isting weapons. In the first place, we have not conducted open-air testing of actual binary weapons. If the Army should apply for permission to do so, I would be inclined to urge my colleagues to deny this permission simply because of the hazards presented by such testing. But the point is that without actual open-air testing of real weapons, instead of simulations, we cannot be sure that binary weapons will perform as they are designed to perform. Saul Hormats, the former director of development at the Army Chemical Systems Laboratories, has stated that we can anticipate a failure rate of 20 to 30 percent in artillery rounds and 50 percent in Bigeye bombs without open-air testing. This is hardly safe for our fighting troops.

What about the issue of simplified logistics? At one point, the Army was claiming that binary chemical artillery rounds would weigh some 40 percent less than existing artillery rounds, permitting a major increase in shipping volumes in the event of a conflict. After some examination, however, it was found that binary weapons will actually weigh more than existing rounds. The Army had overlooked such things as fuses, shipping canisters, and so forth. And, as Matthew Meselson, an authority on chemical weapons has stated, shipping two chemicals in separate containers will actually require more volume than shipping existing weapons. So once again, the claims of the proponents are not as clear as one might hope.

Finally, what about the deterrent value of chemical weapons? There is no question that Soviet troops are well trained in chemical warfare operations. There is no question that their vehicles are fitted with filters and overpressure systems to permit continued operations in a contaminated environment. And, as many of the H'mong refugees living in Minnesota can testify, such Soviet allies as Vietnam are using chemical agents—mycotoxins and other forms of "yellow rain"—against helpless populations. An item in today's paper provides further evidence that the Soviet Union is building, using, and transferring to its allies, chemical weapons which are used against Cambodians, H'mong, and the freedom fighters of Afghanistan.

They are doing so in part because they are not deterred from resorting to these horrible weapons of mass destruction. Refugees and peasants cannot strike back with comparable weapons. But this is not the case for the United States. We have a major stockpile of chemical weapons. I agree that some of these weapons are deteriorating. And I agree that some of these weapons no longer fit our current arsenal of launchers and artillery tubes. But some reports indicate that we have as many as 3 million rounds of 155-millimeter chemical shells, which are suitable for existing artillery. And there are literally tons of bulk chemical agents which can be transferred into bombs and shells if we wish. In other words, we have a deterrent stockpile. So why must we add to it?

Ultimately, the real threat of chemical weapons is twofold. First, troops who must climb into cumbersome protective suits simply cannot fight as well as troops who are unencumbered. This is a simple problem of human engineering, but it is real and it is threatening. It is particularly pertinent for such activities as servicing combat aircraft between sorties. Much of our defensive posture in Europe and elsewhere relies on rapid turnaround rates for our combat aircraft so that we can maintain a high number of sorties. If the people who must service, refuel, and reload our aircraft are forced to button up, they cannot work as fast and our combat effectiveness will suffer. This is also true, of course, for the infantry.

But will this threat be reduced by building binary weapons? I think not. No sensible military commander will wait until he has been attacked before ordering his troops to don protective gear. Instead, he will give the order as soon as he has the slightest suspicion that the enemy might—just might—resort to chemical weapons. And, if he is cautious, he will assume that there is a threat of chemical attack as soon as hostilities have begun. In other words, we can do nothing except to recognize the necessity to put on protective gear. This means that we should be devoting every effort to developing protective suits which permit the maximum possible freedom of motion.

We can and should seek to insure that the Soviets will also be forced into protective suits so that they do not obtain any advantage through the force multiplier of the threat of chemical weapons. Their efficiency must be reduced as much as ours. To some extent, it will be, because we already have the chemical agents in our arsenal to pose a credible counterthreat. Just as important, Soviet troops who plan to conduct chemical operations know that they must march through contaminated areas—areas which they themselves have poisoned—so they will have a further incentive to don their own protective gear.

But the best way we can reduce their advantage is simply to begin realistic and regular training exercises ourselves. The Soviet Army does so. We do not. Our protective gear is not adequate, and our training—while substantially better than was the case 10 years ago—is still insufficient.

In short, the threat of chemical weapons is one which we can solve without investing several billion dollars in new binary weapons. We already have the means to force the Soviets into protective gear in the event of combat. Our deterrent is in place. But we do not have the kind of protective gear or the kind of training which will permit our troops to operate with the maximum efficiency on a battlefield which has been or might be contaminated.

Finally, of course, the ultimate victims of chemical warfare will be civilians, and not the military men who can wear protective gear. Artillery rounds are confined in range. If we should be forced to fire chemical artillery shells—whether existing shells or new binary shells—we can be sure that those shells will fall into the areas we are trying to protect. The devastation which would follow a conflict in Europe is already massive. Should we add to it by building more weapons which blanket huge areas with lethal effects? I say no.

