nal, so that more of their force is based at sea. Ostensibly, this would make it more difficult for the Soviets to threaten U.S. land-based missiles, a matter that causes sleepless nights at the Pentagon. Soviet submarine missiles are less threatening to U.S. land-based missiles because they are less accurate.

Reagan's proposal is mute on the subject of what missiles and which submarines will carry the warheads permitted in the two arsenals, meaning that each side is free to modernize its forces however and whenever it wishes. The proposal is also mute on the topic of warheads transported by bombers or cruise missiles, where the United States maintains both a quantitative and a qualitative advantage. Haig says that these weapons were deliberately excluded because they would be used for retaliation, whereas land- and sea-based missiles can be used in a first strike. This distinction was lost on Brezhnev, who complained in a speech to a conference of the Young Communist League that the "American position is absolutely unilateral in nature—above all, because the United States would like, in general, to exclude from the talks the strategic arms it is now most intensively developing."

Similar objections have been raised by several members of Congress despite the assurances of Haig and Eugene Rostow, director of the Arms Control and Disarmament Agency, that bombers and cruise missiles could be included in the forthcoming talks. Haig even went so far as to state that the MX, a controversial new land-based missile, "will certainly be [up] for negotiation." But this did not go far enough for Senator Edward Kennedy (D–Mass.) and others who support a prompt freeze on the development, testing, and production of nuclear weapons. They wanted Reagan to say outright that new weapons would be forsworn.

More substantive criticism came from leaders of the Arms Control Association (ACA), a Washington lobbying group, and from a handful of congressmen, who are concerned about the balance of U.S. and Soviet forces after the reductions have been completed. The problem, according to Representative Albert Gore, Jr. (D–Tenn.), "is that not all reductions are benign and not all forms of parity lead to stability."

Under the Reagan plan, for example, the United States would have fewer submarines. Herbert Scoville, the ACA president and a former deputy director of the Central Intelligence Agency, believes this would permit the Soviets to concentrate their resources on fewer targets, leading to swifter submarine attrition during a nuclear war. The United States would also have its other warheads concentrated in a smaller group of land-based missiles, a factor that would enhance the value of a preemptive Soviet strike. "Quite frankly," says Senator Joseph Biden, Jr. (D–Del.), "we are more vulnerable under the President's proposal to a first strike than we are under SALT II."

The rebuttal offered by Administration officials is that U.S. land-based missiles will somehow be made invulnerable to attack, thus negating the increased Soviet advantage from striking first. But no one yet knows how this will be done.

That is one problem. A second is that, by the peculiar math of the Reagan proposal, the Soviets might be more vulnerable to a preemptive attack by the United States. Their land-based missiles could contain more warheads, making them more attractive targets. They might want to make their missiles mobile, so as to prevent a successful American attack, but the United States is thinking about banning mobile missile systems in the new agreement. More of the Soviet missiles would be based at sea, but their invulnerability might not be assured. Soviet subs are noisy and unreliable, and the United States possesses geographical and technical advantages in antisubmarine warfare.

These are admittedly worst-case estimates of the balance of power that could result from the Reagan proposal. A lot depends on exactly how each side elects to structure its forces and to react to decisions taken by the other. The conclusive estimate of comparative vulnerabilities will not be possible until the agreement is complete, which Reagan says is probably "many years" away.

Some of this uncertainty would be eliminated under a proposal advanced by Representative Gore. He has suggested that the only new missiles that would be permitted on either side should be those that carry a single warhead. If each side had equivalent arsenals of single-warhead weapons, a first strike would eliminate both arsenals simultaneously. This would substantially limit the existing incentive for such strikes.

Although the idea has reportedly been favorably mentioned by some Soviet officials, the Reagan Administration has expressed skepticism, pointing out that such an agreement would reverse at least a decade of nuclear weapons development, and require the design of a new missile to replace the MX.

—R. JEFFREY SMITH

Revised Animal Bill Under Scrutiny

A bill introduced into the House last year would have diverted up to 50 percent of federal funds for biomedical research into attempts to reduce or eliminate the use of laboratory animals. The bill was finally shelved after vociferous objections from researchers. Now, two House committees are looking at a modified bill, H.R. 6245, whose chief thrust is to raise the standards of laboratory animal care. But even this version is causing concern.

H.R. 6245, introduced by Representative Doug Walgren (D–Penn.) would authorize $45 million over the next 3 years for proposals to develop alternatives to animal use. It would mandate that institutional animal care committees contain at least one veterinarian and at least one outside member.

It would also establish a "private agency," probably the American Association for Accreditation of Laboratory Animal Care (AAALAC), as the accrediting body for all entities that accept federal funds for animal-related research. Currently, AAALAC accreditation is voluntary. The National Institutes of Health (NIH), for example, encourages AAALAC accreditation to demonstrate compliance with its animal care guidelines.

