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letters

How sad that the product of such elegant technologic achievements is useless because of inattention to simple but important details. We concluded that attempts to redact manuscripts with inadequate space results in an increase in typographic errors. Therefore, at the National Academy, we sent all such manuscripts back to the authors. We required side, top and bottom margins to be no less than 4 cm and interline white space to be 6 mm or greater. Our editors could write smaller than this, but the keyboarders could not read such writing.

Which leads to the bottom line of this sermon. The typescript must be easily readable by a busy editor. And the marked-up transcript must be easily readable by a keyboarder. Editing time, keyboarding time and proofreading time are too expensive to warrant working on manuscripts that are not in good form physically.

BERNARD K. FORSCHER

Mayo Clinic and Mayo Foundation

1/85

Rochester, Minnesota

These remarks first appeared in the Newsletter of the Society for Scholarly Publishing 6, issue 5 (1984).

AN APS EDITOR COMMENTS: Although Bernard Forscher's comments are directed toward manuscripts produced by word processors, much of what he says is applicable to all kinds of manuscripts.

The journals of The American Physical Society have never been as rigid in their requirements as Forscher's letter indicates the National Academy to be. Nevertheless, we do make certain demands, and it would probably be helpful if authors understood the reasons for them. In addition, some things that we are not particular about may still influence a referee's attitude about a paper, so that authors can do themselves a favor by paying attention not only to the content but also to the preparation of their manuscripts.

GEORGE L. TRIGG

3/85

Physical Review Letters

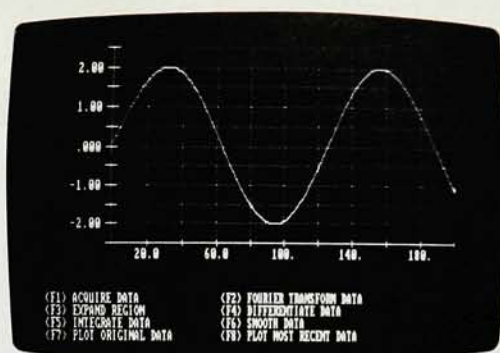
Fellow-travelers

In the worst years of Stalin's terror, there was a category of educated Westerners, who not only loudly applauded Stalin, but from time to time visited the Soviet Union and saw there what they wanted to see, not what was really there. Denizens of the Communist paradise would read their reports wondering what it was on the part of those foreigners: unbelievable short-sightedness and stupidity or a cynical pursuit of their own goals?

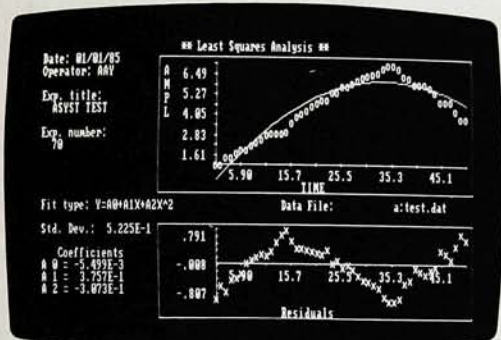
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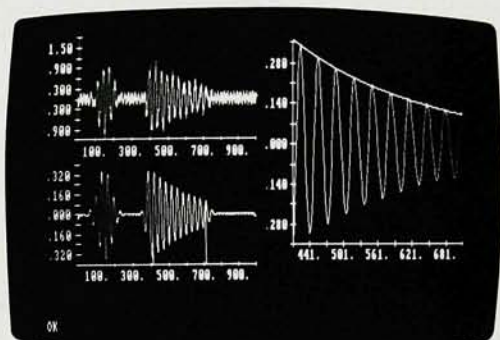
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letters

Timothy E. Toohig's guest comment in *PHYSICS TODAY* (January 1984, page 9) reminded me of that not-too-distant phenomenon. His report evokes the image of a sleepwalker. To be sure, Toohig does not praise the Soviet system as an alternative to the capitalist slavery. *Tempora mutantur*. He only seeks to convince the reader that the harsher the repression and, generally, the worse the situation in the Soviet Union, the more reasons there are for American scientists to cooperate with it. Very appropriate for the Orwell year.

