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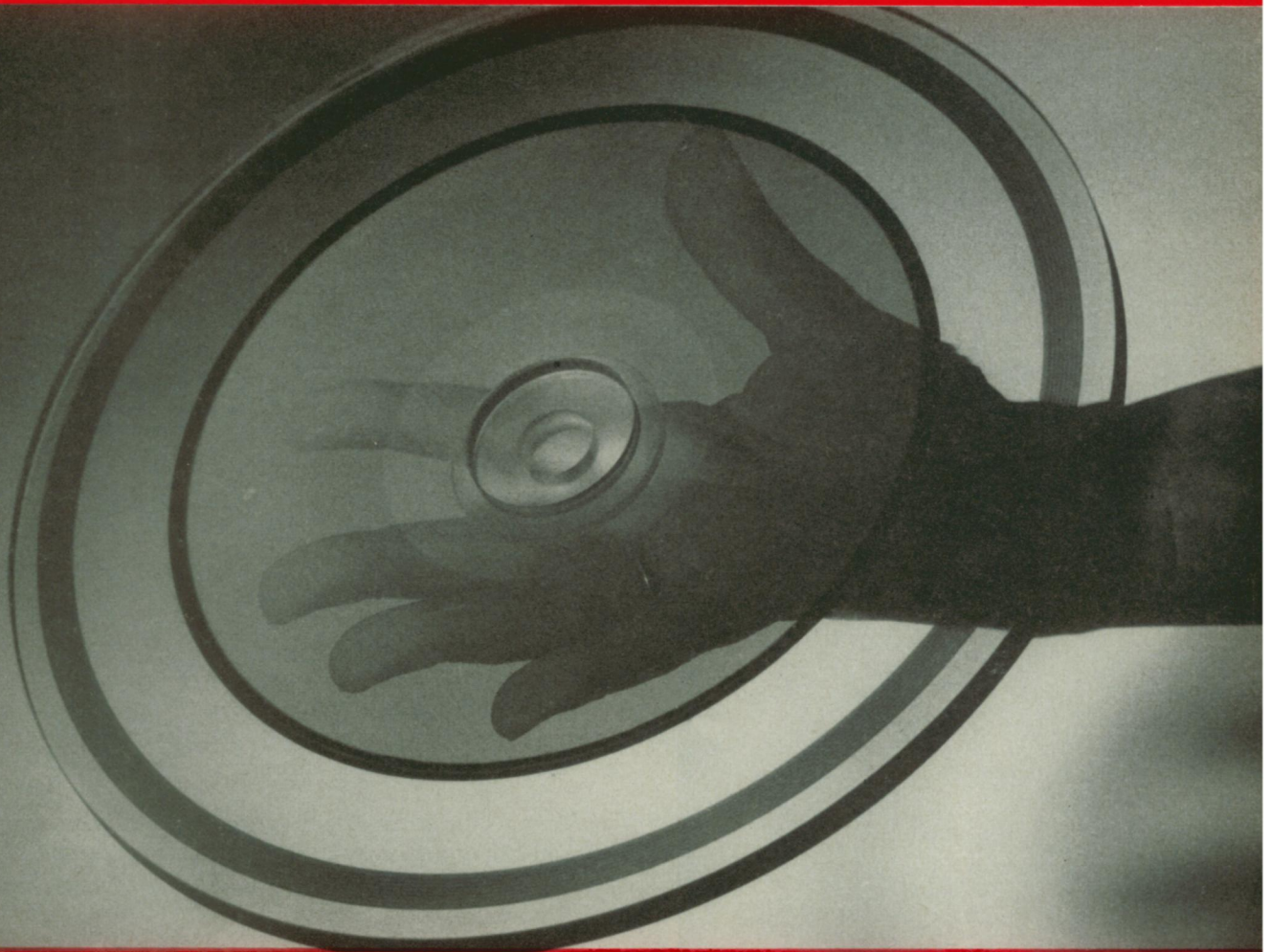
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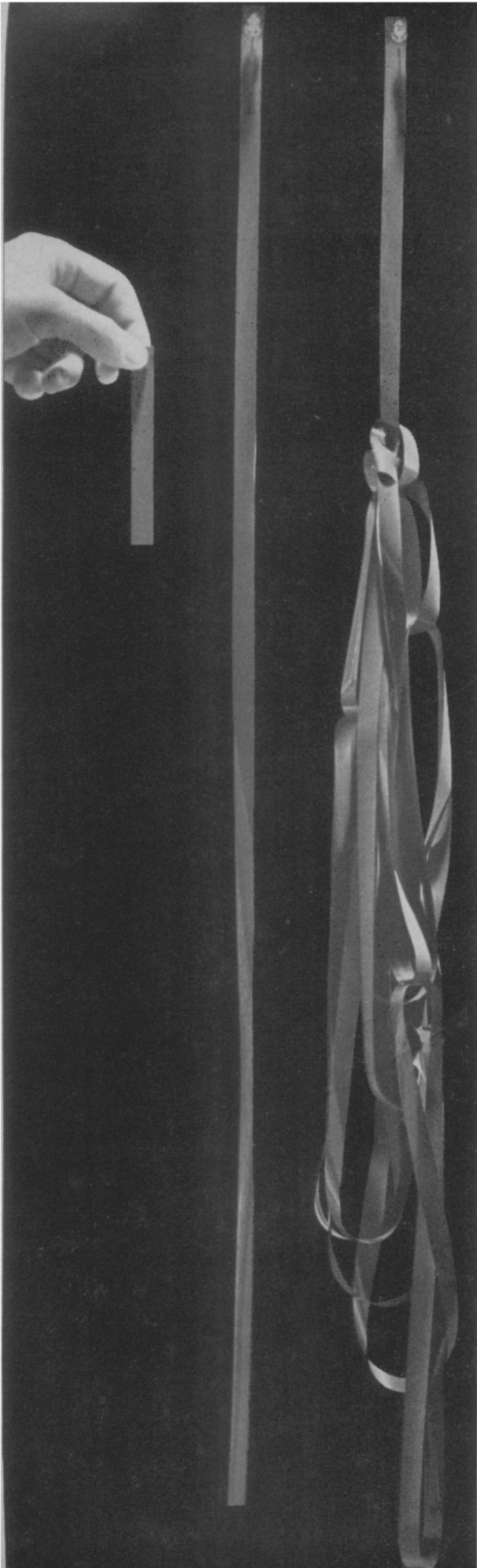
THE WEEKLY SUMMARY OF CURRENT SCIENCE



