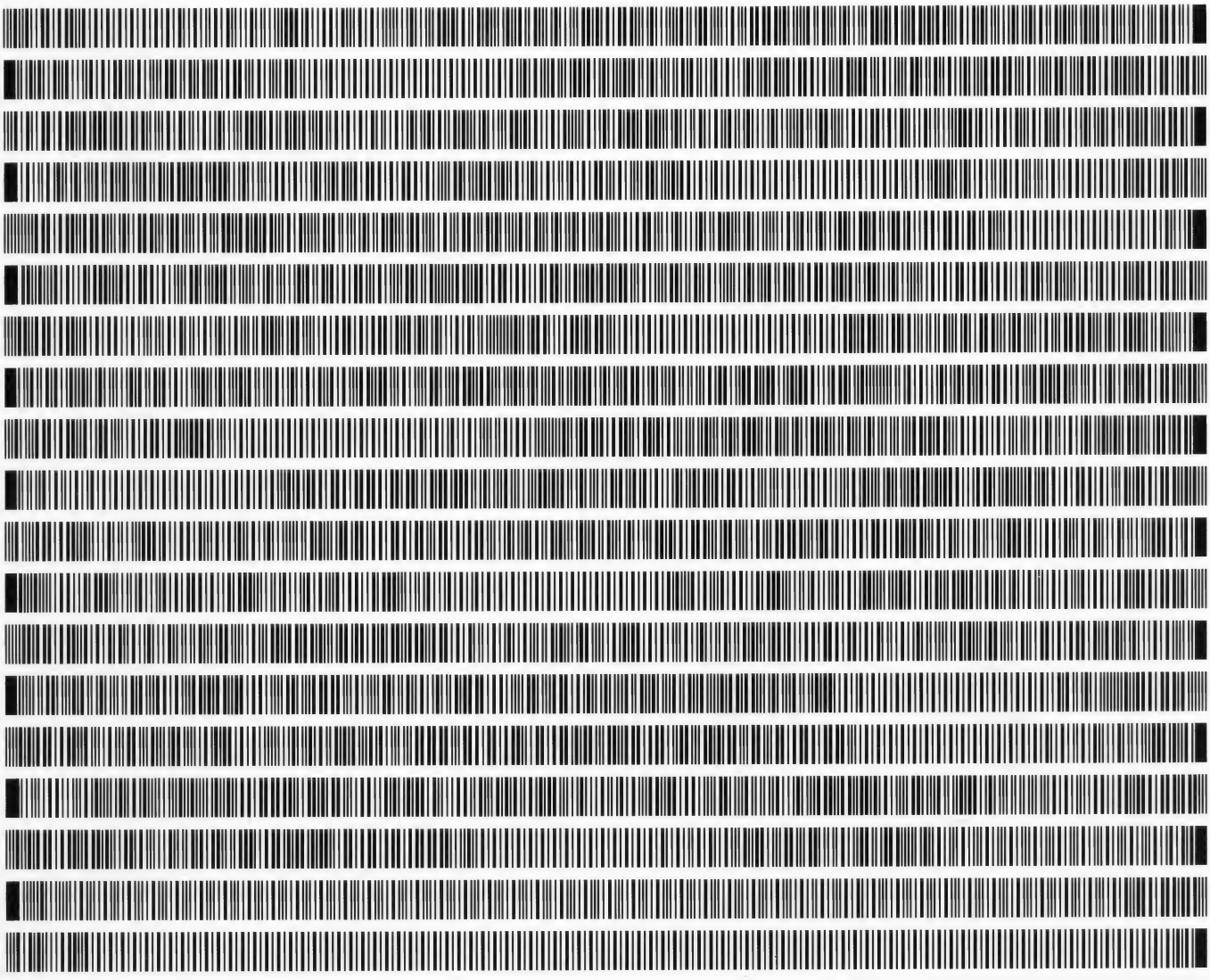

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G E N W A R E

FOR
T.I. 99/4A

PROGRAM Nº.
09970011

PROGRAM IN BASIC

Let OSCAR ease the chore of learning to program.

