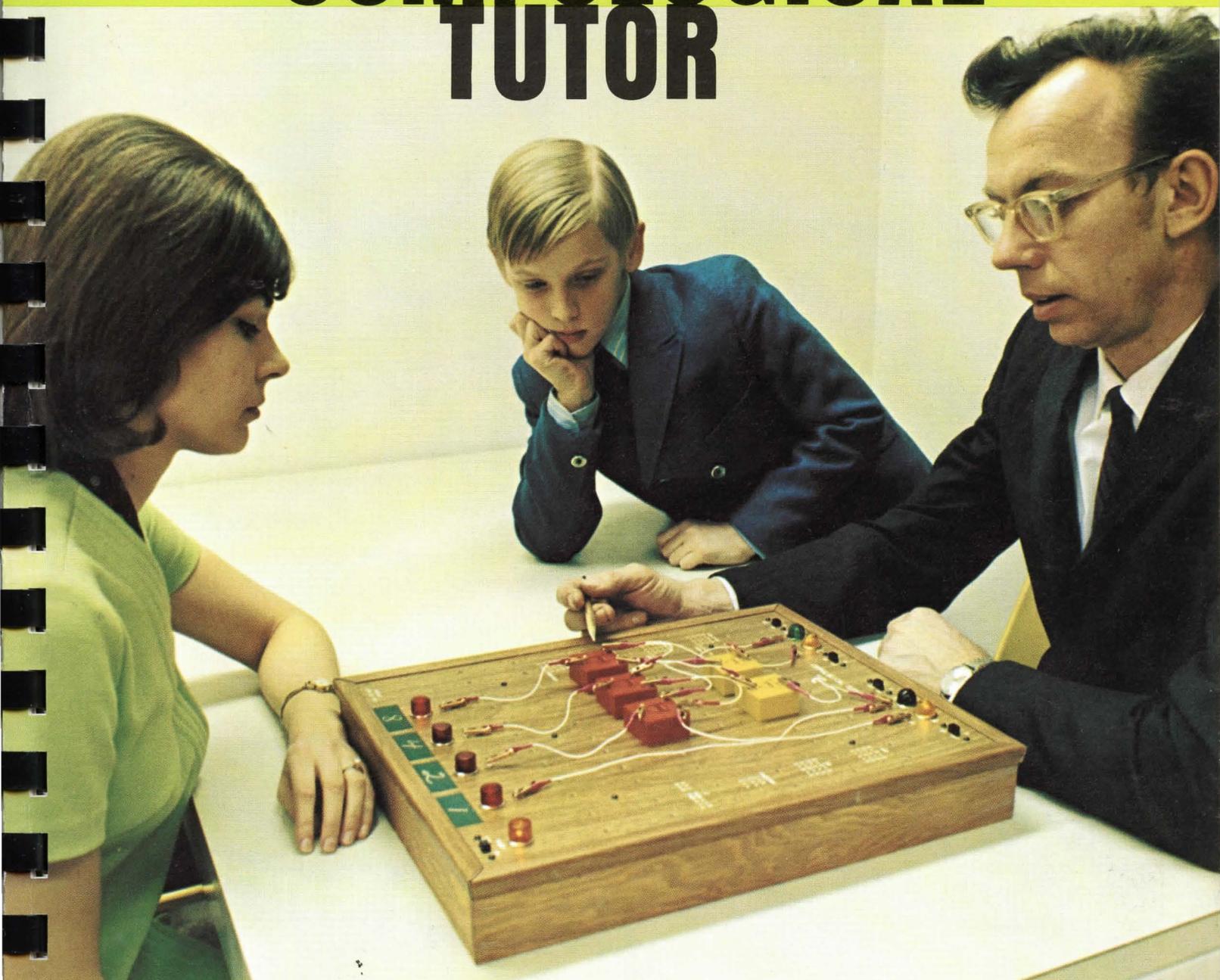


Introducing The Superb New

COMPULOGICAL TUTOR



An Important Breakthrough In Low Cost Computer Trainers....
A Major Contribution To The Field Of Educational Entertainment !

EXHIBIT A

The Industrial Revolution, it is said, was a revolution that vastly increased man's ability to produce material things. Today we are on the threshold of another unprecedented revolution — the computer revolution — which will vastly increase man's ability to think.

To those not knowledgeable in the area of computer technology, it usually comes as a surprise to learn that the tremendously complex jobs being performed by these "thinking machines" — jobs such as reading, translating, problem solving, testing, diagnosing, plus a myriad of conventional business tasks — are all performed, in the final analysis, by nothing more than numerical manipulation, based on logic. Once you understand the numerical concepts and logic on which the computer is based, then these seemingly fantastic accomplishments suddenly lose their mystery.

