

ARIZONA NEWSLETTER **Doctors for Disaster Preparedness**

Mar. 1986 (vol. 2, #3) 1601 N. Tucson Blvd. #9, Tucson, AZ 85716 c 1986 J Orient

S D I : A L A S E R " D E A T H S T A R " ?

A laser battle station able to destroy missiles "would be powerful enough to incinerate cities in minutes," said SDI opponent Robert M. Bowman, Lt Col USAF (Ret.), in a talk sponsored by Physicians for Social Responsibility at the University of Arizona, February 6. Bowman believes that our current "radical right" Administration is deceptively planning a new generation of fearsome offensive weapons in the guise of defenses. Strategic defenses, he states, would be like the Imperial Death Star in the famous movie, capable of destroying Planet Earth and its billions of inhabitants. Bowman speaks with authority, referring to the time "when I was in charge of 'Star Wars.'" From 1976 to 1978, he directed the Talon Gold program (a pointer tracker system for a laser battle station) -- about 1/200 of a Star Wars program, according to Robert Jastrow.

Bill Anderson of Diffraction, Ltd., challenged Bowman's assertion, pointing out the obvious: a highly concentrated beam covers a very small area, and a beam covering a large area diffuses its energy. Old fashioned incendiaries would be far more cost-effective for starting fires, Anderson said. "I'm not sure that a laser would be cost-effective," Bowman replied, "but it would be effective." He referred to a study by RDA Associates, assuring the audience that he was not revealing classified information. However, RDA Associates refused to answer any questions, because their study was included in a classified document, part of which had been leaked to the press (Robert Scheer, Los Angeles Times, Jan. 12, 1986, p. 1.)

Bowman's book Star Wars: Defense or Death Star? enumerates a variety of technical problems with lasers. (Miraculously, these problems seem to exist only when lasers are to be used as defensive weapons, not when they are to be transformed into death beams.) To attack missiles in the boost phase, the beam would have to penetrate the atmosphere. Chemical lasers can do this; x-ray lasers cannot. But chemical lasers are notoriously inefficient. According to Bowman's calculations (p. 111), 1920 shuttle loads of fuel would be required for one battle station theoretically capable of destroying 1000 missiles. The energy yield: 40 megawatt-seconds/booster x 1000 boosters = 40,000 megajoules = 0.01 kiloton = 10 tons TNT equivalent.* It would take 100,000 such battle stations to produce the yield of a single typical hydrogen bomb. Yet Bowman speaks of the quintessential directed energy device as if it were a weapon of mass destruction.

Bowman resorts to other unusual definitions; some are listed in the glossary.¹⁹ Is this the best case that opponents of SDI can make? * 1KT = 4.2×10^{19} ergs

G L O S S A R Y

First strike: "Pre Boost" phase of "Star Wars."

Russian military satellite: device that allows American children to sleep peacefully at night, and keeps the night time sky free of bombers and missiles (see p. v).

Weaponization of space: placing antiballistic missiles in space; does not apply to ICBMs en route to targets or to Soviet Fractional Orbital Bombardment System.

Verification: a process accomplished by satellites.

Krasnoyarsk: site of a large phased-array radar, discovered by satellites, many years under construction; a potential ABM Treaty violation, after it is turned on.



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NUCLEAR WAR MISINFORMATION AT COLLEGE OF MEDICINE

For the second year, the University of Arizona College of Medicine has had a required course on nuclear war. Since the curriculum was outlined by the instructor, Barry Weiss, in Arizona Medicine, June, 1984, the course has been shortened, and certain material deleted (for example, the health effects of uranium mining.) The three hour course now includes a description of the effects of a 1 megaton bomb exploding over Davis Monthan Air Force Base, a documentary about Hiroshima, and a discussion of the Tucson evacuation plan.

I attended the course for the second time, as an uninvited visitor, and offer my unsolicited critique. The effects of nuclear weapons -- especially the thermal effects -- were not described accurately, and the errors were all in the direction of overstatement. Nuclear winter was presented as inevitable, citing the authority of the "unbiased" National Academy of Sciences. Copies of the Scientific American article (August, 1984) by Turco, Toon, et al., were distributed. The NAS report was not. The NAS review panel included Turco and Toon (not exactly unbiased), and the conclusions emphasize the large uncertainties involved. (Copies of the summary are available on request.) Noneffects of nuclear weapons (earthquakes and a catastrophic depletion of the ozone layer) were also alluded to, although "people don't talk about them."

The Hiroshima film showed many important facts: 1. There were many survivors (yes, the bomb was relatively small, but one must multiply the yield by 1000 in order to increase the destructiveness by a factor of 10). 2. The survivors suffered more than necessary because of a lack of medical supplies. 3. Minimal shielding, even from shadows or light colored clothing, protected against burns. None of these observations were pointed out to the students.

The Tucson evacuation plan was described by Patricia Nolan, Director of Public Health, who is responsible for its implementation. The plan has not been updated since 1978, and has many deficiencies, which Dr. Nolan does not intend to correct.

Dr. Weiss impressed the students by pouring what seemed to be lead shot into a metal bucket, to represent the explosive yield of weapons detonated in previous wars, compared with present-day nuclear arsenals. He did not illustrate the energy output of Bowman's hypothetical laser battle station -- it wouldn't have made a plink.

If you are concerned about education, ask Dean Louis Kettel whether the usual standards of accuracy, intellectual honesty, and scientific analysis apply, or whether they should be suspended when discussing a subject of such crucial importance.

TACDA ASKS FOR HELP

TACDA (The American Civil Defense Association) is NOT trying to raise megabucks to finance a direct mail or telemarketing campaign. It just needs \$25,000 to meet the special expenses incurred in moving. (It no longer can make use of an empty office in the Florida Emergency Operations Center). Its small, dedicated, poorly paid staff has donated. If 1000 people each give \$25, TACDA can continue to fight for a homeland defense. No professional fund-raisers are involved; every cent goes to TACDA. Tax-deductible contributions can be sent to PO Box 1057, Starke, FL 32091.

GOOD READING

Nuclear powered rockets: Are they safe? Should waste be dumped in the ocean? The hazards of indoor radon. These are recent topics in Access to Energy, a monthly newsletter published by Dr. Petr Beckmann, \$22/year, Box 2298, Boulder, Colorado 80306. Indispensable for those interested in public health and in preserving the environment.

Read about the \$364,000 Swiss citizen (are American lives worth that much?) in a new independent newsletter Understanding Defense, published by E. G. Ross, \$25/yr, 1633 Best Lane, Eugene, OR 97401. March 1986 issue compares US, USSR defense budgets.