OSCAR is a super programming tutor. By hitting only a few keys, you run two simple BASIC programs — MILES PER GALLON and OSCAR'S DRILL (a multiplication game). Then see in detail how the programs were created.

0 39895 65002 1

PROGRAM IN BASIC / DATABAR SOFTWARE

PROGRAM IN BASIC

SEE HOW THEY RUN

On the following bar code pages are two exercises that reveal the types of programs you'll soon be able to write using OSCAR and the Genware series. The first program is a simple multiplication game. The second program calculates a car's gas mileage.

We've done all the writing of these programs to let you examine how they are constructed. All you have to do is scan the programs into your computer with OSCAR and run them. When you see how they run, then you'll switch the program to the lines of code that make up the program in order to see what a BASIC program looks like. Soon you'll be writing your own programs in the code you study here.

OSCAR's Drill™

The first program, *OSCAR's Drill*™, is a simple multiplication game, the type you would write if your child needs practice with multiplication. *OSCAR's Drill*™ presents numbers between 0 and 10 for a player to multiply and asks the player to type in the correct answer. A player starts with 20 points. If an answer is correct, the player gets 5 additional points. If wrong, the player loses 2 points. One game has only four problems, but you can keep playing as long as you like.

After You've Played the Game

Now you'll want to examine the BASIC language lines that make up the program. See the Program Instructions for how to do this. You'll look at the program line by line in sections. Program lines start at 50 and go up in intervals of 10. Lines 50 to 250, therefore, refer to a program's first 15 lines. You use line numbers in BASIC programs to tell the computer the order in which to execute the statements.

Miles Per Gallon™

Your second program, *Miles Per Gallon*™, is an example of how someone might use a computer for calculating a car's gas mileage for a trip to Phoenix. The program takes the mileage readings from the car's odometer each time the driver fills the tank with fuel, and then keeps a running tally of the fuel economy the car has attained from fill to fill.

Miles Per Gallon™ is a completed program that doesn't require your input. But study closely the BASIC language code that makes up the program. The program is a bit more complicated than *OSCAR's Drill*™, so it has more "REM" lines. Again, look at the program line-by-line to get clues on how programs are written. You'll want to refer to "The BASICs of Programming" article (page 44) to help you understand some of the other basic elements of these two programs.

What Types of Statements?

Here are the various types of statements you'll be examining in the program listings for *OSCAR's Drill*™ and *Miles Per Gallon*™:

DATA: Used in a program, it lists information that will be assigned to the variables in the READ statement.

FOR-NEXT: Used to cause a *loop*, or repetitions, of part of a program. For example, after the command FOR I = 1 to 10, the program runs, executing all statements, until it hits a line that says NEXT I. Then it goes back to the line beginning FOR again for nine repetitions.

GOTO: Tells the program to jump to the line named.

IF-THEN: A programming statement in which an action is taken when a condition is true. For example, the statement, "IF A = B THEN 220" tells the computer to determine if A equals B, and if so, to go to line 220 in the program.

INPUT: Stops program and requests information from the person running the program; it then assigns that information to a *variable*. For example, if you enter 8 in answer to INPUT S, the program assigns a value of 8 to the variable S.

LET: Tells the computer that whatever follows is true. For example, LET C = 1 means C is equal to 1.

PRINT: Instructions to the computer telling it to put a statement on the monitor.

READ: Assigns information to variables from DATA statement.

REM: A note to people reading a program listing.

