

PHIMSY

More physics philately

I got a letter from Dorothy Lasky about stamps. You remember the picture of her sitting beside our director, H. William Koch, in our June issue. She has been assistant to the director of the American Institute of Physics since 1958 when Elmer Hutchisson, who had worked with her in the Office of Scientific Research and Development, asked her to come here. Among her successes in her present post has been the Corporate Associates program, which has grown from 90 members when she took over to the present list of 140. Right now she is busy seeing that the fall meeting of Corporate Associates and member-society officers turns out as well as the programs the group has grown used to.

Dorothy came to AIP with a Hunter College mathematics major, a physics minor, a wealth of administrative experience in scientific and technical organizations and the greenest thumb in the institute. Her window sills are always loaded with self-started African violets and other horticultural delights. She also likes opera and thea-

ter. I was happy to hear from her: DEAR PHIMSY: Thanks for the attention you gave to physics and stamps when you showed us the Czech stamp and first-day cover in April 1968. Such items are of particular interest to philatelists who specialize in commemoratives of scientific events and scientists.

Did you know that AIP has a small but representative collection and display of stamps featuring physics and physicists—using a broad definition of both—and astronomy? It extends to related scientific events. I should be pleased to have philatelists among PHYSICS TODAY readers bring commemoratives to my attention.

We have had the assistance of interested physicists from the 1962 inception of our collection. AIP director emeritus Elmer Hutchisson embarked on the project with Samuel A. Goudsmit's help; Julius Miller aided with purchases in the early stages. Our most consistent donor of commemoratives on scientific events has been Serge A. Korff.

I have some favorites among recent additions, and I would like to point out



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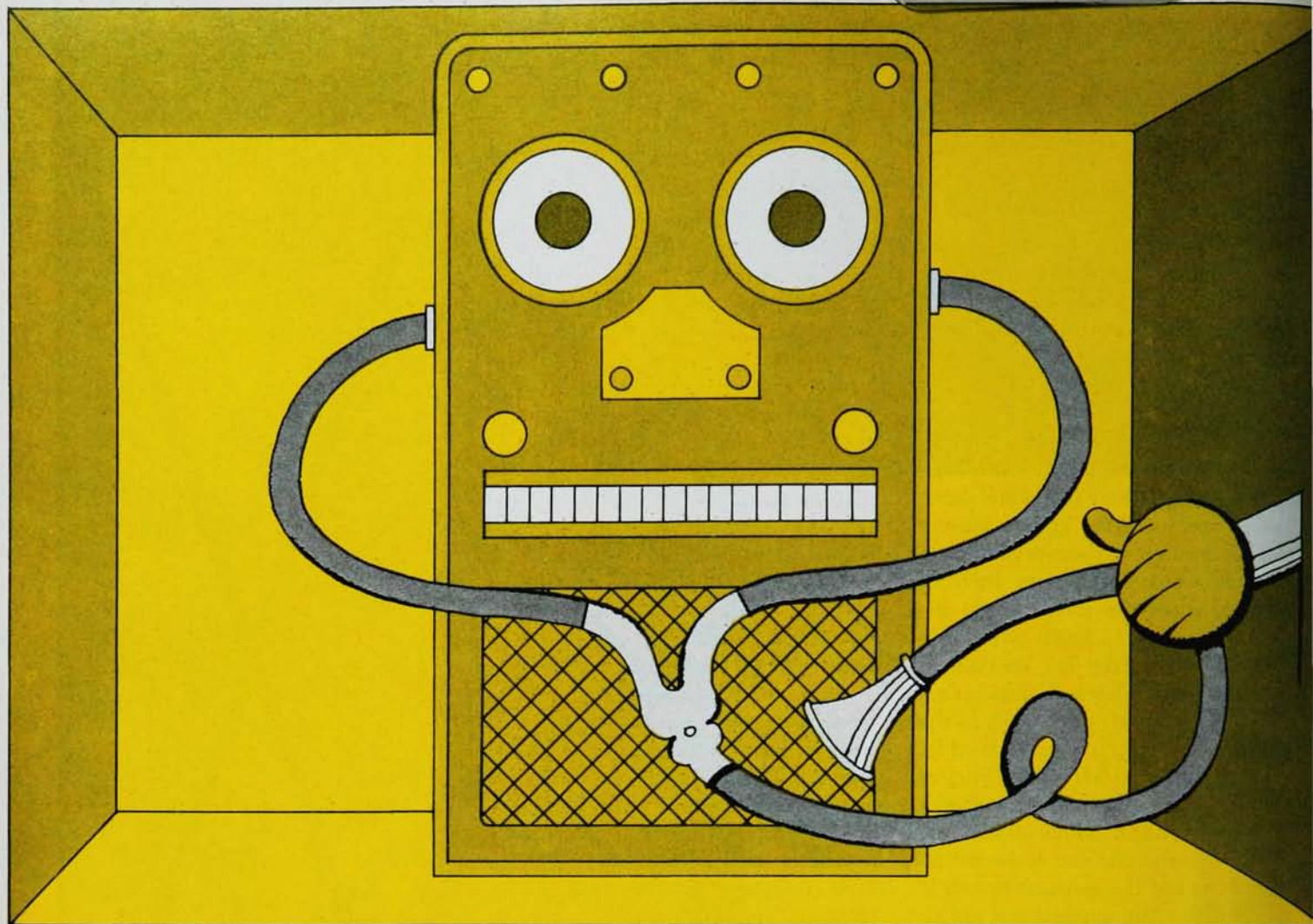


