

F. A. S. NEWSLETTER

FEDERATION OF AMERICAN SCIENTISTS—Founded 1946—
A national organization of natural and social scientists and
engineers concerned with problems of science and society.

Vol. 24, No. 7

October, 1971

FAS R&D STATEMENT VINDICATED BY GAO

On July 23, the General Accounting Office (GAO) released its analysis of the claims of the Defense Department's Directorate of Defense Research and Engineering (DDR&E) that a gap in Research and Development (R&D) spending was emerging between the United States and the Soviet Union. GAO said:

On the basis of the limited information available to us, we believe that extreme secretiveness by the Soviet Union results in data which are insufficient for a realistic measurement of its military R&D efforts. At best, dollar valuations of Soviet Union military R&D programs are only rough guides to the Soviet Union's relative level of effort. In our opinion, the general technological assessments as developed by DOD can provide only general support for those rough guides; they cannot refine them. Consequently, although we believe that the DOD methodology with its limited data base may be useful in indicating trends and the apparent magnitude of the Soviet Union military R&D threat, we have reservations as to its usefulness in quantifying relative efforts or spending gaps between the countries.

Responding to queries of Senator Thomas J. McIntyre (R., New Hampshire), Chairman of the Senate Ad Hoc Subcommittee on Research and Development, the GAO report contained a lucid description of Defense Department methodology.

As earlier Federation statements had charged, DOD had
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ARMED SERVICES COMMITTEE FACES BUDGET SQUEEZE

The military procurement bill — approximately \$20 billion in size — is the largest single bill to go before Congress. In this bill, the Armed Services Committees of House and Senate authorize: the procurement of aircraft, missiles, and naval vessels; expenditures for military research and development; the personnel strengths of certain reserve forces; and the purchase of such other weapons as tanks, machine guns, and torpedoes. Last year, the Senate Armed Services Committee recommended a cut in the DOD request of 6.7%; this year they recommended 5.3%. But each year, for several years, inflation has cut the purchasing power of the defense budget by at least as much. As the Committee report noted, this year's budget of approximately \$77 billion will buy about \$20 billion less than the fiscal 1968 budget of about the same dollar size.

Along with the squeeze has been a rise in manpower costs. From 1968 to 1972, military services were cut by one million men but manpower costs nevertheless rose from 41% to 52% of the budget. The Committee is worried that "serious difficulties" may arise in having enough weapons even if the weapons did not increase in cost. Meanwhile, weapon costs are skyrocketing. From 1960-1975, aircraft costs are expected to go up five to six times. The Committee recognized that in the "more likely" case, the GNP devoted to defense would "stabilize or continue to decline." It concluded that a future crisis might find us with insufficient forces.

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NO FIRST USE OF NUCLEAR WEAPONS

In 1969, in conjunction with its first nuclear test, the People's Republic of China announced that it would never be the first to use nuclear weapons. It has repeated this claim at every opportunity. Premier Chou-En Lai mentioned it twice in an interview with James Reston. It will surely come up when the President visits Peking.

The PRC "No-First-Use" policy is one which many American strategists have urged the United States to adopt. Contrary to the assumption of many citizens — including Senators and Congressmen — it is not now U.S. policy to preclude the first use of nuclear weapons. Indeed, in Europe, U.S. policy is quite the reverse. There it has been the declared U.S. policy for more than two decades that we *would* use nuclear weapons first if the Soviet Union attacked with unstoppable conventional forces.

In the fifties, we threatened massive retaliation with nuclear weapons in response to such an attack. Later, we explicitly threatened the introduction of tactical nuclear weapons. Today, NATO policy calls for "demonstration" nuclear explosions to show we are ready to use nuclear

weapons still more broadly.

The problem of defending Europe is, without question, the single most important obstacle to American assertions that it will never be the first to use nuclear weapons. Many believe such a statement would encourage Soviet aggression by assuring the Soviet Union that America would lose Europe rather than use nuclear weapons. But others believe that — whatever we declare about nuclear weapons — a major Soviet conventional attack on Europe is now considerably less likely than a nuclear war arising out of miscalculations in Central Europe and unwanted nuclear escalation.

How one views the No-First-Use announcement depends closely on one's perception of this problem. The older view assumes that the Soviet Union is planning to take over as much of Western Europe as possible at some early opportunity. In this view the Soviets have conventional superiority; only U.S. threats to use nuclear weapons keep them deterred. This view may recognize that U.S. use

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NUCLEAR WEAPONS

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of nuclear weapons would lead to Soviet use and, in turn, to the destruction of the same Europe we are trying to protect. But the important thing from this perspective is deterrence — avoiding war, not what would happen if war broke out.