Disc Dictionary

See Page 382

A SCIENCE SERVICE PUBLICATION



One of a series

Higher Education for Computers

“Let’s put the computer in at the start of a problem, rather than just having it buzz through the computations.”

This is the approach being taken by computer specialists at the General Motors Research Laboratories as they explore ways of giving large-scale digital computers a greater role in the solution of problems. The object is to “teach” computers to apply the same rules men use in formulating, analyzing, and solving questions of modern science and engineering.

A recent outgrowth of this work is DYANA, GM Research’s new automatic analysis and programming system. DYANA is one of the first computer systems to “understand” declarative statements. For a large class of dynamic problems, the engineer can simply describe his physical system to the computer. The computer figures out how to handle it.

For the solution, DYANA automatically directs the computer to prepare a mathematical model of the system, to write its own program for solving the model, then to execute the program and compute the desired answers.

The higher education of computers currently involves studies in symbol manipulation, problem-oriented languages, character and pattern recognition, and engineering simulation.

Such advanced computer concepts are giving General Motors professional people more time for creative engineering and research—time to explore ideas and to develop “more and better things for more people.”

General Motors Research Laboratories
Warren, Michigan

Comparison of program tapes
for a vibrational problem
expressed in DYANA language,
in algebraic-oriented
language, and in the basic
machine language.