The perspective in which Toohig sees events in Russia is a bad joke. He seems to think that the recent hardening of the Soviet regime is a response to the American criticism of the Soviet human rights violations, which includes the refusal to cooperate in science. He believes that a return to business as usual will soften the hearts of the Soviet bureaucracy and help dissidents. Fortunately, not many Americans now think along these lines, and I would not bother to react to Toohig's unimpressive article, were it not for a couple of personal remarks, rare in their meanness. They are directed against two men to whom I do not know equals in nobility: Andrei Sakharov and Yuri Orlov.

"I tried to understand the dissident situation," writes the author. Well, how would you try to understand it? Probably by contacting a dissident. Not Toohig. He relies on some unnamed informants: "Regrets were expressed about Sakharov, though it is stated he is not a physicist. Whether by this is meant his bomb work cut him off from the general research fraternity, I could not determine." If you could not determine what it means, why do you retell it? In fact, it would not be hard for Toohig to determine what it means, if he cared to. In every question about Sakharov, a member of the Soviet scientific establishment hears an implied question: "How could you betray one of your most outstanding and noble colleagues?" And he answers this question with the infamous "I know not the man," he is not a colleague. Nothing more here; just bad conscience. Soviet propagandists, who know how to exploit human weaknesses, help make "Sakharov is not a physicist" an easy answer to all questions. Now Toohig comes to help by peddling this nonsense in his country.

Still this is nothing in comparison with what this American physicist writes about Orlov: "Orlov '...is crazy. He molests the women he works with. He should be in jail.'" And that is all he has to say about it. One gasps in rage, reading this slander in a

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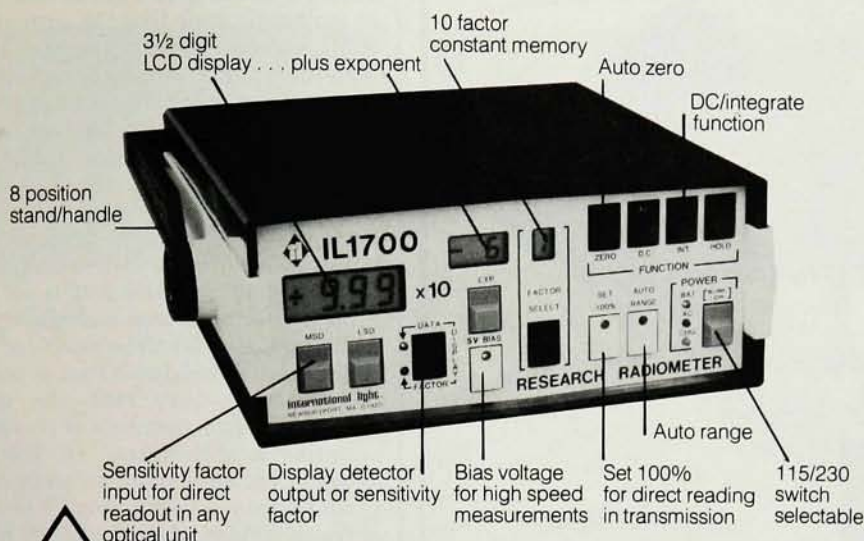
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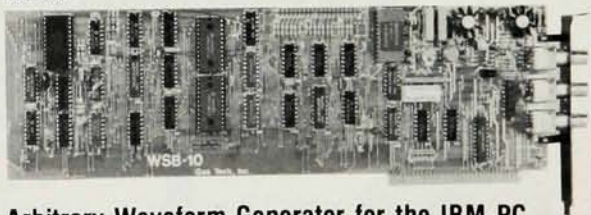
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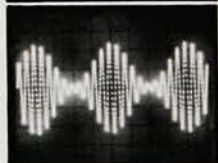


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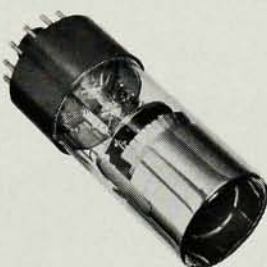
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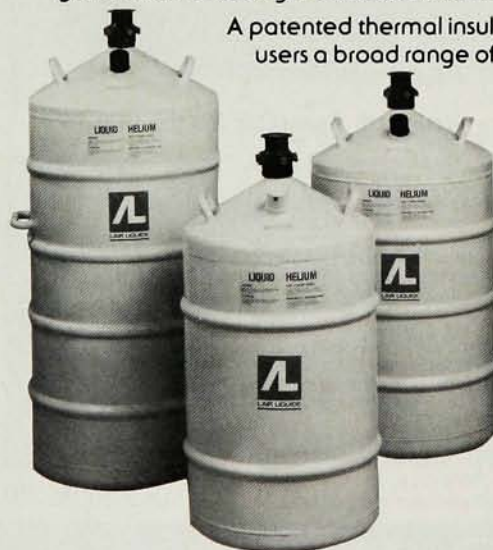
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letters

