

in the computer field that it couldn't be done. To make a long story short I agree with you.

The fifth and final point I wish to make this morning is intended to be responsive to the question raised by your panel, "What are the prospects for application of military-space research and development capability to sanitary engineering and environmental science?" Perhaps this question can be answered most directly by citing an actual example involving a subsidiary of one of our Connecticut aerospace companies, United Aircraft Corp. This work was done by United Technology, which is in Chairman Miller's State of California. The particular technological development was the design and fabrication of rocket casings for the solid propellant used in the strap-on boosters for the Titan III-C space system. These casings had a diameter of 120 inches and were made of Fiberglas which was very dense, very thick, very strong, very effective—and also very expensive. A young United Technology Corp. engineer, Dick Seymour, recognized that the manufacturing process could also be applied to earthbound uses. The civilian application involved was to identify a "filler" which would at once increase the rigidity of the Fiberglas casing and lower its cost. Ordinary sand turned out to be effective on both counts. The resulting product—a sample of which I hold in my hand—holds attractive promise as a material cheaper and better than traditional underground piping for the transport of water or disposal of sewage. Not only are prices competitive, even for small sizes, but for the same cost the following advantages are obtained:

- Greater strength (and hence less breakage)

- Greater versatility from the standpoint of ease in drilling, shaping, etc.

- Smaller frictional coefficient

- Greater ease of coupling of sections (which reduces labor costs).

Even more direct applications to the problems of pollution are envisioned. Preliminary design plans have been developed for an entire sewage treatment process within a long pipeline submerged under a river bed. Not only would these long subterranean pipelines with sewage treatment capabilities be economical to install, but it is believed that they would have distinct advantages in distributing the discharge of treated effluent over an extended range of the river body. Further development is obviously required, but I venture to predict that we will hear more about this particular space science "fallout" during the years ahead.

In closing, I would suggest that these hearings are a significant step toward the development of rational, well-conceived national policies to deal with environmental problems. An additional step will be a reexamination of:

- The organizational structure at the Federal level along the lines recommended by the President's Science Advisory Committee in a recent report, "Effective Use of the Sea," and the National Academy of Sciences in another report, "Weather and Climate Modification—Problems and Prospects," both of which stress the fundamental unity of the environmental sciences and the need for a Federal effort of "critical" size in order to be effective.

- The decisionmaking mechanisms at the local, State, and regional levels with particular attention to the decentralization of decision-