Chemical weapons

Study reflects Atlantic divisions

Washington

EUROPEAN and US perceptions of the value of North Atlantic Treaty Organization (NATO) chemical weapons are still very much at odds, to judge from a new joint study* by independent strategists. The Aspen Strategy Group in the United States and the European Strategy Group failed to find common ground on the key question of whether NATO's policy of modernizing chemical weapons while removing them from Europe is justifiable. And both are pessimistic about a total ban.

Chemical weapons remain a source of deep divisions within the NATO alliance; although European countries want a treaty banning them, the United States is keen to preserve the chemical option as a means of countering Soviet first use and to decrease reliance on nuclear weapons.

Under NATO rules of engagement, chemical weapons would be used only if Warsaw Pact countries used them first. The Soviet Union has more advanced chemical capabilities than NATO, and opinions differ over their importance to Soviet war plans.

The Aspen/European study believes that chemical weapons are probably not a Soviet "weapon of choice". But it could not agree on the wisdom of the planned modernization of the NATO chemical weapons stockpile.

Many, not least the US government's General Accounting Office, have serious reservations about the likely usefulness of the 'Bigeye' binary chemical bomb now being developed (see *Nature* **321**, 717; 1986). Binary weapons are in principle safer than the single-agent weapons now in storage, because two relatively non-toxic agents do not become lethal until mixed during flight. But the Bigeye has had severe technical problems.

Unable to reach joint agreement on NATO strategy, the Aspen/European study settled instead on the face-saving formula that chemical weapons should not be a cause of alliance disunity in deterring conventional or nuclear war in Europe. The group almost tries to have it both ways by saying there is no justification for NATO acquiring a large-scale chemical war-fighting capability, but also that few believe NATO policy should allow nuclear deterrence to be the only means of deterring possible Soviet use.

The compromise seems to be that a small offensive capability would be prudent, which is what NATO has. Given that, the group could find no rational reason for removing them from Europe to the United States. The NATO plan to airlift chemical weapons across the Atlantic in a time of crisis is seen by the group as substantially limiting their deterrent value; the logistical burden in a military crisis would be very substantial.

Negotiations for a comprehensive chemical weapons ban have been in progress for nine years, with little sign yet of agreement. Verification is, of course, the stumbling block, with the United States and the Soviet Union deadlocked mainly over the question of on-site inspections.

The Soviet Union has accepted the principle that destruction of chemical weapons stocks should be monitored continually by on-site inspectors, and appears to be moving towards accepting the need for a quota of on-site inspections to verify compliance. But the United States recently hardened its position, arguing the need for a short notice (48-hour) mandatory challenge procedure.

The Soviets so far reject anything but voluntary inspections, although there is a British proposal that might break the deadlock. Under the proposal, an on-site inspection could be legally refused if the accused party provided evidence that the inspection was unjustified. The proposal fails, however, to specify the type and standard of "evidence of innocence" that would suffice. **Tim Beardsley**

* *Chemical Weapons and Western Security Policy*, Aspen Strategy Group and European Strategy Group, 1986.

National Science Foundation

New centres for biotechnology

Washington

THE US National Science Foundation (NSF) plans to spend more money on shared instrumentation and multidisciplinary basic research related to biotechnology. The new programme has two strands — facilities centres to be set up in 1987 and research centres to follow a year later.

Eight million dollars have been appropriated for the development of multi-user instrumentation facilities, or 'mini-centres', in 1987. The foundation expects to make 10–15 two-year awards averaging $500,000 each for these centres, which are being developed to meet the demands of the "consistent lobby of people [doing basic biological research] who need access to sophisticated instruments for less than full-time use", according to Thomas Quarles at NSF.

The instruments NSF has in mind include costly items such as DNA or protein synthesizers, peptide sequencers and the new nucleotide sequencers developed earlier this year. Prices vary, with the DNA machines costing between $30,000 and $90,000, and the peptide machines ranging between $85,000 and $160,000. These prices are prohibitive for many research laboratories, especially if they need the machines only occasionally.

The instrumentation sharing programme has two objectives. The first is to maximize the return on investment by attempting to ensure nearly full-time use of expensive equipment by combined groups of researchers. The second is to stimulate multidisciplinary exchanges through the common use of equipment.

The centres are not, however, designed to be regional facilities located equidistant from the researchers who will use the instruments. David Kingsbury, the assistant director for the directorate administering the programme at NSF, says he sees the instrumentation awards in 1987 going to single departments or groups of investigators in one area.

According to Kingsbury, the success of previous regional shared instrumentation centres has been mixed, depending on the users' location. Often, the institution physically housing the equipment has received the greatest benefit, with little regular sharing with researchers elsewhere. To qualify for support under the research centre scheme in 1988, laboratories will need to demonstrate the quality of their research programme as well as their need for equipment. The aim is to encourage people from various disciplines to work together on important problems in biotechnology. The money is expected to establish, modify or support existing multidisciplinary biological research centres, and the grants will be structured to fill gaps not financed by industry, universities or other government entities.

Kingsbury expects "everyone under the Sun" to apply for the research centre grants, and foresees joint proposals from, for example, ecologists and microbiologists and from chemists and biologists. These awards will depend on the treatment by Congress of the NSF budget for 1988, not yet published, but may be as large as $2–4 million per centre.

NSF says that it has no preconceptions of the topics these centres should deal with except that they should be within the field of biotechnology and should not be related to diseases or the development of drugs, which are the responsibility of other agencies.

Proposals for the 1987 facilities centres are due by 1 April 1987, and those for the 1988 research centres by 1 August 1987. Awards will be made after the deciding panel meets in May or June. James Brown, the division director at NSF, says it will be "nip and tuck" to make the facilities awards within the 1987 fiscal year, which ends next September. **Carol Ezzell**

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