LETTERS

Diesel Engines and Air Pollution

Frederick J. Hooven's encomium to the diesel-powered automobile (Letters, 2 Sept., p. 940) as a solution to automotive air pollution is puzzling in several respects. First, he fails to deal with the acknowledged problem of aldehydes and particulate emissions, and he might well have added "malodors" to this list. Second, he makes the statement that the diesel does not require "precise adjustments to maintain its low level of emissions" when in fact frequent precise adjustment and exquisite cleanliness of the fuel jets are the key to correct engine performance. Third, he pooh-pooh's the detrimental effect on air quality of quadrupling NO_x emissions from mobile sources by hypothesizing that gasoline-powered autos will probably do that poorly after a brief period of service because of inadequate engine maintenance. This may be correct, but the solution would seem to be periodic vehicle inspection and repair of defects in the same manner as most states now require inspection and repair for safety equipment.

The nature and amount of emissions from a poorly maintained diesel automobile are not mentioned, nor are the detrimental effects of incorrect engine operation (lugging) discussed. My studies of emissions from standard- and catalytic-muffler-equipped diesel buses show clearly that good maintenance practices are as essential for diesel as for gasoline engines if vehicles are to operate with minimum air polluting emissions.

Diesel-powered automobiles may be the apple of Frederick Hooven's eye, but they are not the solution to air pollution from mobile sources.

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Basic Research Productivity

William D. Carey's editorial on the future of basic science (26 Aug., p. 825) calls attention to the right problem at the right time. First, it is quite evident that whether or not the science community thinks the budget for basic science should be increased 100 percent or even 10 percent (above the inflation rate), the likely prospect is for flat or slightly decreasing budgets.

What credibility can the science community—including the economists, social scientists, and management scientists—have, when we show so little confidence in the strategies we recommend for other sectors of the economy. What about an honest attempt at a scientific, zero-based budget for U.S. basic research? If one can look for a radical reform of the welfare system with the incentives to work, why not a complex, productivity-related formula for funding academic units? If the Department of Defense can look hard at increasing efficiency to get more bang for the buck, is it not fair that we ask of ourselves that we produce more papers and graduate students for the same dollars (more miracles per megabuck)?

I recommend that AAAS meeting planners move to second Carey's motion by scheduling a symposium on zero-based science budgets, alternative funding mechanisms, and increasing efficiency of the science machine. Moreover, if we have the courage of our convictions, the science community should encourage congressmen Teague or Thornton and senators Kennedy, Stevenson, or Proxmire to schedule hearings on appropriate levels and alternative models for basic research funding.

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Drinking Water: New Health Problem

Coal tar and asbestos have long been identified as powerful carcinogens. Paradoxical as it may seem, it has recently been found that a commercial coating made from these two carcinogenic materials has been applied to the interior surfaces of thousands of municipal water tanks and pipelines used for drinking water throughout the country for many years, with federal approval. Many cast-iron water mains have been dipped in coal tar. Asbestos cement pipes are also in use.

This situation surfaced at Pascagoula, Mississippi, in June 1977 because of taste and odor complaints and is being intensively studied by federal authorities. The Environmental Protection Agency (EPA) and the Food and Drug Administration have overlapping cognizance, and their respective roles were still not resolved as of early September. The EPA lab at Athens, Georgia, has shown that 17 different organic chem-