Program Instructions

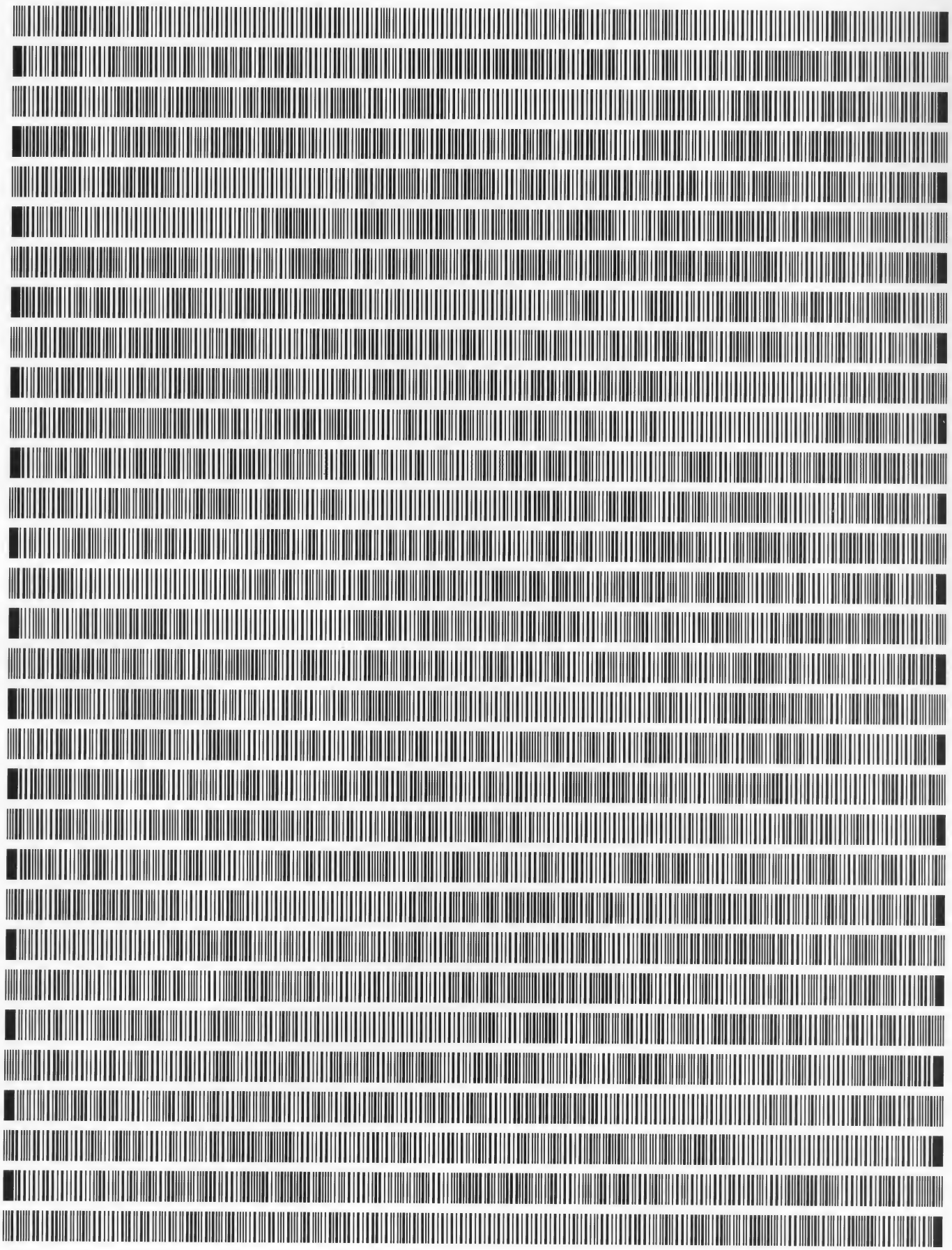
- Load *OSCAR's Drill*™ into your computer with OSCAR. Then type "RUN." (Refer to your User's Manual if you have difficulties.)
- A multiplication problem will appear. Type your answer to the multiplication problem and press RETURN or ENTER. (Do not type a letter or press RETURN or ENTER without first pressing a number; the program will end and you will have to type "RUN" to play again.)
- At the end of the game type "Y" (yes) if you want to play again or "N" (no) if you don't, and press RETURN or ENTER.
- If you've pressed "N," type List 50-130 (50, 130 for Atari) and press RETURN or ENTER to see the first nine lines of the program. After studying these lines list the next section in the same way following this chart:

