

dictions for the year 2000 have been dropping at about the same speed since the oil embargo (see table). He divides the prophecies into four groups: beyond the pale (made by low-growth advocates like himself), heresy (put out by moderate conservationists), conventional wisdom (this includes government scenarios), and superstition (the work of high-growth advocates). Lovins notes that what was beyond the pale in 1972—an expected 125 quads of demand at the end of the century—became mere heresy in 1974, conventional wisdom in 1976, and superstition in 1978. Publication of the table, he says, has speeded up the process, for at least one branch of the Department of Energy (DOE) is about to publish a low-growth plan this year that goes almost beyond the pale, estimating we may need only 57 quads in year 2000. This report is being prepared for DOE Under Secretary John Sawhill, and its summary chapter is due to be completed this month.

The Lovins table amuses Lincoln Moses, head of the DOE's Energy Information Administration, and, in Lovins's sense, the spokesman of conventional wisdom. More than anything else, says Moses, the table illustrates the hazard of extrapolating from the historical record. It suggests that all one need do is wait 8 or 10 years and "our forecasted energy needs will have gotten down to the point where we have nothing to worry about." That, he thinks, is a "ridiculous result." He agrees, however, that he has seen signs that a "sea change may be taking place in energy using habits." His own agency's forecast (part of its 1979 annual report) will not be out until August. Meanwhile, it undergoes continuous revision.

Those who believe a sea change has occurred received a vote of confidence this year from several conservative institutional forecasters. Exxon's World Energy Outlook, published last December before the latest OPEC oil price increases, predicted that energy demand would grow in the United States by less than 1 percent a year through 1990, and by 1.6 percent after 1990. Before the oil embargo, the rate of demand growth was about 4.3 percent a year. Petroleum demand in America has passed its peak forever, Exxon concluded. The report also estimated that the recent pattern of efficiency improvement will continue, so that the already achieved 10 percent decline in energy needed per dollar of GNP will fall to 22 percent by 1990 and 30 percent by the end of the century. This represents radical change.

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## Spy Ship Got No Warning

On the afternoon of 8 June 1967, the U.S.S. *Liberty* cruised some 12 miles off the Sinai Peninsula, eavesdropping on battlefield communications in the 1967 Arab-Israeli war. During the previous 13 hours, six urgent messages had been sent to the ship by U.S. command forces, messages ordering the *Liberty* out of the area, telling it to pull 100 miles offshore.

Due to a series of human and computer errors, however, none of the messages reached the ship in time. Two were misrouted to a U.S. communications station in the Philippines and one went to Greece. One was never addressed to the *Liberty*. One was lost in the electronic labyrinth at the Army Communications Station at Pirmasens, Germany. The final message, marked urgent and "Top Secret" by the Joint Chiefs of Staff, spent the morning of 8 June passing from ship to ship in the U.S. Mediterranean fleet, never reaching the *Liberty* at all. The Joint Chiefs, it turns out, had overlooked the fact that the *Liberty* could not receive Top Secret messages.

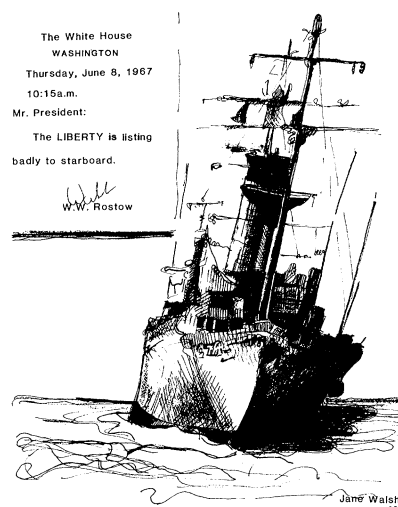
The rest is history. At 2:00 in the afternoon, Israeli planes and boats began a coordinated 1-hour-and-20-minute attack on the *Liberty* with gunfire, torpedoes, rockets, and napalm. At the end of the attack, 34 American sailors were dead and 171 wounded.

Details of the communications mix-up that paved the way for the attack come from a new book, *Assault on the Liberty*, by James M. Ennis, a recently retired Navy officer who served as cryptographic specialist on the *Liberty* and was wounded in the action. His report of communication and computer errors helps explain why the Pentagon in 1970 decided to overhaul its World Wide Military Command and Control System (WWMCCS)—a computerized system the Joint Chiefs use to coordinate U.S. military activity around the world. Some experts claim that WWMCCS is still so bogged down in technical and administrative problems that its effectiveness is open to doubt (*Science*, 14 March).

Ennis accuses U.S. officials of trying to cover up facts surrounding the incident in an effort to avoid public protest over the Pentagon's failure to

protect the ship and its men. He says, for instance, that the House Armed Services investigations subcommittee, which studied the affair in detail, was never told of the final, misguided, Top Secret message sent to the *Liberty* by the Joint Chiefs.

Ennis says the Administration also covered up facts in a effort to avoid embarrassing any ally. Since 1967, for instance, the Israelis have claimed



that their pilots reported that the *Liberty* was not flying the American flag and that the ship was attacked on the assumption it was Egyptian. But Ennis, who stood watch on the bridge of the *Liberty* on the morning of 8 June, had a new, oversized flag raised to replace the sooty one the *Liberty* was flying. The new flag was put up because "we were operating in a dangerous area and could afford to fly only our clearest, brightest colors," Ennis writes. The flag stood out in an 8-knot wind while Israeli reconnaissance planes flew over the ship at low level six times.