Another view of European defense exists. In this view, war will not arise from a major Soviet attempt to conquer Western Europe, but from lesser conflicts involving West Berlin, border incidents, uprisings, and so on. Thus, whether or not the conflict was "started" by the Soviet Union in a calculated way, the originating conflict would be below the nuclear threshold in any case. Gradually, through escalating acts of violence, nuclear war would become a live possibility.

At this stage, Soviet military and political leaders might be urged to use nuclear weapons pre-emptively on the grounds that the United States was certain to do so. A self-fulfilling prophecy might be set in motion on each side. And because both sides would be primed to use nuclear weapons, it could be most difficult to prevent nuclear war. The nuclear war would destroy the territory we were trying to protect. And since many of the Soviet weapons aimed at Europe are based in the Soviet Union, attacks on them mean attacks on Soviet territory which, in turn, would lead to attacks on U.S. territory.

In this second view, it would be most useful if one power or the other would say convincingly that it was not planning to use nuclear weapons first. The originating incidents below the nuclear threshold could still occur — of course. (Because they were below this threshold they would not be encouraged by our declaration of No-First-Use.) But when the incidents began to escalate to nuclear war, the No-First-Use declaration would make it harder for the Soviet leaders to argue that nuclear war was sufficiently inevitable to justify a Soviet pre-emptive attack. And by the same token, American strategists would not have to assume a Soviet pre-emptive attack based on that reasoning; we would thus lose much impulse to pre-empt ourselves. Thus, the conflict would be resolved by conventional force.

Following the conflict, the United States could launch whatever rearmament and cold war program was justified. The certainty of such a response from the U.S. is a massive deterrent to Soviet aggression. And it fits the crime much better than nuclear war. (Massive U.S. programs of arms and civil defense would force the Soviets to follow suit at great expense and would set in motion another cold war of 20 years.)

In short, supporters of no-first-use announcements consider a nuclear-war-nobody-wants to be much more of a threat to the U.S. than a massive conventional Soviet attack on Western Europe. And they believe that a no-first-use doctrine decreases the probability of that nuclear war more substantially than it will encourage deliberate Soviet attack.

Europe is not, of course, the only relevant theater. For example, a no-first-use pledge would prevent the U.S. from introducing nuclear weapons into some conventional struggle with the PRC in Korea, or in Vietnam. But would the U.S. really want to be the first to use nuclear weapons in those conflicts? We did not wish to do so before the PRC

received nuclear weapons. Why should we wish to do so now when it holds friendly cities hostage around its periphery? It is hard to find an example where the first use of nuclear weapons can be justified on both strategic and political grounds.

It is still less likely that the United States would want to use nuclear weapons against a non-nuclear power in Asia or elsewhere.

Furthermore, a no-first-use pledge has concrete advantages for the United States from the point of view both of bureaucrats and of statesmen.

Bureaucrats know that American military forces will not prepare for non-nuclear conflict as seriously as they should, unless a formal public decision is announced precluding American nuclear escalation.

It is said that, at the time the *Pueblo* was seized by North Korea, one obstacle to U.S. military action was the fact that available planes in the vicinity were loaded with (unusable) nuclear weapons.

And Statesmen know that it would be very useful to encourage the notion that nuclear weapons are unthinkable. A 26-year precedent of non-use of nuclear weapons is a valuable defense of the U.S. against the only weapons that can destroy us. We want nuclear weapons to become, as biological weapons have become, something that Governments do not seriously consider using. Such a climate of opinion cannot be shaped in a world in which America openly (or quietly) threatens to use nuclear weapons. In particular, in every world crisis, the word or rumour has gone out that America is about to use nuclear weapons. Only an explicit no-first-use policy can prevent these rumours. If we do not announce that we will not use nuclear weapons, the world will announce the opposite for us.

FAS OPPOSED THE SPACE SHUTTLE

The Space Shuttle is a joint NASA-USAF proposal to develop, by 1978, a rocket craft system which would be able to launch payloads of up to thirty tons into low space orbit every week. Its purpose is to launch payloads into low orbit much more cheaply than present one-shot rocketry can do. For the Air Force, which recently lost *Dyna-soar* and *Manned Orbiting Laboratory (MOL)*, the Space Shuttle holds promise of putting a man in space. But testimony of Secretary of the Air Force Seamans reveals that there is no present clear importance of the project to national security.

Cost estimates suggest that the shuttle will involve 9 or 10 billion for R&D and testing, and 4 to 6 billion more to buy and operate four or five pairs of vehicles. Operation of the shuttle will cost more over time, of course.

Since the shuttle is justified as a cost-saver, its economics are critical. Without cost overruns, the Federation calculated that the shuttle would be economical if, for example, as many as forty launches a year were required of five tons each. But it saw little likelihood that such use would be required unless there were plans for substantial manned occupation of orbit. No convincing rationale being available for this, FAS opposed the program. These calculations, it should be emphasized, did not include the likelihood — if not the certainty — of enormous cost overruns.