The computer's potential for enhancing mental activity has greatly altered the outlook for every young and not-so-young person who is planning, or has adopted, a career in science, politics, business, law or medicine. For those working or studying in these or contiguous areas, it is vital that they become oriented — not in computers, per se — but in the logic which is used in the design of the machines, as well as the logic used in preparing the plan of computation, or "program".

The Compulogical Tutor has been developed expressly to fill the need for a compact logic trainer, available to the individual user or student at a popular price. It permits the individual to explore and absorb all digital logic functions, which he implements by personally arranging the interconnection of the logic modules. As he learns the functions of the respective blocks and the purposes behind the various wiring configurations, he quickly gains a complete understanding of Boolean Algebra and digital logic theory. He sees how these numerical systems work to solve complex problems, in highly dramatic form, because he has himself constructed the computer that solves them. This "hands on" technique of learning serves to generate heightened interest and comprehension . . . much more than the traditional methods which rely solely on reading theory and practice.

The Compulogical Tutor is, in effect, a complete and highly sophisticated computer; no different, in principle, from a commercial computer such as the IBM 360. The essential difference is that the user assembles the Tutor each time he wants to work a given problem or exercise, and, of course, the numerical limits are much more restricted, so that the concepts may be more simply demonstrated.

The Compulogical Tutor comprises a master assembly and control board (shown in detail on right-hand panel) and a set of 18 transistorized logic modules or "blocks". In addition, each Tutor is accompanied by a comprehensive, authoritative and clearly-written manual which has been prepared by professional instructors in the field of computer education. This manual can be understood by anyone with as much as a fifth-grade education. There is a profusion of diagrams which are fully explained, extremely easy to understand and follow. (Note: a detailed outline of the manual is reproduced on the back page.)

In practice, the student sets up the modules on the assembly board in accordance with the diagram in the manual; makes the proper interconnections with the wiring leads provided; then proceeds to feed the information (given in the manual) into designated inputs. Finally, he reads the resulting output for the solution to the problem and checks his result with that shown in the manual. Once he has completed a particular problem or experiment, he goes on to another.

The combination of Compulogical Tutor and comprehensive instruction manual provides the user the means by which he can conduct more than 150 experiments, problems and exercises. Each section of the manual, and its exemplification on the Tutor, is calculated to stimulate the user to further reading and study activity.

The eighteen solid-state logic modules supplied with the Compulogical Tutor are designed to perform separately and collectively all standard computer functions. They do the same jobs that their more sophisticated "relatives" do in commercial computers. For any given problem or experiment,

Two or more people can participate in setting up and operating the Compulogical Tutor, which is designed for entertainment as well as instruction. It can be an exciting family or group activity — at home or school.



Anyone with as much as a fourth- or fifth-grade education can learn to operate the Compulogical Tutor in twenty minutes, as the young man below is doing. The fascinating concepts employed and explained are enthralling to everyone . . . from 8 to 80!





Shown above is the full complement of 18 transistorized Logic Modules (or "Blocks") supplied with your Compulogical Tutor. For each particular problem or exercise, you simply select the designated blocks, plug them in and connect them up. They are then ready to start "thinking" for you . . . in millionths of a second!

ment, only a specific set of modules are employed, and the user is not distracted by an unused assemblage as is so often the case with other, more expensive, logic trainers.

Perhaps the most interesting capability afforded by modern computer techniques is that of decision-making. Problems have been designed and included in the accompanying manual to cover the field of economics, philosophy, business, finance, and accounting. In working these problems, the user becomes oriented to the wide range of applications which digital systems offer.

Another area of high interest is in the field of decision logic tables, and the Compulogical Tutor is designed to graphically illustrate their uses and applications. One way of determining whether or not logic is understood is to test the ability to communicate this logic to others. Decision tables teach a person to be thorough and concise in documenting all the elements of a problem from start to finish. It is beautifully simple to learn, especially when the problems as given in the manual are set out in such a manner that the individual may process them on the Compulogical Tutor.

Still a further area the individual may explore on the Compulogical Tutor is that of cybernetics. Cybernetics was developed by scientists nearly twenty years ago, when they began to compare the design and operation of electronics systems with living organisms. The manual accompanying the Compulogical Tutor presents this fascinating subject in layman's language, showing how cybernetics attempts to determine the relationship between machine-thinking and human-thinking. It is based on the premise that the human body, like a complex machine, is controlled by innumerable self-regulating devices. To grasp the fundamentals of cybernetics, as presented with the Compulogical Tutor and its manual, the individual needs no previous knowledge of biology, electronics, or other technical subjects.

All computers speak a certain numerical "language", and the user of the Compulogical Tutor is quickly introduced

to the simplest of these languages and how they are used to program a computer for a particular function or problem. This and many other fascinating subjects are completely delineated in the outline on the outside back page of this folder, which provides a much broader picture of the scope of learning made possible by the Compulogical Tutor and its accompanying instruction manual.