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No time for downtime

A machine as complex as the Bell System's new Electronic Switching System (ESS) must help with its own maintenance. Consider, for example, that an ESS installation in a single Bell System central office can perform nearly a billion and a half switching, logic, and memory operations per second. And that we expect it to provide service for 99.999 percent of the next 40 years. Also, that the system employs a totally new concept: "stored program control." That is, each of the many actions in connecting one telephone with another is governed by a central digital data processor which draws upon program instructions and other stored data; new and revised features are incorporated by changing memory content rather than by rewiring.

All of this makes traditional servicing obsolete, and calls for advanced

ideas in reliability and maintenance of electronic equipment.

Vital units such as the central data processor and the memories operate in pairs; if one unit ever falters, its twin maintains service. But, because there is no standby until the defect is repaired, ESS itself helps with the work. For instance, there are three principal fault-detection schemes:

"Match and Check Circuits" constantly compare critical information in duplicated units.

"Audit Programs" check that the system's temporary memory reflects what is actually going on.

"Exercise Programs" use the brief intervals between telephone calls to check all circuits, including those for maintenance.

If a fault is found, alarms operate and "fault recognition" programs take

over. These automatically find the defective unit and reroute the information flow through its duplicate. Or, if the problem is simply a memory error, it is corrected. Such actions take less than a millisecond; office operation is unaffected.

Finally, "diagnostic programs" test any faulty unit, store the results, and print them out with a reference number. A craftsman looks the number up in his "ESS Troubleshooting Manual" and finds a list of possibly defective circuit packs. He replaces one or more of them to clear the problem.

Over half of ESS—circuits and stored program—is devoted to maintenance. But only with modern techniques can so complex a system meet today's communications needs.

From the Research and Development Unit of the Bell System—



Bell Labs

a few to you. In 1967 Italy issued a stamp commemorating the 25th anniversary of the first nuclear chain reaction. It presents a fine portrait of Enrico Fermi with the Chicago Stagg Field reactor in the background. Incidentally I think the first stamp in any country with a picture of a nuclear reactor is that issued in Japan in 1957. A block of the Japanese stamps, which are a British product, were presented by Robert U. Redpath Jr to William W. Watson, who gave them to AIP in January 1966.

Sweden is issuing a good set of commemoratives that include physicists—the Nobel-prize series. Stamps of uniform design show the winners for each year that the prizes have been given. For example the stamp featuring the 1901 prizes shows Wilhelm K. Röntgen, René S. Prudhomme, Emil von Behring and Jacob H. van 't Hoff; it comes in denominations of 20, 40 and 50 öre. Denmark commemorated Niels Bohr with a stamp in 1963 on the 50th anniversary of his theory of the atom. Issued at 35 and 60 öre, the stamp shows Bohr, his model of the hydrogen atom and his equation for the electron orbits.

As to United States issues, our country has not been in the forefront in commemorating scientists. Two issues in recent years have been the Robert H. Goddard 8¢ airmail in 1964 and the Albert Einstein stamp in 1966. Incidentally Israel issued an attractive Einstein stamp in 1956. Our collection also has an Einstein stamp issued in Poland.

In case you haven't noticed, satellites and space are "in" subjects for commemoratives all over the world. Probably the best US stamp in the group is the earth-rise 6¢ stamp with Apollo 8's photograph from moon orbit. We are not attempting to include satellites and space in our collection, but I was enthusiastic about the set tenant (one picture on two side-by-side stamps) that the US issued in September 1967; it shows a man tied to a capsule walking in space. I thought it was the first such set covering an event in space. Not so. The Russians had already commemorated the June 1963 flights of cosmonauts Valentina Vladimirovna Tereshkova and Valery Fedorovich Bikovsky with a set tenant.

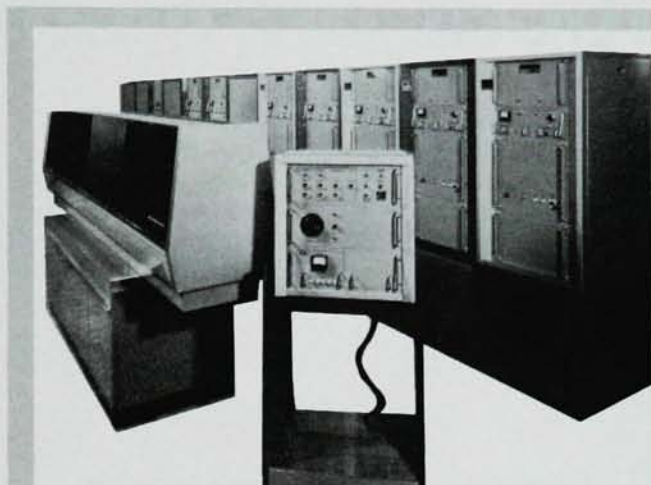
DOROTHY M. LASKY

Assistant to the Director, AIP □

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