In sum, the Federation felt the shuttle should not be approved until the investment value of the scheme was shown in terms of foreseen and desired uses.

ARMED SERVICES COMMITTEE

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This is a real possibility. When the squeeze strikes, the military services tend to prefer weapons to men. The weapons most desired are the dramatic, goldplated ones which push the state of the art and inevitably lead to large cost overruns. Inflation has taught the Committee something that defense critics could not.

The Committee has also noticed that Department of Defense development procedures are so structured that in each area there is only a single weapon system available to modernize the forces — and this system is often a very costly one. Thus Congress is faced, the Committee concluded, with approving the system or denying modern weapons to our armed forces. Projecting current trends, the Committee concluded that we will soon see either “striking increases in Defense budgets, a sharp decline in force levels and readiness, or reform of the weapon system development and procurement process.”

Comparing the Senate Committee report of last year and this one, one observes in the introductions a striking improvement in sophistication, and in grasp of the military procurement problem. But the Committee actions still reveal a failure to come to grips with the dilemmas articulated.

For example, the dominant purpose of the F-14 is to defend carriers and their fleets in nuclear wars with the Soviets — wars in which carriers play a role that is both minimal and increasingly hopeless in the face of submarine launched missile attack. But the Administration requests \$1.034 billion for 48 F-14 Navy fighters [\$16 million a plane] because it will “achieve a significant increase in performance” over the F-4 [cost \$4,000,000 per plane] and “will be able to cope with the Soviet threat.” Such cliches continue to replace options and to hide the vulnerability of the Committee to the Defense Department strategy of providing no options and low estimates. The House Armed Services Committee conclusion was revealing; it authorized the 48 F-14s “due to the ever increasing need for this air superiority weapons systems (*the Navy stopped buying F-4s two years ago*) and the ever increasing Soviet threat. . . .” [Italics added] In short, Mr. Hebert’s Committee felt it had no choice.

Some other major issues touched upon in one or both reports:

SAFEGUARD ABM: The Senate Armed Services Committee continues to support Safeguard because it will “interject major uncertainties into the potential attacker’s plans.” To that end, the Committee continues to support a program now costed at \$7.1 billion — of which \$3.2 billion can no longer be recovered. The Committee has now restricted authorization of deployment to only two sites and advance preparation at two others. The House Armed Services Committee had acceded to the Administration request for advanced preparation at Washington in case a site was to be put there, but the Senate Armed Services Committee rejected preparing for that option. (Both Committees revealed how little they listen to critics by arguing that reports of technical progress with Safeguard had confounded critics who said Safeguard would not “work.”)

B-1 BOMBER: The Senate Armed Services Committee

concluded that “the ability of the Air Force to develop this important weapon system in an orderly manner, and at a reasonable cost, must yet be demonstrated.” It expects to make a production decision in fiscal 1975 and will follow the program “closely.” It encouraged development of SCAD (Subsonic Cruise Armed Decoy) as a “hedge against unanticipated difficulties with the B-1 program.” SCAD constitutes a series of missiles to be carried by a bomber; e.g., the existing B-52. Each missile would look to the enemy as another bomber. Thus the decoy would vastly increase the problems of the defense. (SCAD missiles can be built with warheads in them as well; thus, even if the enemy can identify them after their launch, he must still destroy them. In effect SCAD is a bomber-MIRV.)

The House Armed Services Committee comment on the B-1 was intensely enthusiastic and it (mis)quoted the opposition to B-1 as objecting to a triad of three strategic forces: bombers, land missiles, and sea-based missiles. (Lengthy testimony before the Committee from the Federation and others had pointed out that B-52s could be maintained if bombers were wanted. Indeed, the Air Force position on B-52 survivability is not that B-1 is necessary to replace a worn-out B-52, but that it would be cheaper to have B-1, than to try to maintain B-52s (The economies would be revealed after 17 years had gone by!)

MAIN BATTLE TANK (XM-803, formerly the MBT-70): The Senate Armed Services Committee was at pains to point out that DOD estimates that the tank would cost \$600,000 each were deficient in certain regards, though “accurate.” The real cost, it concluded, would be \$1.1 million, or five times the cost of the present tank, the M-60A1. With anti-tank weapons getting cheaper all the time, why buy more expensive tanks that necessarily can be purchased only in much fewer numbers? The Senate Committee is only offering R&D money to develop the tank as yet. The House Armed Services Committee noted that the Army wanted \$2.4 billion for tanks through 1984, and noted that the Soviets were no longer producing heavy tanks.

