

## ELECTRONIC WIZARDY (Originally published October 1964)

After the close of the quarterly staff meeting at St. Francis Hospital on the night of September 9, the handful of conscientious staff members who remained were treated to a demonstration of one of modern medicine's newest miracle machines, the Volemetron. The Volemetron is manufactured by Ames Atomium, Inc. in Massachusetts and is described as "a versatile automatic electronic blood volume computer." It is a compact little gadget, attractively finished in a soothing color, with its working enclosed except for a number of control knobs, rows of lights, tube container holes and dial facings. It travels about in its own coffee-table-sized contraption on wheels, and probably when it is rolled up to the bedside of a patient, it will perform impressively enough in the manner of a super pin-ball machine that he hardly minds handing over the \$20.00 it costs to have his blood volume determined. When you couple electronics with radio activity, flashing lights, buzzing noises and flicking meter needles, you can't expect to qualify for a Poverty Program handout.

Anyway, to demonstrate the efficiency, accuracy and speed of the Volemetron a gallon jug containing an amount of water, known to the cc. and recorded within a pre-sealed envelope, was the subject provided for the machine to work on. A human volunteer was considered but rejected on the grounds that aside from another Volemetron, who would know whether the answer it produced was the correct one? The machine's two attendants first placed a special syringe full of the radioactive test material into the Volemetron. twisted a few knobs, and in short order, the machine confirmed that the test dose was as it should be. The test material was then injected into the jug of water and mixed, and the syringe returned to the Volemetron. The instrument again buzzed, flashed its lights and dutifully computed the amount of test material left in the syringe, subtracted this from the original amount and stored it away in one of its little, transistorized memory circuits. Next, a sample of the treated water from the jug was taken up in another special tube and placed back into the automated electronic wizard. The switch was flipped, a succession of little lights flashed back and forth across its panel for a few minutes, larger lights came on, meter needles trembled, and then with a final groan, the Volemetron clicked out its answer 1735 cc. It was a most notable performance, except for the fact that when the sealed envelope was opened, the volume of water in the jug was 3202 cc.

The Volemetron was given a second chance, and it ran through the next performance flawlessly, but it still insisted that 1735 cc. was the correct answer. This was in spite of advice from one housewife and several amateur cooks in the audience who estimating in cupfuls from a distance of twenty paces and without the benefit of isotopic techniques and transistorization, had calculated that the jug contained about 3 1/2 quarts (3312.15

cc.) of water.

Although the Volemetron's margin of error was only 46%, an offer to buy the machine for half price (\$2500) was turned down by the company representatives. The chagrined attendants concluded feebly that the Volemetron had either shorted a circuit, slipped a disc, or that some stray radioactivity was loose in the room. On which note the remaining doctors left hurriedly, abandoning the versatile marvel, the stray radioactivity, and the scene, to the good Sisters of St. Francis, probably on the theory that the Sisters had less to lose.

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