OSCAR'S DRILL	
50-130	510-590
140-220	600-700
220-300	710-740
310-410	750-820
420-500	830-850

- Follow the same instructions for *Miles Per Gallon*™ using this chart:

M. P. G.	
50-100	470-530
110-180	540-600
190-210	610-650
220-280	660-720
290-350	730-800
360-460	

OSCAR'S DRILL
GENWARE™



TO REMOVE PAGE FOLD ALONG PERFORATION LINE AND TEAR CAREFULLY

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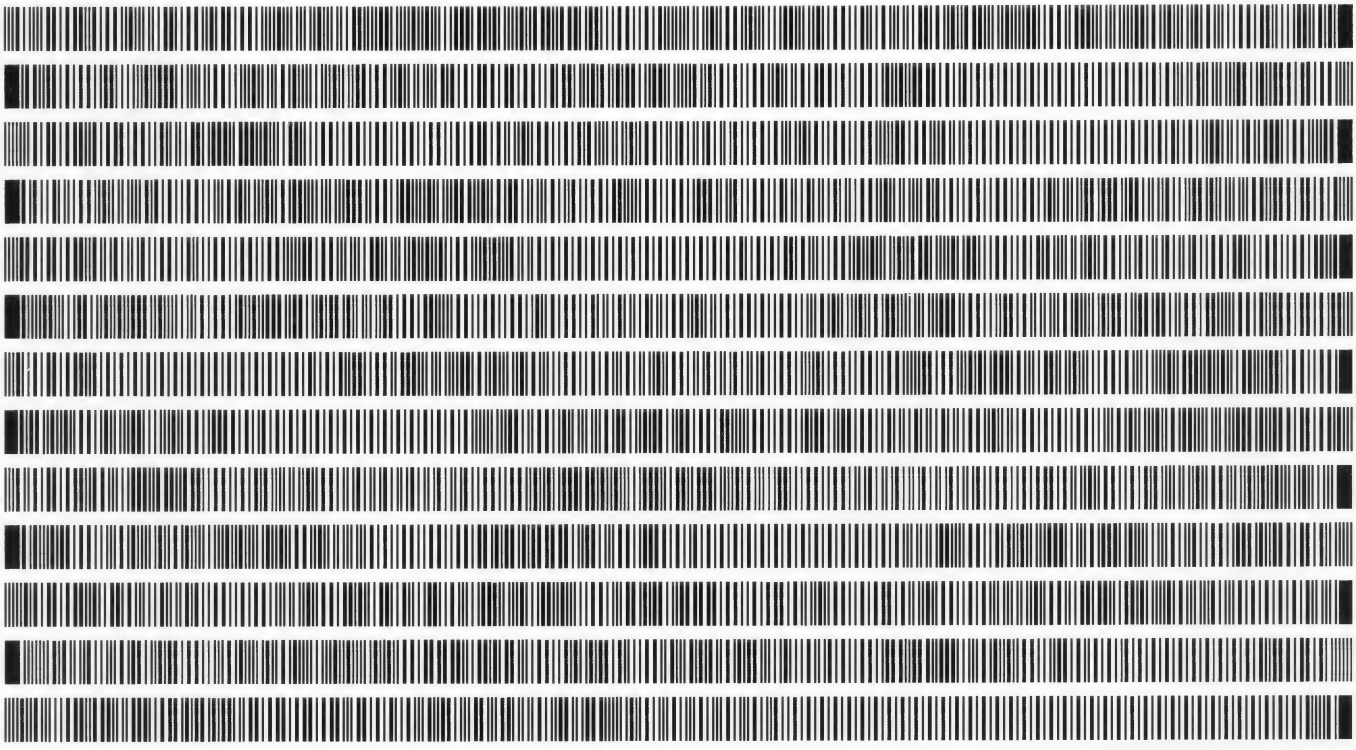