## Academy Says Curb on Cholesterol Not Needed

"Good food should not be regarded as a poison, a medicine, or a talisman. It should be eaten and enjoyed." That rather lighthearted advice comes from the Food and Nutrition Board of the National Academy of Sciences (NAS). On 28 May, the board issued a report on the public's preoccupation with the links between diet and chron-

ic disease and said there is no need for the average healthy American to cut down on dietary cholesterol.

The 20-page report, "Toward healthful diets," sparked instant controversy among government and private groups who for years have been urging Americans to reduce consumption of food high in fat and cholesterol as a way to reduce the risk of heart disease and cancer. Pointing to the food-industry ties of some board members, critics quickly expanded the controversy to include questions of objectivity and ethics. The report eventually created a rift within the Food and Nutrition Board itself when its 20-member Consumer Liasion Panel on 11 June, severed relations with the board in protest.

The controversy was stirred by what is an essentially conservative report. The board, whose 15 members set nutrient requirements for Americans by issuing the Recommended Dietary Allowances (RDA's), finds no clear evidence that reducing serum cholesterol levels by dietary changes can prevent coronary heart disease. The board notes that, when these attempts are made, there is only a "marginal" drop in the number of heart attacks and "no effect in overall mortality." They also note that the body synthesizes its own cholesterol, and that only 10 to 50 percent of cholesterol coming into the body through diet is absorbed. They hold that epidemiological evidence is at best inconclusive, noting that risk factors other than diet include a family history of cardiovascular disease, the male gender, hypertension, obesity, diabetes, smoking, and physical inactivity. Says the report: "Those who seek to change the national diet in hope of preventing degenerative diseases assume that the risk of change is minimal and rely heavily on epidemiological evidence for support of their belief in the probability of benefit. Neither the degree of risk nor the probability of benefit can be assumed in the absence of suitable evidence."

In sharp contrast to this attitude, reductions in cholesterol intake have been recommended by the American Heart Association, the now-defunct Senate Select Committee on Nutrition, and, most recently, by the U.S. Department of Agriculture and the Department of Health and Human Services. In all, some 20 government and

private groups have taken this stance.

In a typical response to the NAS board report, Robert Levy, director of the National Heart, Lung, and Blood Institute, says the recommendation to do nothing about cholesterol is inappropriate. "Existing information indicates that Americans should hedge their bets and seek a diet lower in saturated fats and cholesterol, at least until more evidence is available."

In addition to fueling the already heated controversy over whether it is wise to make a nationwide nutritional policy on the basis of what most everyone concedes are incomplete facts, the report brought a round of protest from critics who questioned the ethics of the board. Such protests are not new. On more than one occasion the board has been criticized for possible conflicts of interest that might predispose its members to pro-industry views. In light of this, the NAS now requires prospective panel members to file a statement listing potential conflicts of interest. The statements, which are not available to the public, are reviewed by the NAS Assembly of Life Sciences once a year and whenever a new NAS panel is created or new panel member added. They are not reviewed when an established panel, such as the Food and Nutrition Board, issues a new report.

Critics of the NAS, such as Michael Jacobson, director of the Washington-based Center for Science in the Public Interest, say "this minimal NAS self-scrutiny" is thus rendered ineffective when a panel such as the Food and Nutrition Board moves off its established turf of issuing RDA's and releases a special report. Jacobson notes that two members of the board are food company executives, and some members, such as board chairman Alfred E. Harper, a biochemist at the University of Wisconsin, serve as paid consultants of the food industry. Board member Robert E. Olson, chairman of the task force that wrote the diet report, also set up the peer-review program for the evaluation of research grants at the American Egg Board—a congressionally chartered group within the administrative structure of the Agriculture Department. The egg board is industry-supported and sponsors research and consumer education on eggs. Olson is a paid consultant. In addition, Jacobson notes that the NAS diet report was financed

by funds paid to the NAS by the 80 food companies represented on the board's Industry Liasion Panel.

Harper, in reply, denies that the objectivity of the report was in any way jeopardized. He says, for instance, that he personally does more consulting for government than for industry. He also notes that the companies that make up the Industry Liasion Panel of the board and finance its reports have competing interests. Some of the companies, for instance, promote products that encourage consumption of dietary cholesterol while others promote special low-cholesterol products that normally have high cholesterol content. Slighting the report on the basis of alleged industry influence, he says, "is an attempt to coercion. It is an effort to indict people for having a scientific view that differs from one that may be more widely accepted."

Olson, a biochemist at the St. Louis University school of medicine, says in regard to his affiliation with the egg board: "My conscience is clear. I can be labeled a man sympathetic to the nutritional value of eggs, but not necessarily to the egg industry. The data used in this report were based on the published literature, not my association with the egg board." He says he took the position on the egg board's research program only after being assured of complete scientific freedom. Olson also says critics raise questions about the integrity of the panel because "they don't know how to attack the report's scientific conclusions."

## DeVita to Head NCI

Vincent T. DeVita, Jr., who has served since January as acting director of the National Cancer Institute (NCI), has been offered the directorship and is expected to accept. The White House has not yet set a date for the announcement.

DeVita will replace Arthur C. Upton, who announced his resignation as director of the NCI last 6 December. DeVita has served as director of the division of cancer treatment at NCI since 1974. He is best known for research on the treatment of advanced cases of Hodgkin's disease, his chemotherapeutic approach oftentimes producing a favorable prognosis for the patient.

William J. Broad