Consequently, I see no reason to invest millions this year and billions over the next few years in weapons which are neither needed nor even as efficient as their proponents claim. That is why I joined 11 of my colleagues in writing to the Armed Services Committee last March, urging that funds for binary weapons be denied. That is why I have repeatedly voted against this program. It is why I will later join Senator COCHRAN in introducing a resolution urging negotiations on the control and abolition of chemcial weapons. And it is why I am about to vote to delete the funding for this program.

Mr. President, I ask that the letter which I mentioned be introduced into the RECORD, along with two articles from the Army Times and an editorial from the Minneapolis Star and Tribune.

The material follows:

U.S. SENATE,
Washington, D.C., March 12, 1982.

HON. JOHN TOWER,
Chairman, Committee on Armed Services, U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: On February 8th, the President notified Congress that his Administration intends to resume the production of lethal chemical weapons, the first such directive since President Nixon cancelled production in 1969. The Department of Defense has requested more than $30 million to begin actual procurement of binary chemical weapons. We oppose the Administration's decision and have joined in introducing legislation to prohibit the expenditure of any funds to produce binary chemical weapons. This legislation has been cosponsored by a bipartisan coalition of Senators.

We oppose the Administration's decision to resume the production of lethal chemical weapons because it will not enhance our national security. Renewed production of chemical weapons would, in fact, undermine efforts to restore our military capability by diverting important defense resources to a nonessential program.

We are concerned about Soviet capabilities in the area of chemical warfare and mindful of the threat these weapons might pose to our national security. For these reasons, we seek practical and effective military measures to reduce this threat. The critical issue is how best to respond to the Soviets. The production of binary chemical weapons is not necessary for the national defense, nor is it necessary to deter Soviet first use. Our current stockpiles are adequate for that purpose. Our principal emphasis should be the acquisition of additional protective and defensive equipment for U.S. combat forces to reduce the effects of a chemical weapons attack.

The decision to resume the production of chemical weapons will not enhance our national security. It will not restrain Soviet activities. It will result in a needless diversion of defense resources.

We urge this Committee and our Senate colleagues to oppose appropriations for the procurement of lethal, binary chemical weapons.

Sincerely,

Nancy Landon Kassebaum, David Pryor, William Proxmire, Edward M. Kennedy, Thad Cochran, George J. Mitchell, Gary Hart, Lowell P. Weicker, Donald W. Riegle, Paul E. Tsongas, Walter D. Huddleston, and Dave Durenberger.

[From the Army Times, Apr. 12, 1982]

BINARY WEAPON DEBATE CENTERS ON PERFORMANCE

(The Defense Department has requested $30 million from Congress for FY '83 to begin producing chemical weapons for the first time since 1969. DoD says that new binary weapons are needed to replace a rapidly deteriorating stockpile.

(Sen. Gary Hart (D-Colo.) and Rep. Toby Moffett (D-Conn.) have countered DoD's request by introducing bills that would prohibit production of the binary weapons.

(The first test on the issue may come in mid-April, when the FY '83 DoD authorization bill is expected to reach the Senate floor.)

(By Neil Roland)

WASHINGTON.—As the Army's request for money to produce new binary chemical weapons nears a vote in Congress, the Army and its critics are in fundamental disagreement over the most basic question of all: how well will the new weapons work?

That is, if they should be employed in combat, would the munitions that launch them fire reliably? And once fired, would the two chemical components of the nerve agent mix properly and effectively kill enemy soldiers?

In existing chemical weapons, the toxic agent already is mixed. But in binary weapons, the chemical components are in separate canisters and are mixed only after the weapon has been launched.

DoD wants to produce two binary weapons—a 155mm artillery shell containing GB nerve agent to replace the existing 155mm projectiles, which defense officials say will deteriorate in 10 years, and a Bigeye bomb filled with VS nerve agent, an advancement over the Weteye bomb in the existing stockpile.

But questions over the performance of these proposed weapons may raise the sensitive issue of open-air testing.

The Army says the new binary weapons can be tested safely without firing live munitions in the open air. Instead, the Army has conducted laboratory tests of scaled-down binary weapons, in which the components formed deadly nerve agent, and has field fired munitions filled with harmless stimulants in place of the binary components.

But civilian critics argue that unless binary weapons actually are tested in the open air, the Army can't be sure that they will work properly if used in combat.

Without open-air testing, said Saul Hormats, former director of development at the Army Chemical Systems Laboratories, about 20 percent to 30 percent of the projectiles and 50 percent of the Navy's proposed Bigeye bombs would be duds. In contrast, he estimates that less than one percent of the existing weapons would fail to fire. The existing weapons, produced between 1942 and 1969, were field tested with live agents rather than simulants.

