Letters

Diesel Emissions

I had no idea that my letter of 2 September would convey the sort of enthusiasm for the diesel engine that it did to Melvin W. First (Letters, 30 Sept., p. 1322). I intended to express only the somewhat wistful hope that Congress would settle the emission-control regulations in such a way, and for a long enough period, that people might feel justified in conducting some development work toward overcoming the stated shortcomings of the diesel. I probably should have made it clearer that I was not proposing we rush into diesels as they stand.

First extrapolates his studies of diesel buses to cover the passenger diesel. However, the passenger diesel, a prechamber engine, is much more civilized in its behavior than the open-chamber, commercial engine. Moreover, the latter is commonly subjected to overloading, which I assume is what First means by his reference to "lugging." This is the practice of gaining additional power by injecting more fuel than can be burned cleanly, resulting in the selective burning of hydrogen with large emissions of unburned carbon and rapid sooting of injectors. It results in large increases of all sorts of emissions and is not an option with passenger-car engines.

Concerning NO_x emissions, I make no reference to the effects of NO_x on air quality and don't "pooh-pooh" anything. What I do say is that, while gasoline engines can be set up for a NO_x emission of 0.4 gram per mile, they require a balance of engine variables so precise as to be precarious and unlikely to survive under prevalent conditions of maintenance.

It is easy to dispose of the problem by stating, as First does, that all we need to do is to inspect cars for engine variables and emissions the way we now do for safety equipment, but this is, in fact, extremely difficult. Safety-equipment inspections are superficial, visual once-overs, while inspection for engine variables and emissions requires time, trained personnel, and expensive, sophisticated equipment. We cannot suppose that by simple edict we can accomplish the upgrading and expansion of the automobile maintenance and repair industry—one of the largest and most dispersed of our industries—and then put in place the enormous federal establishment needed to supervise and enforce it all, especially in view of the fact that it has not been found economically or politically possible to take any action to reduce the largest mobile source of pollution—the past-model cars.

Since I've been convicted of posing value judgments anyway, let me say that, if I had my choice between a fairly certain 1.5 grams of NO_x per mile and 0.4 gram per mile under the conditions of that sort of regulation, I would go with the nitrogen oxides.

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Medical Schools' Problems

I concur with Philip H. Abelson's editorial, "Coercion of medical schools" (16 Sept., p. 1137). Few, if any, medical schools are willing to have students directly "assigned" or "matched" to them by any outside agency or individual. This is not only a problem for the medical schools but brings up the much larger issue of defining the government's appropriate role in relation to the university. I hope our colleagues in the general public and scientific community will convey to their "representatives" their opinions on this key issue.

It is important to note that passing the first part of the national medical board exam cannot be equated with the successful completion of a quality controlled, integrated medical curriculum with periodic appropriate assessment. Scores on this exam are used by most medical schools as an external parameter to assess performance in addition to their own internal evaluation and standards.

The legal morass surrounding the regular admission process has led most medical schools to state that the applicant was qualified, but that the competition was such that they were unable to offer a position. In an effort to be humane and avoid litigation, medical schools have fostered a partial myth that there are large numbers of qualified students who must seek their education abroad.

Finally, it is of interest to note that, in 1975, 69 percent of the U.S. citizens seeking to transfer from foreign to U.S. medical schools through COTRANS (the Coordinated Transfer Application System) were from three states: New York (41 percent), New Jersey (14 percent), and California (9 percent) (*1*). At the risk of sounding extremely provincial, it seems that the citizens of many states may be footing the expensive bill of educating the medical students of a few other states.

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References

1. W. F. Dube, *Characteristics of U.S. Citizens Seeking Transfer from Foreign to U.S. Medical Schools in 1975 via COTRANS* (Association of American Medical Colleges, Washington, D.C., 1977), p. xi; available from ERIC Reproduction Service, Arlington, Va.

"Watchdog" of the Government?

Since 1945, the frontiers of scientific research have been expanding at a greater pace than at any other period in history. Most of the growth in this country has resulted from increased financial support by the U.S. government, which has become the chief patron of modern scientific research. By this means, the government has been able to profoundly influence the course of scientific research in both the public sector (for example, the National Institutes of Health) and the private sector (for example, the academic community).

The present situation, in which scientists in the private sector depend upon government sources for financial support of their research and, in many instances, their livelihoods as well, is obviously an unhealthy one. In particular, the autonomy of the university, historically and necessarily one of the most independent institutions in our society, is gradually being eroded. It is unreasonable to expect researchers to be critical of the government's specific research programs and allocations; a clear conflict of interest thus exists. Yet, there is an equally clear need for a review of and, if warranted, a criticism of both government research allocations and programs that result from such allocations. Obviously, such a review would best be done by an organization that is financially independent of the government, staffed by scientists, and with innovative, imaginative leadership that is able to both evaluate existing government programs and develop plans for and recommend the initiation of new ones.

Organizations such as the Brookings