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Meeting the Challenge

It would be nice if the superlative feat of building an artificial moon to circle the earth were a matter only of scientific significance. Then, aside from proper honors to the responsible scientists and engineers and to the country that made their work possible, interest would center on the data to be contributed to the International Geophysical Year. But, under the circumstances of a continuing threat to our efforts to preserve world peace, the fact that the first space satellite was made in the Soviet Union and not in the United States becomes an important, perhaps a dominant consideration.

Whatever the historical causes, the pervasive impression in this country has been that in science, and especially in something called "know-how," the Soviet Union plays follow-the-leader to the more industrialized Western nations. At one level, we like to dwell on such items as the latest Russian cars, which, down to the very emblem of manufacture, look like nothing so much as American models of several years ago. At another level we like to think of Soviet espionage as Russia's principle source of new scientific knowledge. At a third level, we like to think about Lysenko.

This impression has needed correction, and its holders have now had a rude awakening in a completely convincing demonstration of the excellence of Russian science and technology. The extent of the Soviet lead in those parts of physics, chemistry, metallurgy, and electronics that bear on rocket technology is not publicly known; it may or may not be known to our intelligence officers. But one piece of evidence was up in the sky on 4 October 1957 for all to see and hear. Of course, not all Americans needed this demonstration. Mathematicians, experimental scientists, and engineers who have visited Russia in recent years have come home with complimentary accounts of what they saw.

The success of the American response to the challenge implied by Soviet science and technology will be measured by something much more fundamental than the speed with which this particular feat is matched. Both the U.S. and the U.S.S.R. are capable of great achievement, but neither is capable of simultaneous supremacy on all fronts. In the military sphere, the tremendous cost of developing new weapon systems places an all-encompassing defense program beyond our means. Selection is essential. Our hope is that, if we cannot do everything in the way of conventional weapons, advanced weapons, and ballistic missiles, we can find the wisdom to select the right points at which to apply the full measure of our strength.

There are various means in this country by which the executive and legislative branches of the government come to decide upon our best bets in allocating finite resources among competing needs. The use of scientist and engineer advisers in making some of these decisions will certainly increase, as will public attention to matters of science education and research support. It is not to our credit that these changes will come about as a result of Russian success, but it will be to our benefit if scientists and government administrators learn better how to work together in the grim gamesmanship of international diplomacy.—J. T.