"There's a terrible, enormous risk with simulants," says Hormats. "Simulants will tell you that the chemicals mix, but they won't tell you the temperature, the percentage converted to agent or the effectiveness of the mix."

The Army sharply disputes Hormats' estimates of the dud rate of both the current and proposed weapons.

With simulant testing, said Col. Bobby Robinson, "the number of (binary) duds would be so miniscule that I couldn't put a number on it."

Robinson, the Deputy Director of the Army's Nuclear and Chemical Directorate, added that more than 20 percent of the existing weapons would prove to be duds if they had to be used now, largely as a result of deterioration of the munitions.

While the Army's official position is that open-air testing of chemical weapons is unnecessary, one version of a speech by the Chief of Staff, Gen. Edward C. Meyer, suggests open-air testing might be preferred by the Army leadership.

Meyer spoke at the U.S. Naval Academy at Annapolis, Md., Oct. 21, 1980. After his address, the Army provided a transcript to the American Defense Preparedness Association. In that transcript, published by ADPA, Meyer is quoted as saying:

"We also need public support of the CW program and open-air testing of (chemical) munitions. This is very critical if we are going to catch up (with the Soviets)."

But 18 months later the Army produced a different version of Meyer's speech in which there is no mention of open-air testing.

Thus, while it is not clear which version of the speech Meyer actually presented, the Army's position is that Meyer did not say the Army favors open-air testing.

The Army concedes that simulation is somewhat less reliable than open-air testing with live nerve agents, but it maintains that the difference is too small to justify resumption of open-air testing.

In 1968, the nozzle of an aerial spray tank carrying VX nerve agent malfunctioned during an open-air test at Dugway Proving Ground, Utah. Within the next several days, some 6000 sheep grazing 27 miles away were found dead. No cause-and-effect relationship was proved, but the episode stirred widespread opposition to such testing.

A year later Congress passed legislation requiring the Army to get congressional approval for such tests. The Army has not applied for approval since.

In its binary development program, the Army has used simulants to field-test more than 2750 artillery projectiles and has tested about 350 projectiles in the laboratory.

Two independent groups of scientists reviewed and approved these tests, the Army said. But Army spokesmen would not release any information about the scientists or their findings on the grounds of security.

Binary munitions are simpler and safer to ship, the Army contends, thus adding to combat effectiveness. But some civilian specialists argue that binary munitions would complicate, not simplify, logistics.

Because the binary would be shipped as two harmless canisters and a projectile, transportation would be more efficient than with existing weapons carrying live agent, the Army says. No special equipment or safety precautions would be needed, and the Army could be more flexible in selecting storage sites along the way.

Most important, says the Army, the 155mm binary munition would weigh less than the existing 155mm munition. Therefore, more binaries could be shipped at one time.

The most important logistical advantage of the binary, the Army originally said, was its lighter weight. The Army initially claimed that the shipping weight of each binary projectile would be 60 pounds—40 percent lighter than the existing projectile, which weighs 101 pounds.

The Army's assertion was written on March 19, in response to requests made by several congressional committees that had met in March.

"The weight of the projectile is critical in understanding transportation requirements," the Army wrote. "The 155mm binary munition weighs approximately 40 percent less than its counterpart unitary munition, and as a consequence, a larger number of munitions can be transported."

When pressed by Army Times to break down its computations, however, the Army revised its estimate of the shipping weight of the binary to 107 pounds—six percent more than the weight of the existing projectile. The Army said that it had omitted the weight of the two canisters, the fuse and the packaging materials in its original calculations.

"The guy who did these calculations didn't have much time to do them," said Robinson.

Robinson attributed responsibility for the original estimate to Col. William Mourtel, who was chief of the Army's Chemical Nuclear, Biological and Chemical Defense Division before retiring at the end of March.

Robinson added that more binary than unitary projectiles could still be fitted on a plane, despite their greater weight, because binaries could be stacked. Safety requirements prevented existing projectiles from being stacked, he said.

In addition to the greater weight, the shipping volume of the binary would be more than three times as large as that of the existing projectile, says Dr. Matthew Meselson, a professor of biochemistry at Harvard University. This extra volume results primarily from the separation of the second canister from the projectile.

Finally, Meselson discounts the transportation advantages that safety would offer, arguing that the safeguards developed by the Army for its current weapons have proven effective.

Another civilian specialist raises an additional concern—that the Army may have trouble coordinating the shipment of separate parts to the combat zone. William J. Weber, ex-chief of munitions and of environmental technology at the Army Chemical Systems Labs before retiring in 1980,