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**COVER:** Most people who contemplate digging would like to know what is underground first. A method that uses the changes in electromagnetic waves that have passed through the ground to gain information about underground structures promises to help. Here it tries to image a tunnel. See p. 348. (Photo: Lawrence Livermore Laboratory)

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# LETTERS

**A dam case of insomnia**

In regard to the article on cropland losses (SN: 11/4/78, p. 308), it strikes me that the decline in cropland productivity is roughly proportional to the increase of damming in the world's rivers.

People like to live in floodplains because the land is gentler there, water is generally abundant—but the annual floods are inconvenient, so ways are devised to prevent them. The result is that our topsoil is carried away down concrete sluiceways instead of spreading over the floodplains and settling out. Floods? Yes, there are fewer of them, but when they do occur, they are devastating without the ameliorating effect of a properly functioning floodplain.

We've short-sheeted our own bed, and now we must lie in it. It will be a long, sleepless night unless we remake it.

*James P. Cooper  
Mitchellville, Md.*

**First in command**

It has come to my attention that you have committed a serious error by referring to the Vulcan Spock (serial number S179-276SP) as second officer of the USS Enterprise (SN: 10/14/78, p. 260). Spock is, in fact, the highest ranking officer aboard the Enterprise (aside from the captain, of course), with the rank of Full Commander. Chief Engineer Scott, by comparison, is only a Lieutenant Commander. Spock is the science officer of the ship and also its first officer. Perhaps the confusion arose from the fact that he is second in command.

*Milrkan Tsuiendhi  
Chief of Personnel  
Star Fleet Command  
Star Fleet Armed Forces  
Fleet Headquarters*

**Unclassified laser fusion**

In a recent article entitled "Laser Fusion from Zeta to Omega" (SN: 11/4/78, p. 309), it was implied that the only U.S. laser fusion program based on unclassified principles was at the University of Rochester. This is not the case. The Laser Plasma Branch of the Plasma Physics Division at the Naval Research Laboratory has been doing totally unclassified research into the physics of laser fusion and laser development for over six years. This program has had, in fact, several NRC postdoctoral fellows and graduate students who have done their Ph.D. work in our laboratory.

Significant advances in the understanding of the laser-plasma interactions from NRL (such as the discovery and impact of self-generated magnetic fields, Brillouin backscatter instability, heat transport properties, etc.) have continued to guide directions in fusion research.

In fact, a recent series of experiments encouraging for the future of laser fusion performed at NRL have demonstrated ablative acceleration of targets to high speed (~10<sup>7</sup> cm/sec) with very good efficiency (~20 percent) using lower irradiance and longer pulses than now in vogue.

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Laser Plasma Branch  
Plasma Physics Division  
Naval Research Laboratory  
Washington, D.C.*

**Painless conversion**

"No country with an economy and population anywhere near the size of the United States' has ever converted to the metric system. GAO [the U.S. General Accounting Office] estimates the cost of total conversion here will run in the billions of dollars" (SN: 10/28/78, p. 295).

Since the U.S. accounts for about 35 percent of the gross world product, it is superfluous to note that no country with an economy as large as ours has ever converted to the metric system. However, the other 65 percent of the GWP, even though it is not confined within the boundaries of any single nation, is largely produced in metric terms. Certainly this is true of the U.S.'s major trading partners: the European Economic Community and Japan.

As to the cost of metrication, most U.S. companies have found that it is much smaller than they expected. The reason is that a planned, systematic approach to metrication will allow old inch-pound-pint equipment to be replaced with metre-kilogram-litre equipment as part of normal replacement. No rational person would contend that old equipment should be scrapped before its useful life is over just for the sake of metrication, but many people include just such foolishness in determining the cost of metrication.

In fact, the major contributing factor to metrication costs is the U.S. government's failure to exert some kind of leadership in this area. Different chunks of the economy are proceeding at different paces toward complete metrication, and the confusion caused by their being out of phase with each other is more expensive than metrication per se. Furthermore, since international standards for manufacturing and commerce are being expressed in round-number metric terms, there is a cost to the U.S. for its failure to metricate. It would be interesting to find out if the GAO applied this cost as an offset to its hypothetical cost of metrication.

Finally, while such decisions are apparently going to be made in terms of dollars and cents (a decimal-based measurement system, incidentally), it is a shame to ignore the intangible but significant values of improved measurement skills in the schools and of a single international language of measurement as an aid toward world understanding. Rather than discouraging metrication, the GAO report should encourage us to get serious about it.

*Richard S. Russell  
U.S. Metric Association, Inc.  
Madison, Wis.*

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