

waste treatment and control methods, although the immediate cost of doing so may not always be favorable. Often this calls for particular adaptation of general techniques, illustrations of which were given in MCA testimony before the Special Subcommittee on Air and Water Pollution, Senate Public Works Committee, on June 24, 1965. I will not repeat those details at this time.

The industry survey referred to above revealed that those same companies were spending more than \$8 million annually on air and water pollution control research. In the recent past MCA underwrote a 5-year research project, now concluded, at the Franklin Institute on taste and odor in water, and is now in its third year of sponsorship of a 4-year program at Washington University in St. Louis on the behavior of organic chemicals in the aquatic environment. Also, MCA has joined with several other trade associations in sponsoring research on emphysema by the Industrial Hygiene Foundation.

From these references it is self-evident that we see the need of continuing research. Indeed, in MCA's expanded environmental health program announced about 2 months ago, a considerable portion of the projected funds are being planned for greater research effort on behalf of the chemical industry. In appearances before congressional committees, our witnesses have supported Federal research in this field, and we fully expect to continue to do so. A valuable dividend from research activity is the development and training of technically qualified personnel, already insufficient in supply to carry on these vital programs.

Because of its usefulness to everyone, research efforts on determining environmental criteria would seem to be a prime area for Federal research attention. Another relates to developments which are most needful for use at publicly owned and operated facilities, for example municipal treatment works, and which may not readily lend themselves to commercial interests. The greatest stimulus for research by industry and the private sector is the potentiality for capitalizing on the outcome of research endeavors, whether it be directed toward cost reduction in relation to a company's internal operations or marketing of technology to others. Especially in the latter, patent protection can be a vital qualification for inducing research interest; lack of it may actually hamper new developments. A new idea equally available to everyone may suffer lack of attention because of the unprotected risk involved in reducing it to practice.

Except in programs of giant proportions, such as your own space exploration program, it is our impression that greater opportunity for industry to engage in research supported by Government contract would not generally be a substantial stimulus to progress. On the other hand, there may be additional opportunities where Government-industry cooperative investigation will be helpful. MCA presently has one such activity in working with the Division of Air Pollution of the Public Health Service in gathering data on atmospheric emissions from selected chemical manufacturing processes. This project operates under a formal memorandum of understanding, with each party defraying the expenses of its respective part in the effort. I have here a copy of one of the early reports from this study which is available to the public generally. (Copy provided may be found in the committee files.)