A work overload at the NBS

Most of what the National Bureau of Standards does is pretty dull stuff by TV news criteria, and it has little political clout. That could be why a worrisome trend at the NBS—a systematic squeeze on the agency's budget—has attracted little attention until lately.

Recently, though, many businessmen have become concerned. "The trend is very troublesome, and it eventually could be disastrous," says W. Dale Compton, vice-president for research at Ford Motor Co. He is one of five members of an NBS oversight committee that recently reported on the situation to the Commerce Dept., which houses the NBS.

For industry and commerce, and for every level of government as well, the NBS is to measurement what Webster's Unabridged is to language: a point of common reference and a final arbiter of meaning. The NBS has been the source for calibrating the instruments used by quality control engineers to measure the width of tiny lines on integrated-circuit chips; by surveyors to gauge the height of mountains; by banks, grain elevators, and butcher shops to weigh gold, wheat, and steak; by government inspectors to determine the proportion of toxic vapors in factory air. And by extending the science of measurement to higher levels of precision, the agency has laid the basis for much of the technological advance of recent years.

The budget squeeze, which industry executives blame on Congress, has forced the NBS to trim its services to industry as well as its longer-range research. The problem, notes Ernest Ambler, acting director of the bureau, is that it is tempting to sacrifice long-range programs to salvage short-term objectives. "There comes a point where you begin to threaten long-range institutional viability," he warns.

Loss of an effective NBS could be costly to the nation. The cutbacks "will be felt in all major industrial sectors, all levels of government, and ultimately by all consumers," says John Minik, a Hewlett-Packard Co. executive and president of the National Conference of Standards Laboratories. Whatever functions the NBS drops, he says, "will have to be taken up by private organizations. And that means higher costs because a profit will have to be built in."

Discrepancies. TRW Inc. has already seen that happen. The NBS no longer calibrates the special instruments that are used to measure the energy emitted by high-power microwave tubes. "We'll have to buy more equipment and spend a lot more engineering time to guarantee the same level of accuracy," says Marilyn L. Hed, manager of metrology for TRW's Defense & Space Systems Group in Redondo Beach, Calif.

Some industry executives fear that deterioration of the bureau's role could ultimately lead to more serious losses. As standards become decentralized, the chances of cumulative discrepancies in measurements will increase. This could raise havoc with such precise arts as satellite communications, not to mention automated production lines.

The problem at the NBS is that its tight budget comes in the face of additional tasks. In the past dozen years, Congress has enacted numerous laws that require the bureau to apply its expertise to such social problems as reducing fire losses and making lawnmowers safer. All told, the NBS has accumulated 15 new missions since 1965, notes Edwin A. Gee, senior vice-president of Du Pont Co. and chairman of the oversight committee. "But its budget is down 10% in constant dollars, and the
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number of employees is essentially unchanged." Actually, the NBS employee roster, currently 3,054, has dropped by more than 100 in the last 12 years.

The NBS has been given a hodgepodge of new jobs. A few years ago, it took on the central responsibility for fire re-

Acquiring 15 new tasks since 1965 but doing with 100 fewer workers

search. Recently, it has had to turn to energy matters. Under a 1974 law, the NBS was charged with evaluating inventions to find those that might save energy, and it has screened 4,000 ideas so far, fingerling 28 that it deemed worthy of federal funding. And under a 1975 law, the bureau is developing tests to determine the quality of recycled oil. As such jobs pile up, one official says, the NBS is in danger of becoming an "ad

hoc job shop."

Cutbacks. Most of the service cutbacks are coming in areas that are less important to Congress—though, in many cases, vital to industry. The bureau recently stopped doing electromagnetic calibrations. It reduced its research into remote-sensing techniques. By the end of the year it will pare its work in humidity flow, dimensional measurement, characteristics of metals and polymers, and building research. "We’re trying to make cuts where it does the least harm and where recovery would be relatively easy," says Raymond G. Kammer, a senior program analyst.

The NBS has also had to kill some projects before they got started. The Engineering Mechanics Div. a year ago was about to begin work on a standard for measuring dynamic forces—potentially a fundamental tool for many industries. But the funds, says Peter K. Stein, president of Stein Engineering Services Inc. in Phoenix and a member of two NBS committees, were funneled instead to such work as evaluating the energy efficiency of washing machines. "Ten or fifteen years from now," says Stein, "we will be sorry."

The bureau believes that what it needs to reverse the trend is not more funding but more people. On top of its fiscal 1978 appropriation of $70.4 million, it expects to take in about $48 million for services rendered to the military and other government agencies and $6.5 million for calibration devices and services furnished to private industry. If it were allowed to hire more people, the NBS says, it could double its service revenue.

The oversight committee agrees that the NBS needs either more people or fewer assignments. And it has convinced Under Secretary of Commerce Sidney Harman of this. Harman, a former industrialist, says that he will become a "vigor ious advocate" for NBS.