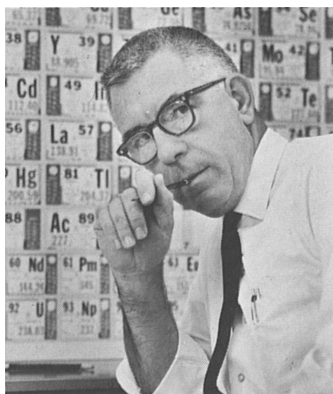




THE BOMB: BANE OR BOON?



Nuclear explosives have peaceful uses of scientific interest and technological value that can be accomplished in no other way. They are also expected to perform other useful feats more cheaply or efficiently than can their conventional counterparts. Examples are being brought out by the symposia-sponsoring activities of the American Nuclear Society's young but active Technical Group for Nuclear Explosives Engineering. Thus, we can forgo the temptation to enumerate examples here.

However, we would like to call attention to certain less tangible but possibly far more important aspects of this new branch of science and engineering. For one thing, the successful development of peaceful uses of nuclear explosives will do much to remove or at least counteract some of the deleterious results of THE BOMB. Time has already erased some of the panic that frequently accompanied early discussions of the effects of atomic bombs, but a certain cynicism and lack of respect for science and scientists, especially on the part of the younger generation, is still evident. Development of peaceful uses of nuclear explosives could help put the image of this profession back into proper perspective.

The chief value of the possession of nuclear weapons is probably their deterrent effect on all nations, the "haves" as well as the "have nots", against a rash belligerent act that could escalate into an annihilating war. Some even dared hope that the deterrent effect would be so strong as to force mankind into a world brotherhood sooner than might otherwise have occurred. Unfortunately, this effect seems to be diminishing as the years drag by and the world seems even more divided and hostile than it was 25 years ago. The human race being as recalcitrant as it is, even mutual protection from atomic attack does not seem to be pushing us very rapidly toward One World. Although this argument bears on the Plowshare Program in a rather backhanded way, demonstrated peaceful applications of nuclear explosives would mean that a country that is determined to pay the price for what it regards as the prestige of having a nuclear weapons capability need not have destruction as the only possible end use for its efforts.

Perhaps the most potent benefit from a successful demonstration of the economy and feasibility of nuclear-explosive engineering would be that it would probably make it more palatable for the "have" nations to disarm or at least reduce their armaments. Although atomic bombs can surely be dismantled and the fissionable material used in power reactors, no such market is yet available for thermonuclear material. However, in either case, we feel that there would be a much more beneficial psychological impact in blowing up the bombs usefully than in merely taking them apart. If nation A announced that it would remove X megatons from its nuclear arsenal, the other nations of the world could presumably monitor the blasting processes on instruments on their own respective territories. Whether or not this is simpler than sending inspectors to nation A to observe the nonexplosive disassembly and reassignment of the fissionable material to power-producing reactors, the net effect might be more satisfying.

Learning to live with nuclear bombs might not be too much different from learning to live with fire . . . or dynamite . . . or automobiles.

Louis G. Stang, Jr.