To simplify operation and to insure dependable performance, the Compulogical Tutor is a 100% solid-state device, using only the finest transistors and components. It is designed as a convenient desk-size, portable, completely self-contained unit which is powered by ordinary flashlight batteries. Its durable components and rugged construction enable it to withstand the rigors of day-to-day use and handling.

The logic modules, each imprinted and colored to identify its respective function, are of a simple plug-in design. They are molded of very tough plastic, which encases the transistors and appropriate circuitry. Connecting pins protrude from the upper side for the purpose of interconnecting.

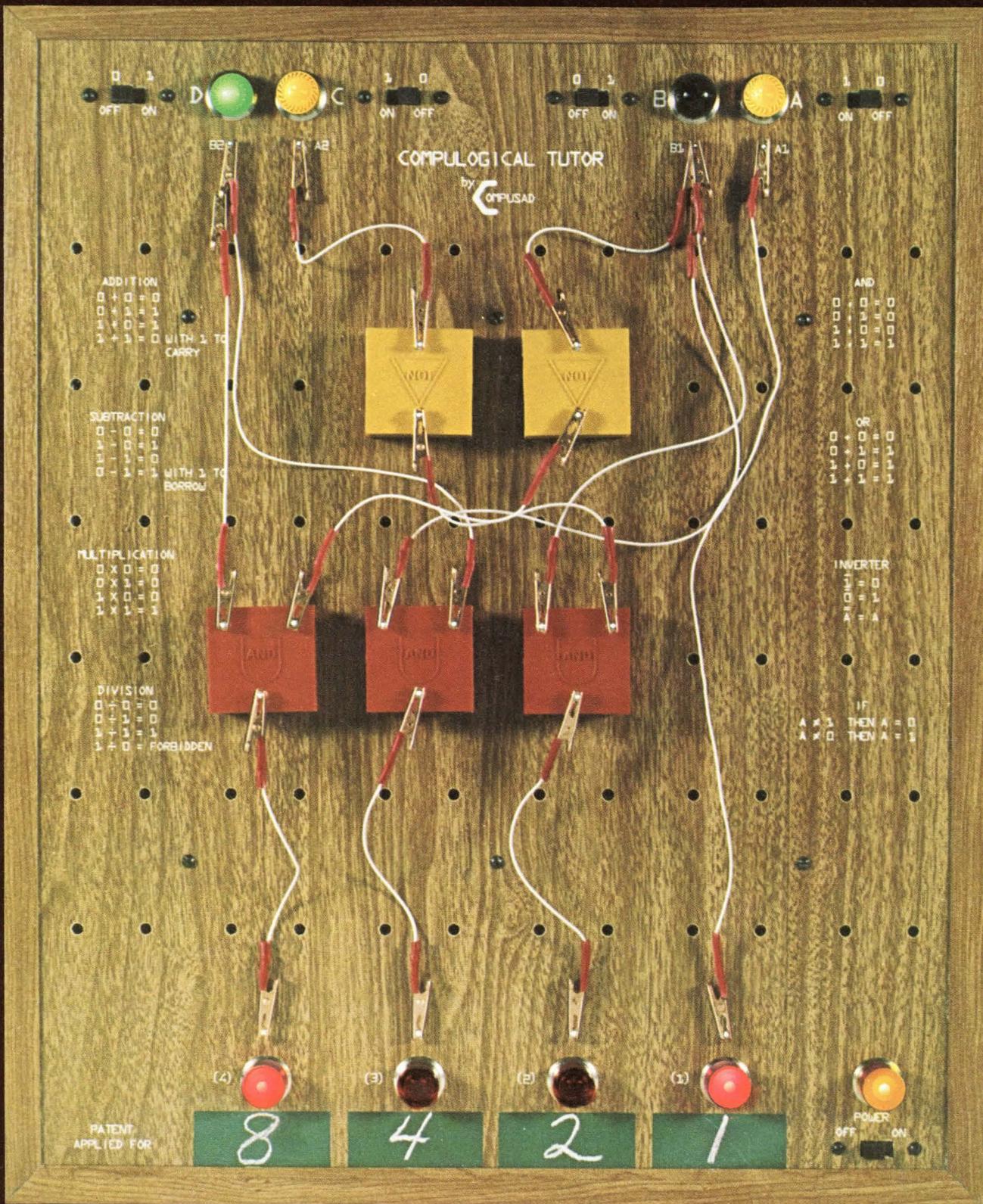
An abundant supply of connecting wires or "leads" is supplied, and to facilitate making very short connections, an assortment of flexible springs is provided. The discrete component circuitry offers ease of input gate development, and incorrect connections cannot harm the modules or other elements of the Tutor.