AWACS (Airborne Warning and Control System): The Senate Armed Services Committee, after lengthy hearings by a special Subcommittee, still continues to ignore an elementary argument: viz. modernizing our bomber defense without building a missile defense is pointless. The Committee knows that the Soviet Union has enough missiles to destroy us several times over. The President himself has admitted that no defense can protect against these missiles. Why then build defenses against bombers?

The Committee’s report recommends a milestone approach to bomber defense with careful watching of the Soviet bomber threat! The inanity of the Committee’s recommendation and the persistence of its failure to recognize simple logic is discouraging indeed. Today, to spend public funds on modernizing bomber defense is simply irresponsible waste.

F-111 (TFX): F-111 is an all-weather fighter bomber greatly favored by the House Armed Services Committee. When it learned that the Air Force wanted only 70, it forced the Defense Department to buy 12 more (and thus to keep production lines open for 18 months) by authorizing an additional \$112 million — hence \$9 million per plane.

FAS R&D STATEMENT

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simply extrapolated estimates of the rate of growth of Soviet R&D on space, atomic energy and military from the 1950-57 period and then subtracted off the space expenditures by estimating what these relatively open space expenditures might have cost. By further assuming that the Soviet space expenditures were now to remain constant, DOD unearthed a very steep rise in Soviet military (and atomic energy) R&D starting in 1968.

Not surprisingly, NASA does not agree with this estimate. At the hearings, Senator Proxmire read into the record testimony from NASA's Deputy Administrator Dr. George M. Low which suggested the Soviets were "steadily increasing R&D investment" in their space program and would "soon match and then surpass" the U.S.:

"In terms of their total space program, both civil and military, we believe they are investing at least as much effort as the United States, and probably more. It seems fair to say that they are maintaining and increasing their program effort in that this effort exceeds that of the U.S. With this policy of steadily increasing R&D investments, they will soon match and then surpass the U.S. in both program size and accomplishment unless we act positively and energetically to retain or extend our technological lead."

At this hearing, Dr. Richard Nelson of Yale University deplored "simply jacking up our military R&D budget even if the Soviets were spending more on R&D." Arguing that it "took one generation of defense analysts to rid the military of the absurd notion that somehow the strategic balance or threat could be measured by ratios of bombers, or bombers plus missiles, or warheads or yield", Nelson called the ratio of R&D spending "an even greater silliness" as a threat index.

Council Member George Rathjens of MIT argued that the idea that the Soviets had an advantage in secrecy was "probably wrong or at least exaggerated." The tight Soviet security system simply inhibited criticism. Much of Soviet advance was due to their ability to follow our lead, like a skier following in the tracks of another. Rathjens argued that the U.S. had a "significant lead" over the Soviet Union in "most areas of military technology and in

many of the relevant sciences, on which technology depends." Deplored alarm about Soviet advances, Rathjens was concerned over the state of science and technology in the United States — unemployment of scientists, misuse of technology, and disillusionment of students.

The Senate Armed Services Committee report commented confusingly upon this debate without reference to FAS. It asserted that DDR&E statements that the U.S. might lose technological superiority to the Soviet Union in the mid-to-latter part of this decade "should be taken seriously." But it noted later that "just the fact" that responsible DOD officials "sound the alarm" whether or not "exaggerated", is sufficient cause for the Committee's concern. In effect, the Committee took the view that R&D expenditures could not hurt. It argued that if the DOD statements were "in any way misleading", then the funds would still help our technology. And if DOD were right, the funds were really needed. This seems an easy formula for shedding responsibility for authorizing expenditures.

The Committee quoted the GAO report correctly as having reservations as to the usefulness of DOD reasoning in quantifying relative efforts. But it then chided DOD for not having raised the issue "sooner and with greater emphasis". And then it argued that a "flood of money" was not the answer, but careful apportionment to the right areas might be.

The drafting seemed to suggest, as Gertrude Stein would have put it, that a committee is a committee is a committee.

POCKET CALENDARS REPLACE
MEMBERSHIP CARDS

Members will shortly be sent pocket calendar date books, handsomely bound with the words Member, Federation of American Scientists, 1972, embossed on them in gold lettering. The calendar contains a dues return envelope in its inside flap for remission of 1972 annual dues. The Federation can afford to send the calendars on the assumption that it can save by avoiding dues reminder notices — which are now stamped into the calendar — and because FAS anticipates and urges prompt payment of dues. If the experiment is a success, Federation members can expect calendars in each successive year.

October, 1971, Vol. 24, No. 7

FAS NEWSLETTER; 203 C St., N.E.; Washington, D.C. 20002
— (202) 546-3300

Published monthly except during July, August and September by the Federation of American Scientists. FAS is a national organization of natural and social scientists, engineers and non-scientists concerned with issues of science and society.

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