

journal dealing with applied physics and considered the subject unsuitable for *Physical Review Letters*, a judgment in which we concurred. As is usual in such cases the author objected to our decision and requested reconsideration. At about the same time we received unsolicited letters from two prominent fellows of our society urging us to publish the letter quoting among other arguments the international interest aroused by reports of Ovshinsky's discovery. On the basis of these strong recommendations we reversed our decision and accepted the letter.

The publicity surrounding the letter did not originate with us, nor with the American Institute of Physics. That was entirely the work of the author and the press.

S. A. GOUDSMIT
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Physical Review Letters

Morality and weapons work

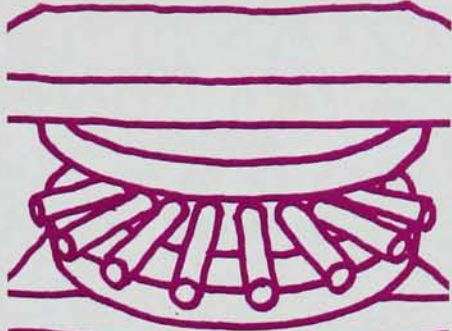
In your November *PHYSICS TODAY* editorial you presented some arguments for preserving the current forms of studying and discussing the social and political problems of science. I dearly wish that we lived in a world in which those forms could adequately deal with the problems at hand and allow us to devote all our time to teaching and to physics. But the world is not that way now, and I would like to bring to your attention and to that of the readers of *PHYSICS TODAY* just such a problem.

In the San Francisco Bay area in which Stanford University is situated, there are a large number of companies and organizations involved in the research and development of highly technical, war-and defense-related products and services. A grave and painful problem has developed among a not insignificant number of scientists and engineers in these organizations. These men, who are highly skilled in their field and have prospering careers, are finding it morally difficult to continue in their positions and careers. Some of these men entered the defense-related field many years ago when the ideologies associated with national defense and the nature of the threats to our nation's security were different or at least more real to them. Others entered these fields more recently. But the moral problems of the Vietnam war have changed their attitudes. For many of these men their entire profes-

sional status, their financial position, their knowledge and their self-esteem are involved in fields for which civilian industries have little or no need. Some have sacrificed careers to leave the field; others try to draw distinctions between working on defensive as against offensive weaponry. For the young men, the leaving of a particular position may easily involve a change to 1A status in the draft in addition to all the other personal problems a change involves.

Now as educators, and particularly educators of graduate students, we know that some of those we educate now in physics, so purely and so enthusiastically, may find themselves in this position five, or 15 or 25 years from now. As teachers we are not neutral in this and we are not guiltless. The American Institute of Physics and its member societies are strongly and positively urging students into physics careers. In particular, *PHYSICS TODAY*, with its very interesting format, its timely articles and informal style, is certainly an important influence. Yet, nowhere in *PHYSICS TODAY* or in the meetings of the societies is this problem discussed—or even brought to the attention of the students and young physicists. It is no use saying that they are clever enough to think about such things or that if they read enough, they will learn about such problems. Graduate students tend to think about their careers with a more or less sizable portion of daydreaming—a quiet teaching position among adoring students, a set of Maxwell equations for the nuclear force field or a substitute for the transistor. We older physicists and educators who have learned something of the twists and turns of life and careers have a duty to put some reality into these dreams.

I have two suggestions as to how to insert this reality. First, *PHYSICS TODAY* should open its pages to a discussion of this problem. I know we can find some accurate documentation from groups and industries in this area. Certainly opposing opinions will also be needed. Second, in the placement service provided at the meetings of the societies, particularly at the American Physical Society large meetings, an effort must be made to have employers clearly designate weapon- and defense-related positions. I have heard the disquieting story told several times that some employers conceal the weapon or defense aspects of a position in the first



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interview. Sometimes visits are made to the organization's area by the prospective employee; wives are shown housing; offers are made; fringe benefits emphasized, and, in general, the prospective employee is psychologically committed before all aspects of the position are disclosed.

Let me be very clear. I am in no way trying to disparage students and young physicists who feel a responsibility to national security even above personal considerations or those who are not involved with these questions. I am concerned with admittedly a minority of physicists who are going to have ethical or moral problems in working in at least some parts of the national-security field. It is for them we must face this problem and perhaps in the end it is for ourselves; for it is difficult to teach well with a bad conscience.

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Blame the universities

For some time the hue and cry concerning the decreasing enrollments in both high-school and college physics has been loud and clear. Many different ideas have been proposed to explain the loss, but should not the entrance requirements of our colleges and universities be the culprit?

The young people in high school are like any other segment of the population: They will do only as much as demanded. The college entrance requirements, in most instances, state that *one year* of a laboratory science must be successfully passed in the 11th or 12th grade of high school, this coupled with the demand that the college applicant be in the upper percentile of his graduating class. Now, the question: "What high-school student will risk his grade point average and involve himself in all kinds of work to take a course that no one says he must?"

The athletic departments of the same schools encourage their participants to start their athletic careers from the seventh grade or earlier.

If the colleges do not make more science requirements for application, how can we expect to have any hope of a "farm system"?

How many potential physics students are we losing because they were never exposed to the subject to get an

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