An Editorial

Maybe We Need a Sputnik

By John T. Correll, EDITOR IN CHIEF

WHEN the Soviet Union put Sputnik I, the first artificial earth satellite, into orbit in 1957, Americans were initially shocked, then scared, and finally stirred to action. Passing overhead, Sputnik served notice that oceans and geographic isolation would no longer provide us the security they did before.

There was another aspect to the alarm, though. The United States took great pride in its technology. Now the Russians were first in space. How could we have fallen so far behind?

In fact, we were not nearly so far behind as we imagined, but the perception was a powerful stimulant. Government programs shifted to a faster gait. Stung by criticism, schools began to emphasize math and science. Research and development flourished.

Within the decade, a well-run space program, proceeding alongside a revolution in microelectronics, led to a golden age for US technology. The commercial spinoffs that followed became fundamental to economic growth and trade.

From World War II until sometime in the 1970s, American technology was dominant in the world. It was our strongest suit—a national signature, almost—in both military and economic affairs. That dominance now appears to be in decline. As the President's Commission on Long-Term Strategy said in its 1988 report, "American technology today is less superior than it used to be."

Last year, *Research and Development* Magazine surveyed 125 industrial CEOs and 500 scientists, asking their opinion about the US position in world technology. Both groups said that we are losing ground. A third of the CEOs said that the US has been overtaken already, and 48.2 percent think we will fall behind by the year 2000. The scientists, who are closer to the problem, saw a worse situation. Only half of them believe the United States is the undisputed leader today, and sixty-two percent predict that the US will not be leading at the turn of the century.

There is abundant evidence of a decline. High-technology products from abroad proliferate in our markets. Almost half of the new US patents issued are to residents of other countries. The armed forces are increasingly dependent on foreign components for their most advanced weapon systems. Our margin of quality over Soviet weapons is diminishing.

The change has come upon us gradually, unlike in 1957 when Sputnik painted a warning across the sky. Ironically, the gradual decline may be of more consequence than Sputnik ever was.

Americans are displeased by the trend, but demonstrate little concern except when jobs or businesses are threatened by foreign competition. There is an unfortunate inclination to blame our deteriorating position on special advantages and unfair practices on the part of other nations. In some instances, we can and should pursue changes in the conduct of international trade, but that is a weak plan of action. We will not achieve much by legislating protectionism or by battering apart Japanese products with sledgehammers on television. We can find equally deserving candidates for correction at home.

When properly supported, American technology still leads the league in innovation. One of our worst problems is that we are not very good at producing the things we invent. We do not have the efficient factories, the modern equipment, or the manufacturing ability to take our technology to market at competitive prices.

In both government and industry, the priority for research and development is too low, and the funding for it is insufficient. Our educational system does not teach enough math and science. It does not produce enough scientists, engineers, or technicians. Achievement tests find American students below the international average on technical subjects. Overshadowing it all is a preoccupation with short-term results.

Technology is inherently a long-range proposition. The Wright brothers did not spontaneously climb Kill Devil Hill, crank up, and take off on December 17, 1903. From the 1890s on, they scoured libraries for anything they could read on aeronautics. They conducted experiments and exchanged letters with other experimenters. Three years before Kitty Hawk, they tested their designs in a crude wind tunnel. We do not remember them for their quarterly dividend at the bicycle shop.

Our government today is fixated on the budget deficit for 1990, not on the technology we will need in 1999. An industry that concentrates on long-term growth rather than short-term profits may see its stock drop and corporate raiders gathering for the kill.

We cannot know what will not be invented or what opportunities will be missed when we fail to pursue technological growth. We can say only that throughout history, research and development has been a good investment and that technological leadership will surely be of benefit in the future.

Without the advantage of superior technology, the effectiveness of US military forces and their ability to protect our interests will be reduced, perhaps to a dangerous extent. Economic prosperity depends on technology, too. We must have something to export besides rock music and designer jeans.

We do not need gimmicks or crash programs. We must get out of this problem the same way we got into it: gradually and across a broad front. Given a steady national commitment and a reasonable allocation of resources, the recovery will follow naturally.

Resources, however, may be the easier part of that solution, even in this era of tight budgets. Money alone will not solve the problem so long as our society remains indifferent to the underlying causes. Maybe it requires another surprise like Sputnik to shock us, scare us, and motivate us to action. ■