



spectral lines



Society-proof design

Russell Baker, *The New York Times'* sharp-witted and sometimes acid-tongued syndicated columnist, is inclined to comment on sociotechnical issues in a way that is not complimentary to technologists, but that, at the same time, usually contains an element of truth.

Not long ago, however, he wrote the following:

"This is a telephone. It is not making a sound. See how quiet the telephone is? See how happy it looks?"

"Why does the telephone look so happy? It looks happy because it makes money without doing any work. It is congratulating itself upon being such a clever machine. It is thinking that this man in whose house it is living will soon be giving it even mom money to let it take up room in his house.

"Look at the man. Can you see the strange hand removing money from his pocket? It is very hard to see. You must look very closely. The hand does not belong to the man. It belongs to the telephone. The hand is collecting the money the telephone charges the man for living in his house.

"Every year the telephone charges the man \$90 for just sitting there doing nothing. Is this man not dumber than any one you have *ever seen?* He has shelves of books which also sit in his house doing nothing, but he would be very angry if one of the books put its hand in his pocket and removed \$90 for the privilege of taking up house space."

Although Baker's column went on to elaborate on the possibility of rising rates and new charges for services (like Information) that were once "free," it was shot through with a certain naivete about the economics of building and operating a sophisticated system like the telephone network. As a result, Baker may have alienated, temporarily at least, some of his readers who admire his normally constructive satire.

On the other hand, Baker's expressed viewpoint may be symptomatic of a larger societal problem—the public's rising antagonism toward the technical establishment and its evident satisfaction at seeing it get its "comeuppance"—sometimes regardless of the source or the consequences. For example, when the New York Telephone Company suffered its recent disastrous fire (*Spectrum*, April, p. 26), many citizens promptly suspected that the blaze was started by disgruntled employees or other anti-phone company persons. In any event, a rash of telephone company fires of an unquestionably incendiary origin quickly followed. Many believe they were not the acts of a single person, but rather that the initial fire triggered several unstable persons into independent action; and that the frequency of these incidents was enhanced by a widespread tacit approval that the telephone company is "fair game" for at least some unspecified forms of retributive action. It seems the public is becoming inured to increasing destructive action on the part of even "normal" persons; such was

hardly denied when a Communications Workers of America spokesman in a recent television interview suggested with some matter-of-factness that arson by employees was not to be ruled out, since widespread "employee discontent" exists as a result of their "harassment" by the company. In contrast, back in 1940, a disgruntled employee who planted bombs in Con Ed plants in retaliation for an injury suffered on the job, was committed to a hospital for the criminally insane for a period of 16 years and 8 months. (Today, perhaps, his actions would merely be categorized as employee discontent!)

An even larger segment of the general populace seems to condone nonviolent ripoffs of the utilities. New York Telephone Company recently reported evidence showing that some 25 000 subscribers during a survey period installed "blue" or "black boxes," or otherwise cheated the company of services. (The reader should not misconstrue our message to be that all technologists "ride white horses" and it is the rest of society that has gone awry. Don't we all know colleagues who would build black boxes if they had the schematic, and others who would *even* requisition the parts from the company stock room?)

The utilities are not alone in their vulnerability to attack by the more antisocial elements of society. Consider, for example, the airlines. The air traveler of the Fifties would have given no credence whatsoever to forecasters had they told him that by 1975 he'd be paying a surcharge for the "service" of having his baggage and his person searched in order to provide "security" during his flight.

One can speculate on the reasons for society's apathy in the face of physical and/or economic attacks on The System. Surely there has been a rise in consumerism, a broader application of civil disobedience, and a feeling by more segments of society that unjust or obsolete laws or regulations can be changed *de facto*, by simply disregarding them. Whatever the reasons, the impact on the technologist himself is clear. He must consider new constraints, occasionally even thinking the unthinkable. His designs must not merely be reliable, environment-proof, and internal failure-proof; they must also be saboteur-proof, foolproof, vandal-proof, criminal-proof, and proof. And, as in the case of any superior design, he must do his thinking and planning at the outset, or else become caught up in "fixes," or in trying to design costly and complex auxiliary systems to protect existing plant.

Ironically, today's technologists may thus be required to produce equipment and systems that not only perform socially desirable functions, but that are designed in such a way as to protect society from itself, or at least from a hitherto insignificant segment of itself that now seems to be growing in size and impact.

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