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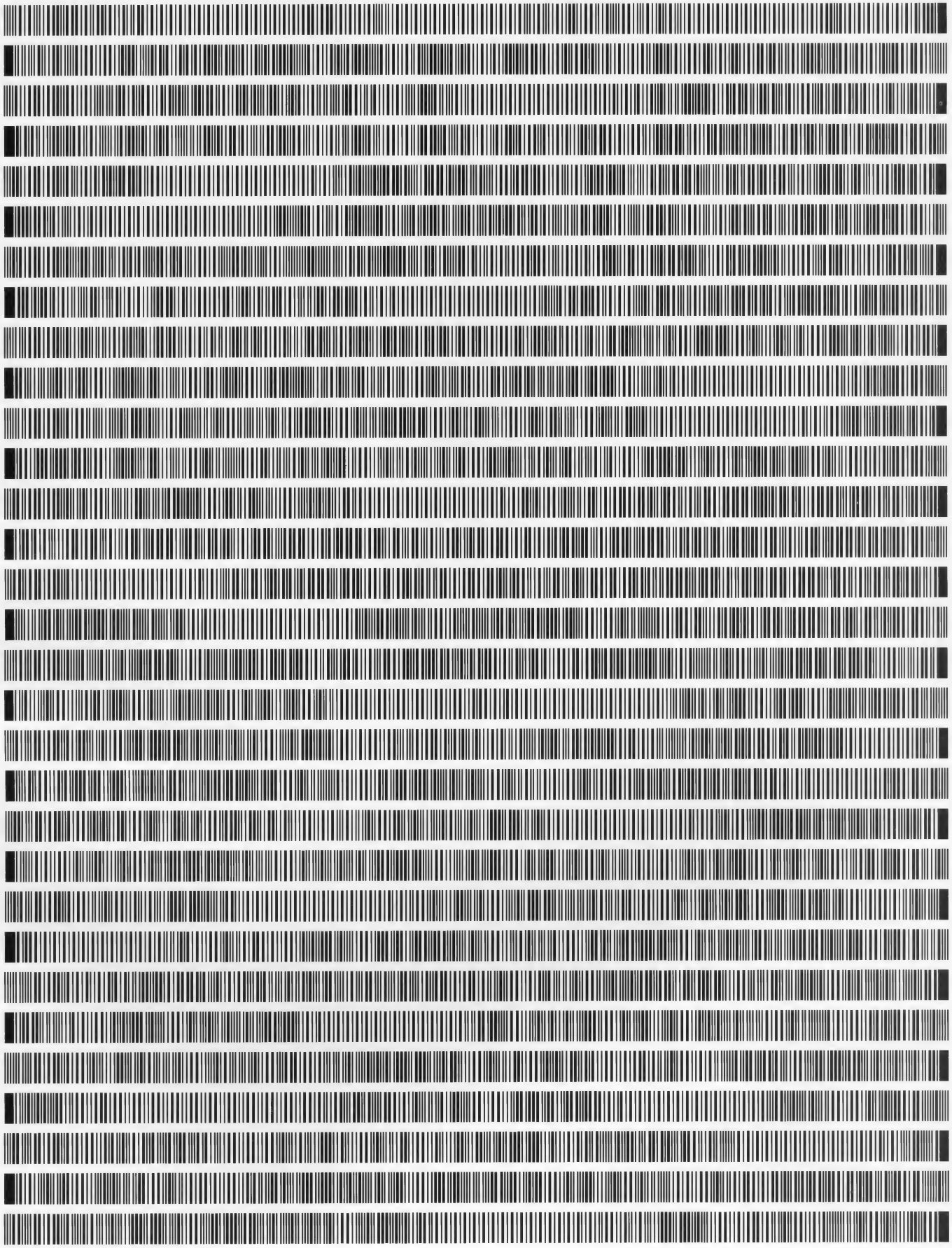
MILES PER GALLON
GENWARE™



