U.S. Lead In Science Eroding

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NEW YORK — The international predominance of the United States in science and technology has suffered erosion in the last 15 years, according to a study released by the National Science Foundation and transmitted to Congress by President Ford.

Such nations as the Soviet Union, West Germany, France and Japan have been improving their inventiveness, support for science and worker productivity faster than the United States, the study said.

Called Science Indicators 1974, the study was issued as the seventh annual report of the National Science Board, governing body of the foundation. The board is headed by Dr. Norman Hackerman, president of Rice University.

MORE DETAILED than the first report of its kind three years ago, the National Science Board study was the most specific compilation to date of facts about the changing relative support for innovation in the United States and other developed nations.

The study noted these major trends:

- Such a rapid increase in foreign inventors receiving U.S. patents that foreign patents now account for more than 30 percent of those issued by the U.S. patent office.
- Foreign improvements in the output of workers, expressed in non-flated dollars per civilian employe, that raised productivity in France from 56 percent of the U.S. figure in 1960 to 80 percent in 1974, from 58 to 75 percent in West Germany and from 25 to 55 percent in Japan.

● Declines in the United States of spending on research and development as a proportion of gross national product, and in the proportion of scientists and engineers in the population, contrasting with sharp increases in the Soviet Union, West Germany and Japan.

President Ford's message to Congress transmitting the study did not mention the international comparisons that formed its first chapter. The President said, "On balance, the data in this report and other evidence indicate that the nation's research and development enterprise continues to be productive and competitive."

FORD SAID THAT inflation and recession had affected science and technology "adversely" — as they had other activities.

For the last 10 years, the report said, declines in federal spending on space and defense research had more than offset large increases in support for health and environmental studies. Chiefly because of this, the proportion of U.S. gross national product spent on research and development declined from a peak of 3 percent in 1963 to 2.3 percent in 1974.

In 1973 and 1974, the study said, West Germany edged past the United States in the proportion of gross product devoted to science and engineering.

Expressed in 1967 dollars, the nation's total spending on research and development rose from $15.4 billion in 1960 to a peak of $23.7 billion in 1968, and then receded slowly to $22.1 billion in 1974. The number of scientists and engineers engaged in research and development fell back from 558,000 in 1969 to 528,000 in 1974, the report said.

Because of declining U.S. government support for defense and space projects, the report noted, the proportion of industrial research spending provided by industry itself rose from 42 percent in 1960 to 60 percent in 1973, according to an NSF study cited in the board's report.