But researchers are not happy with making this accreditation mandatory. The Association of American Medical Colleges (AAMC) claims that, based on figures developed by the National Academy of Sciences, it would cost NIH-funded laboratories about $500 million to bring their labs up to AAALAC standards. (The bill would appropriate $30 million for this purpose.) Although 59 of 123 medical schools are already AAALAC-accredited, an AAMC spokeswoman says "the standards are regarded by many as ideal rather than realistic," and with research funding as tight as it is, now is not the time to reach for the ideal.

Criticism from NIH has been more guarded. William Raub, director of extramural research and training, testified at subcommittee hearings in May that existing mechanisms are adequate "if they are utilized fully." NIH is currently reviewing the structure and

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Duke University

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function of animal care committees and is developing a system of periodic site visits to animal laboratories that would supplement inspections carried out according to the Animal Welfare Act by the Department of Agriculture's Animal and Plant Health Inspection Service.

The growing pressure by animal welfare groups to reduce the use of animals in research has been met with growing alarm by researchers. A staff member says the intent of H.R. 6245 is to "raise the consciousness of researchers." Certainly it is raising their fears.—***Constance Holden***

NRC Gains a Third Reagan Appointee

The Nuclear Regulatory Commission (NRC) gained its third Reagan appointee at 4 a.m. on 14 May when the Senate confirmed the nomination of James K. Asselstine to the commission. The vote came near the end of an all-night session on the Defense Department appropriation bill. Asselstine, 34, will replace Commissioner Peter Bradford, a sometime critic of the nuclear industry who now works for the governor of Maine.

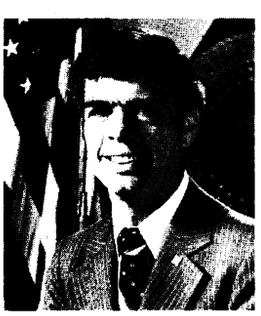
Like Bradford, Asselstine is an attorney. He has served since 1975 in various posts at the NRC and on the congressional staffs that oversee the nuclear safety program. Most recently, he was senior staff member for nuclear matters on the Senate Committee on Environment and Public Works, serving at the direction of the Republican majority.

The nomination has been well received, even by groups such as the Union of Concerned Scientists (UCS) usually critical of the federal nuclear establishment. According to Michael Faden of UCS, "Asselstine is clearly the best nominee this Administration could have sent up. . . . In dealing with us on legislation, he has always been open and willing to listen to our point of view and perfectly straight when he disagreed with us." Faden was impressed that in his confirmation hearing, Asselstine said he would try to clear up unresolved safety issues. "It's good to hear a new commissioner say that his first priority is safety, not issuing licenses."

Asselstine demonstrated his independence on 17 May, hours after his swearing-in, by refusing to support an unusual Administration request for a new vote on a March decision involving the Clinch River breeder reactor. The NRC had decided not to allow accelerated construction. Asselstine's vote killed any chance of a speedup.—***Eliot Marshall***

Block Ends Checks on USDA Peer Panels

Without comment, Secretary of Agriculture John Block on 20 May ordered an end to security checks on scientists sitting on peer review panels for the department. Agriculture



John Block

was the only federal research sponsor that submitted reviewers' names to the FBI for security clearances and to in-house checkers for political approval. The practice came to light in early May (*Science*, 7 May, p. 600), and prompted numerous letters of protest, as well as disapproving editorials in major newspapers.

—***Eliot Marshall***

DOD May Have to Pay Its Way on the Shuttle

The Senate Committee on Commerce, Science and Transportation has endorsed a bill that would require the Department of Defense (DOD) to immediately start paying the full cost of launching its payloads on the Space Shuttle. Under current policy, the National Aeronautics and Space Administration (NASA) would pay about 60 percent of DOD's launch costs during the next 6 years (*Science*, 16 April, p. 278; 14 May, p. 717).

"With a projected budget during this fiscal year of over $200 billion and a Defense Department space budget of over $8 billion, the DOD should not have to be subsidized at the expense of our country's civil aeronautics and space programs," said Senator Harrison H. Schmitt (R–N.M.), chairman of the subcommittee on science, technology, and space.

The full committee incorporated this sentiment into its proposed authorization bill for NASA's fiscal year 1983 budget, which it approved on 11 May. The bill would deduct $409 million from space shuttle operations—the additional contributions assumed from DOD—and distribute it among NASA's other programs. Highlights include an additional $40 million for planetary exploration; $64 million for aeronautics research and technology; $90 million to start work on a fifth shuttle orbiter; and $150 million for development of the Centaur Upper Stage. The bill also includes approval for NASA to proceed with the Solar Maximum Repair/Retrieval mission. There are no new starts, however.

At this writing the committee is preparing to send the bill to the Senate floor for a vote, which could come at any time. The proposal's fate on the floor is anyone's guess, especially since the $409 million would have to come out of DOD's budget—which the Senate has already passed. Moreover, any NASA budget passed by the Senate will have to be reconciled with the NASA budget recently passed by the House of Representatives. The House bill would add $35 million to aeronautics research, but says nothing about DOD's shuttle payments.

—***M. Mitchell Waldrop***