TEXAS INSTRUMENTS 99/4A

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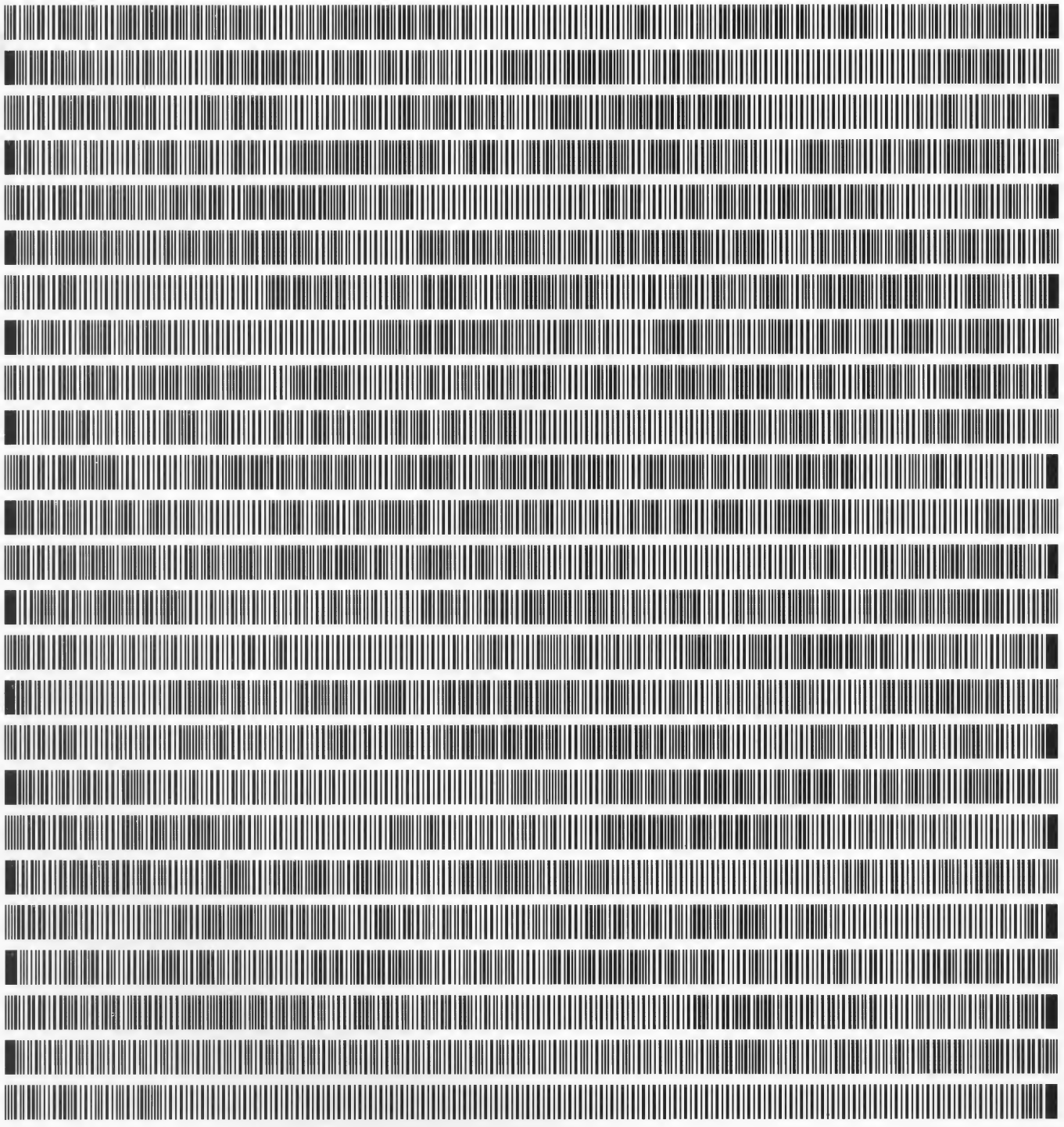

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GET MORE OUT OF YOUR HOME COMPUTER! BECOME A CHARTER MEMBER OF THE EXCITING NEW DATABAR CLUB!

