

The Future of Tactical Nuclear Weapons

by

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For decades now, it has been taken for granted that nuclear weapons were, in some sense, useless. However, the argument has generally been that this was because of politics: the mammoth bombs were so powerful that only a relative handful of them needed to be dropped to destroy the world, rendering the presumably major conflict which led to their being dropped in the first place meaningless. (This, of course, may be a moot point since nuclear proliferation is putting many small arsenals into the hands of third-rank powers, though it still applies to the major ones.) Indeed, consciousness of this fact helped to foster what I call the "nuclear taboo", a belief that nuclear weapons are qualitatively different from other weapons, and that their use represents the crossing of some special threshold, the commitment of a particularly inhuman act likely to lead to the destruction of humankind.

However, military history shows that the distinction between "acceptable" and "unacceptable" weapons exists solely in man's mind, a convention like any other, not necessarily logical and probably not permanent. Dynamite, after all, had once been thought such a weapon, not only inhumane, but certain to make war impossible by virtue of its destructiveness, or bring civilisation crashing down if it fell into "the wrong hands". The absurdity of such predictions is not only clear in hindsight, but indicates that the extent to which these conventions survive contact with the real world depends in large part on the characteristics of specific nuclear devices, rather than a general aversion to weapons based on the principles of fission and fusion. And while there may be little comparison in the potential destructive power of nuclear weapons to that of dynamite, the truth is that the uselessness of nuclear weapons may have stemmed as much from practicality as politics.

Besides being very powerful, nuclear weapons were highly radioactive and delivered with extreme inaccuracy, for which the sheer size of their blast was meant to compensate. There was no hope of employing them tactically against, say, troop concentrations; the "dirty" bombs of the early nuclear era left battlefields so hopelessly irradiated that soldiers could not fight on them. (The use of atomic bombs anywhere near friendly troops in the planned invasion of Japan was ruled out for that very reason.) Furthermore, the inaccuracy of the delivery systems meant that the yields of the weapons had to be fairly large, and the weapons used copiously, which only worsened matters.

There may have been no paucity of schemes for getting around these problems, such as the use of smaller, more mobile units, but none of them was ever proven feasible. Consequently, the nuclear weapons of the era could only be employed strategically, and it was understood even then that strategic bombing, even on the grand scale on which it had been practiced, was of

uncertain effectiveness in breaking a state's war-making capacity. Even Hiroshima, after being atom-bombed, survived the damage inflicted upon it, and was functioning again within days. Additionally, it was considered highly questionable, at least with the weapons available in the forties, that nuclear attacks could bring Russia to its knees, much less stop the Red Army from overrunning Western Europe.

Further, while no quantity of conventional munitions can equal a superpower's nuclear arsenal for sheer megatonnage, the effects of anything short of the nuclear exchange the superpowers were capable of launching by the early nineteen sixties could be replicated with non-nuclear munitions. The validity of the concept having been proven for the American high command by the firebombing of Tokyo, in which 16.7 square miles of the city were burned to the ground in a single night, General Curtis LeMay

laid on firebombings night after night against city after city until his supply depots ran out of bombs; resupplied, he pursued the fire-bombing campaign . . . until the end of the war, by which time sixty-three Japanese cities had been totally or partially burned out . . . Hiroshima and Nagasaki survived to be atomic-bombed only because Washington had removed them from Curtis LeMay's target list.

For the purposes of demolishing one city at a time, atomic bombs were no more destructive than TNT, only less expensive logistically in that one plane could do the work of hundreds, which in turn meant that nuclear weapons were only useful insofar as it was desirable to destroy hundreds of cities at once. Moreover, particularly in the later Cold War years, this was also a matter of self-annihilation, since even were it possible for one of the superpowers to destroy its adversary's nuclear forces in a first strike, the Earth's climate system would retaliate against it, so to speak. The environmental damage entailed by nuclear winter would not only have made it impossible to fight a war (for instance, the resulting clouds of dust and smoke would "degrade" the performance of jet engines), but made existence impossible, producing famine and epidemics on a hitherto unknown scale.

At the same time, it might be said that LeMay's fire-bombing of Japan constituted a quasi-nuclear campaign, which is why it should be surprising that despite the Cold War context in which the limited Korean War was fought, another, equally massive fire-bombing campaign was conducted against North Korea. Again, something resembling the effects of a nuclear war was attained without the deployment of actual nuclear weapons, save, of course, for the fact that napalm had the virtue of not showering radioactive fallout across Northeast Asia. Certainly, not all nuclear weapons states possessed such resources, but even the smaller nations which acquired nuclear arsenals were generally the militarily predominant powers in their region, and therefore only too capable of ensuring their security through conventional means, as the Israelis did in the 1973 Arab-Israeli War when their possession of a nuclear arsenal failed to prevent an (albeit limited) Arab attack.

