

Industrial R&D Plea

The Carnegie Commission urges more funds and a new structure for federal support of critical technology

IT MAY NOT TOP THE BESTSELLER LIST, BUT AN authoritative new report* on how to make U.S. industry more competitive will find at least a few devoted readers on Capitol Hill, especially since it lends substance and prestige to ideas that are already popular with congressional leaders.

This report, the latest entry in the competition on competitiveness policy, comes from a task force of the Carnegie Commission on Science, Technology, and Government. It provides a detailed plan for revitalizing the high-technology sectors of U.S. industry—not merely by increasing federal research support, but by revamping the offices responsible for deciding where and how those research dollars are spent. Many of its recommendations mirror those of powerful members of Congress such as Representative George Brown (D-CA), Senator Jeff Bingaman (D-NM), and Senator John Glenn (D-OH), who have long sought to channel more money into federal technology support programs. These legislators now have a study from an independent group chaired by former National Security Agency director Bobby Inman, and including such luminaries as Martin Marietta CEO Norman Augustine, to bolster their case.

The task force's most radical proposal is to transform the Defense Advanced Research Projects Agency (DARPA)—the backbone of the Pentagon's research and development program—into a National Advanced Research Projects Agency (NARPA). NARPA would continue to support purely military applications, but would also fund research into both "generic" commercial technologies and "dual-use" technologies with commercial and military applications. One consequence would be to make NARPA carry out purely commercial-oriented research at the request of other agencies, much as it now performs needed military research at the request of the armed forces. This is exactly the kind of role that Bingaman has been trying to push the Administration into adopting for DARPA.

The report also suggests giving the National Institute of Standards and Technology (NIST) primary responsibility for federal support of commercial R&D. Specifi-

cally, the task force stakes its hopes on NIST's Advanced Technology Program (ATP), a 2-year-old, \$36-million outfit established by congressional mandate and charged with making technology development grants to commercial firms. The report's authors propose increasing ATP's budget to about half that of NIST itself—a jump that would almost quadruple its size. They add, however, that ATP shouldn't act alone. Other agencies, such as NASA, the Department of Energy, the National Science Foundation, and the National Institutes of Health, should create their own mechanisms for funding and "diffusing" generic technologies within their domains.

On an administrative level, the report once again emphasizes the role of the Office of Science and Technology Policy (OSTP) in setting Administration technology policy. In fact, the task force envisions a more active role for the office than anyone in the Bush Administration seems ready to accept. For

instance, the report states that OSTP should "formulate" policy ideas, in addition to "collating" those offered up by other agencies. OSTP should also take the lead responsibility, along with the Council of Economic Advisers, for developing and analyzing technology policy issues. Unfortunately, such responsibilities may be more than the already overtaxed OSTP staff wants to handle. And while the OSTP budget has grown steadily and by a substantial amount over the past 3 years, the Administration has rejected the idea of a Critical Technologies Institute, an "in-house" policy analysis capability for OSTP outlined in the 1990 defense authorization bill, as unneeded (p. 1343).

The report's authors are careful to shy away from any hint of "industrial policy," an out-of-fashion term in Washington usually taken to imply federal propping up of troubled manufacturing industries. "What we propose is not an industrial policy," the report states. "Our proposals are designed to favor a vital national *capability*—the creation and application of new technology." But if the report is designed to capture the imagination of the Administration, its authors may be disappointed. They will probably have better luck in Congress, which has always been more sympathetic to such proposals. ■ DAVID P. HAMILTON

National Science, Technology Medals

The 1991 winners of the National Medal of Science and the National Medal of Technology were announced by President Bush at a White House ceremony on 16 September. The awards are given for a lifetime of scientific achievement.

The following were awarded the National Medal of Science:

Mary Ellen Avery, Harvard Medical School; **Ronald Breslow**, Columbia University; **Alberto P. Calderon**, University of Chicago; **Gertrude B. Elion**, Burroughs Wellcome Company; **George H. Heilmeier**, Bellcore; **Dudley R. Herschbach**, Harvard University; **G. Evelyn Hutchinson**, * Yale University; **Elvin A. Kabat**, Columbia University; **Robert W. Kates**, Brown University; **Luna B. Leopold**, University of California, Berkeley; **Salvador E. Luria**, * Massachusetts Institute of Technology; **Paul A. Marks**, Memorial Sloan-Kettering Cancer Center; **George A. Miller**, Princeton University; **Arthur L. Schawlow**, Stanford University; **Glenn T. Seaborg**, University of California, Berkeley; **Folke K. Skoog**, University of Wisconsin, Madison; **H. Guyford Stever**, Consultant, Washington, DC; **Edward C. Stone**, California Institute of Technology; **Steven Weinberg**, University of Texas, Austin; **Paul C. Zamecnik**, Worcester Foundation for Experimental Biology.

The following were awarded the National Medal of Technology:

Stephen D. Bechtel, Jr., Bechtel Group Inc.; **C. Gordon Bell**, Stardent Computer; **Geoffrey Boothroyd and Peter Dewhurst**, University of Rhode Island; **John Cocke**, IBM Corp.; **Carl Djerassi**, Stanford University; **James J. Duderstadt**, University of Michigan; **Robert W. Galvin**, Motorola, Inc.; **Grace Murray Hopper**, U.S. Navy; **F. Kenneth Iverson**, Nucor Corp.; **Frederick M. Jones** and **Joseph A. Numero**, * Westinghouse Electric Corp.; **The Pegasus Team: Antonio L. Elias, David S. Hollingsworth, Robert R. Lovell, and David W. Thompson**, Orbital Sciences Corp.; **Charles E. Reed**, General Electric Co.; **John Paul Stapp**, University of Southern California.

*Awarded posthumously

*Technology and Economic Performance: Organizing the Executive Branch for a Stronger National Technology Base, Carnegie Commission on Science, Technology, and Government, September 1991.