Want to get the most fun and enjoyment from your home computer and your OSCAR? Then the Databar Club is for you. With your membership you and your family will receive **DATABAR, The Monthly Bar Code Software Magazine** which contains 8 new and exciting programs each month, at an unbelievable cost of only $1.25 per program! You'll also receive a deluxe 3-ring binder to store your programs, and you'll be eligible to participate in exciting program and article writing contests, and get involved in the growing world of OSCAR. If you are a selected author you will see your work published.

ONE-YEAR CHARTER MEMBERSHIP

With a one-year membership you'll receive 12 issues of **DATABAR, The Monthly Bar Code Software Magazine.** That amounts to 96 software programs with a retail value of more than $900 for the low cost of only $120. And you'll also get a free, deluxe 3-ring binder to store your programs.

TWO-YEAR CHARTER MEMBERSHIP

With a two-year membership you'll receive 24 issues of **DATABAR, The Monthly Bar Code Software Magazine.** That's 192 programs that retail for more than $1800 which are yours for just $240. With this incredible offer you'll receive free an additional $75 worth of software (8 programs, not available in the magazine) and a deluxe 3-ring program binder.

GIVE SOMEONE A GIFT MEMBERSHIP

Know someone with a home computer? Help them to get the most out of it by giving them a two-year gift membership in the Databar Club. They'll receive 24 issues of **DATABAR, The Monthly Bar Code Software Magazine,** a free deluxe 3-ring program binder and a free OSCAR (a $79.95 value)! All for just $240.

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A Comparable Retail Value of More Than $900!

Yes! Enroll me for one-year as a charter member of the Databar Club. Send me 12 issues of **DATABAR, The Monthly Bar Code Software Magazine** and my free program binder.

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Address _____ Apt. _____

City _____ State _____ Zip _____

OSCAR Serial No. _____ Computer Model _____

Payment enclosed ( ) Please bill me in full for $120 ( ) Please bill me in four quarterly installments, $35 each ( ) Please charge to my credit card ( )
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Yes! Enroll me for two-years as a charter member in the Databar Club. Send me 24 issues of **DATABAR, The Monthly Bar Code Software Magazine,** 8 bonus programs (with a retail value of $75) and a free program binder.

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Address _____ Apt. _____

City _____ State _____ Zip _____

Computer Model _____

Please send invoice to:

Name _____

Address _____ Apt. _____

City _____ State _____ Zip _____

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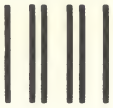

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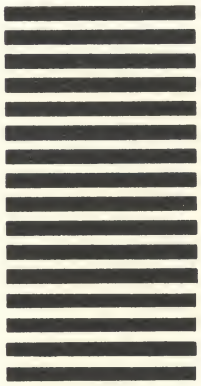

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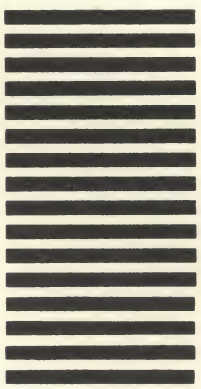


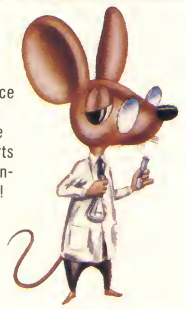
C

TO JOIN THE DATABAR CLUB, SEND IN YOUR MEMBERSHIP APPLICATION TODAY!

Each month, we'll deliver right to your door, the exciting Databar Magazine with eight programs in our comprehensive software series Eight programs that will lead you and your whole family into new dimensions of pleasure and learning:

FUNWARE™
Exciting but non-violent games for family members of all ages like checkers, mazes, bridges, go fish, OSCAR's Adventure and more! (An excellent way to teach your child to use a keyboard while having fun.)

SCIENCEWARE™
Provides useful math/science programs that you can put to use right away for home improvement projects, sports and hobbies, home electronics, photography and more!



WORDWARE™
Offers a wide range of language-skill services, including: how to write effective resumes and business letters, how to get more out of your reading, how to improve your vocabulary, and other relevant subjects.