respectable journal. Sure enough, the text is taken in quotes. But slander remains slander even in quotes. Everyone in the Soviet Union who knows Orlov, or about Orlov, knows that he is so eminently sane that the authorities made no attempt to put him in a mental hospital—which they always do if they have so much as the slightest impression of unstable behavior. I do not want even to discuss “molesting women” because of its absurdity. Again, should there have been any evidence—true or false—to that effect, it would have been used in the trial. But it was not. All this stuff is not just a dirty gossip savored as such, but a deliberate slander fabricated by the KGB and maybe, I admit that, repeated sometimes by very rare—the worst from the worst—members of the near-scientific establishment. In Toohig's article it becomes, if not an established truth, at least a public opinion worthy of consideration. And this is also a lie.

Who are Toohig's sources? He says that he had “frank discussions” with them, and adds: “For reasons of prudence, I will omit direct attribution.” This is a sheer hypocrisy. The implication is that he protects his sources from reprisals of Soviet authorities. But all he attributes to them in the article can only please the authorities, especially the slander about Orlov and Sakharov. It is from public opinion that he protects his sources. An American physicist faithfully serving the interests of the worst part of Soviet bureaucracy; a pitiful case, but here it is. Speaking against “the restrictions and tensions of the past several years,” Toohig indicates that one of the effects is to “eliminate dialog and human support for the great number of our Soviet colleagues who are otherwise not known in the West.” From his article one can see which colleagues he wants to support and introduce to the West. Certainly not Sakharov, who is not a colleague at all, and not that crazy woman-molesting Orlov.

This brings us to a nagging question about people who witlessly follow the official Soviet line—people whom one used to call fellow-travelers: Why do they behave like that?

The probable answer about Toohig is that, unlike many earlier specimens of the species, who were blindfolded by their ideology, this one simply does not care a damn about anything beyond his immediate personal interests. If he did, he could not fail to know who Sakharov and Orlov were in actual fact, and he could not have settled the matter with a couple of slanderous quotes. Toohig wants to spend his two months a year in the USSR on the joint project, thus his interests coincide with

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letters

the interests of that privileged minority of Soviet scientists who are trusted by the Party and the KGB to deal with Americans inside the country and occasionally go outside. He is their mouthpiece, as well as that of the supervising comrades. Not only does he share their goals, he also uses their methods.

Self-interest and ignorance are our common human weaknesses, to which one should be tolerant. Still, there are limits, which are known as simple decency.

VALENTIN TURCHIN
The City College

3/84

City University of New York

Complementarity in technology

Bohr's complementarity and Heisenberg's uncertainty principle may be generalized to: "Disadvantages come with advantages." We can design cars with either good fuel mileage or good acceleration but we cannot have both desirable characteristics in the same car. Recently, Robert Yaes (January, page 126) pointed out that sophisticated weapon systems are also trouble-prone systems. Similarly, a perfect weapon may also be an obsolete weapon. The biggest and most powerful battleships, Yamato and Musashi of the Imperial Japanese Navy, never accomplished much in their short and ill-fated careers. In the time it has taken battleships to be perfected, the basic concept of the battleship (big guns and heavy armor) itself has become obsolete and has been superseded by airplanes and guided missiles.

Because of successes such as moon landings—where small rockets may be scaled up to large rockets, and six rockets may be combined to give more thrust than one rocket—there has been great emphasis on perfect research programs. However, a perfect research program may also be an obsolete research program. On the other hand, it would have been very difficult for Albert Einstein to formulate his simple yet profound ideas, such as $E = mc^2$ or $E = hf$, into sophisticated research proposals or grant applications. Thus it is not surprising that true pioneer scientists are often amateurs.

Unfortunately, the uncertainty principle and complementarity are not easily understood. Meanwhile, administrators are often mesmerized by sophistication and perfection. For example, the European aerospace industry has tried hard to overcome the complementarity between supersonic speed and fuel economy. Though glamorous, the Concorde supersonic transport was an economic disaster, with total production of only 16 planes. (The figure is