To operate the Compulogical Tutor, only six standard flashlight cells are needed. These are placed into retaining clips on the underside of the assembly board. Since only transistors and other low-drain components are used, one set of batteries will operate the Tutor for months.

Because of the unique concepts of design and operation incorporated in the Compulogical Tutor, patent and infringement clearances have been established on it, and a patent application has been filed with the U.S. Patent Office.

The input for the "Sink the Battleship" problem (shown assembled on the board below, and in diagram form on back page) is dependent on the answers to the four questions. When a "yes" is given to an answer, it means the switch is "ON". A "no" answer requires the appropriate switch to be in the "OFF" position. Assume an individual selects the number 9. His answer to question "A" would be "yes", so, switch "A" would

be turned "ON". In answer to question "B" the reply would be "no"; therefore, switch would be left in the "OFF" position. Question "C" would produce an answer of "Yes". (The number selected, 9, when divided by four results in quotient of 2 and a remainder of one.) Switch "C" is turned "ON". The answer to question "D" is "yes" and requires "D" to be turned "ON".



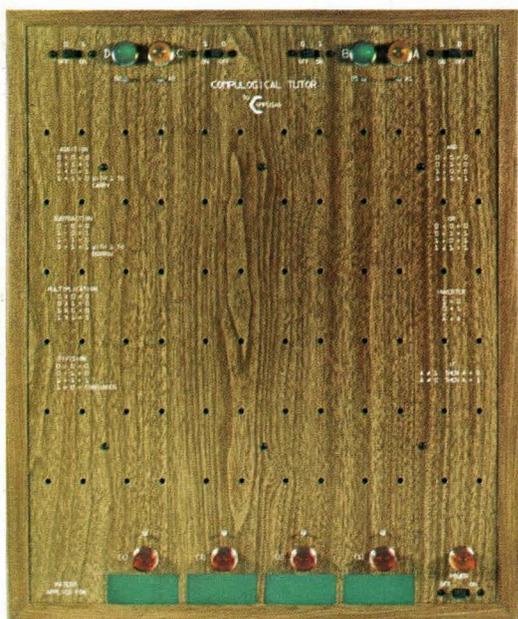
The "output" or the computer's guess as to the number the individual has selected is shown at the bottom of the panel. The output lights have positional weight, according to the 8-4-2-1 code used by today's computers. Light to the right location has a value of 1; the next light to the left has a value of 2; the next

left light has a value of 4; and the last light has a value of 8. When the power switch to the foremost right is placed in the "ON" position, the 8 value and 1 value light will go on, indicating that the number the individual has selected is nine.

WARRANTY

The manufacturer of the Compulogical Tutor, Compusad, Inc., warrants each instrument to be free from defects in workmanship and material under normal use and service, for a period of twelve months from date of purchase. Should a unit be returned to the manufacturer within this period, transportation prepaid, and is found by the manufacturer's inspection to be defective in workmanship or material, it will be repaired or replaced free of charge and returned to the owner transportation prepaid to any point in the United States.

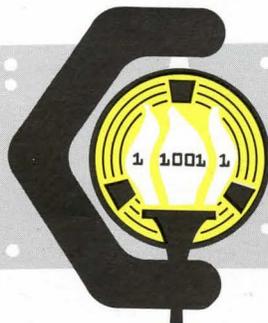
YOU RECEIVE EVERYTHING SHOWN



Your Compulogical Tutor package contains everything shown here, plus the big instruction manual (not pictured) which gives you hundreds of problems, exercises and experiments which you perform with the components shown. You receive the Main Assembly and Control Board pictured at left, plus the 18 Logic Modules shown in the photo above. You also receive an abundant supply of connecting wires of varied lengths, all equipped with "alligator" clips, and a quantity of flexible springs for making very short connections. The complement of Logic Modules (or "Blocks") comprises 4 "OR's", 5 "AND's", 2 "FLIP-FLOP's", 2 "DE-LAY's", 1 "SINGLE-WAVE GENERATOR" and 4 "NOT's". The function of each Block is fully and clearly explained in the accompanying manual.

SPECIFICATIONS

- OVERALL SIZE: 14 $\frac{3}{8}$ " wide x 17 $\frac{5}{8}$ " long x 3" high.
- SHIPPING WEIGHT: Approximately 8 lbs.
- POWER SOURCE: Six standard "D" size flashlight batteries (not furnished) which mount in retaining clips on underside of Main Assembly Board.
- CONSTRUCTION, MAIN ASSEMBLY BOARD: Top is of pressed-board with simulated wood-grain finish. Base is of sturdy wood, attractively finished.
- CONSTRUCTION, LOGIC MODULES: High impact resistant plastic, with transistorized circuits permanently sealed in. Each module is color-coded for instant identification.
- CIRCUITRY: All permanent circuitry is wired and in place within the base of the Main Assembly Board.



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