HOMEWARE™
Improves your family's financial health by providing practical, easy-to-understand information on topics like taxes, inflation, family budgeting, life insurance, savings programs, retirement income, home mortgages, educational funding and more!

HEALTHWARE™
A complete array of software programs providing guidance for maintaining family health. Programs include nutrition, health facts, exercise, stop smoking, weight control, and stress reduction.

CLASSWARE™
Familiarizes the child with computers while reinforcing school activities for grades kindergarten through six. Subjects covered include addition, subtraction, multiplication, division, fractions and forming alphabetical letters.

LEGALWARE™
Informative and practical programs on law and how it relates to everyday life. Programs include legal history, using the court system, selecting an attorney, writing a will, and more.

GENWARE™
This tutoring series is designed to teach the user how to program the home computer in BASIC. Includes entering and editing programs, output and input in BASIC, logical expression, loops, and practice problems.

Check all the benefits of being a Charter Member of the Databar Club, and use the adjacent postage-free Databar Club Membership Application Card to join the Club now.

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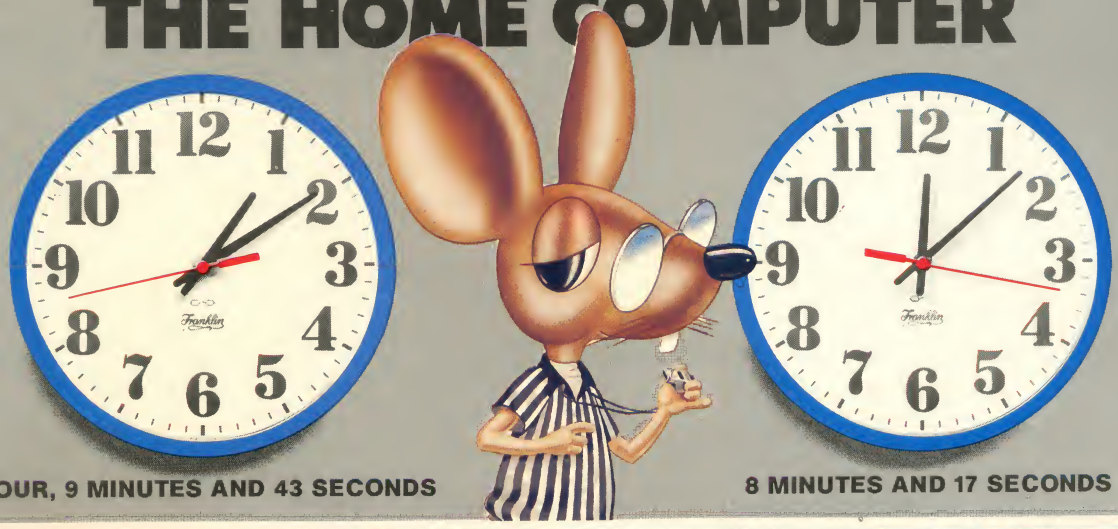
DATABAR CORPORATION, 10202 Crosstown Circle, Eden Prairie, MN 55344, **Phone: 612-944-5700**

PROGRAMMING THE HOME COMPUTER



1 HOUR, 9 MINUTES AND 43 SECONDS

8 MINUTES AND 17 SECONDS

Expert Typist with Keyboard vs. Eight-year-old with OSCAR

***Task:** Enter a two-page BASIC program with the use of the keyboard.

***Prior Computer Experience:** Degree in Computer Programming.

***Prior Typing Experience:** Professional typist with 100 wpm capability and two hours practice on this computer.

***Results:** Typist finishes in 39 minutes and 28 seconds with a number of errors and a headache, taking another 30 minutes and 15 seconds for debugging.

***Task:** Enter the same program in bar code format with the use of OSCAR.

***Prior Computer Experience:** None

***Prior OSCAR Experience:** A short practice session.

***Results:** Eight-year-old finishes in 8 minutes and 17 seconds with no errors and plenty of time to blow bubbles.

KEYBOARD OR OSCAR—WHICH WOULD YOU PREFER?

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