All of this made nuclear weapons less an effective tool of strategy or tactics than of annihilation, helping to foster the association of nuclear weapons with apocalypse. However, it is likely that there will be entirely new types of nuclear weapon deployed in the future; indeed, some countries appear to be banking on it. Following NATO's 1999 air campaign against Yugoslavia, Russia has

begun to reorganize its arsenal for limited nuclear warfare, as a halfway measure between doing nothing at all and committing its strategic nuclear arsenal to a world-shattering exchange.

Russian weapons designers (and, presumably, their counterparts in other countries) have been for years developing new classes of nuclear weapons, with yields as low as a few tens of tons and one hundred to one thousand times "cleaner" than the current generation of weapons. (This will be because they achieve fusion without a fission primary, which means that no radioactive fissile material is used, and that there is no need to achieve critical mass, so that very small nuclear explosions are possible.) Further, the Russian government is reportedly initiating a buildup of ten thousand tactical nuclear weapons, with yields of one tenth of a kiloton or less, to achieve a "pinpoint" nuclear capability (the ability to use small nuclear weapons the same way in which the United States uses smart bombs and cruise missiles), making "limited nuclear war" theoretically possible.

Nuclear weapons as small and as clean as those the Russian military intends to deploy will blur the lines between nuclear and conventional weapons, since the newest versions of the former will, in theory, be only marginally more contaminating, indiscriminate or destructive than the latter (though they will be more efficient, by some measures). This will make their usage more practical from a military standpoint, as well as undermine the argument that they represent a unique and impermissible type of weapon. Accordingly, Russian strategists believe that this will make their use unlikely to provoke an all-out war, and the threat of their employment therefore more credible than the saber-rattling which accompanied earlier Russian protests over NATO expansion, or American policy towards Iraq.

Of course, this is by no means the first attempt to formulate a plan to fight a nuclear war, and it is possible that this doctrine may be as quixotic as all those which preceded it. However, it differs from the schemes of the Cold War in one very important way: the scope of these plans is far less ambitious. Where a nuclear bomb once substituted for hundreds of strategic bombers loaded down with thousands of tons of incendiary bombs (or hundreds of bombers substituted for a single nuclear weapon), a mini-nuke may now be used in place of a squadron of tactical aircraft with only a few tons of laser-guided bombs a piece. Further, while Russia may be unlikely to actually employ such weapons in all but the gravest crisis, such a conception means greater leeway for Russia to substitute its nuclear arsenal for its long since dilapidated conventional strength.

Nonetheless, that the Russians will be able to transform their vision into reality in the immediate future is anything but a given. It may be that the Russian government, which intentionally leaked these plans, is overstating the degree to which the relevant technologies have been perfected. Further, while the new weapons have reportedly been on the drawing boards for years, and are to be manufactured from existing nuclear materials and mated to available delivery systems, greatly reducing the cost of the program, virtually any expense, however modest, seems at times to be beyond Russia's resources. Despite the priority it has been accorded in funding, the Russian nuclear arsenal grows increasingly decrepit, the government having been unable to maintain the infrastructure of its nuclear forces or the nuclear weapons production cycle, much less successfully develop and deploy new weapons. The endless delays in the construction of the first Borey-class ballistic missile submarine aside, the production of the new Topol-M

intercontinental ballistic missile has been proceeding at a much slower pace than was originally expected. The most recent expedition into Chechnya is likely to reduce the available funding even further in the short term.

Regardless, one may assume that the Russians are sincere in their intentions, even as Western countries appear to be proceeding in the opposite direction. Both the United States and Great Britain have been much quicker to abandon tactical weapons than strategic ones. The assertion by many experts that the Revolution in Military Affairs has made it possible for conventional weapons to perform missions that would previously have been executable only with nuclear weapons has rendered them irrelevant in many eyes. This is especially true because many observers, after living for so long in the Cold War's shadow, do not seem able to decouple tactical and strategic nuclear war. In this atmosphere, President Bush unilaterally ordered the destruction of American tactical nuclear weapons, and Congress has "cast this decision into concrete" by passing legislation forbidding the testing, development, and stockpiling of nuclear warheads having yields of less than five kilotons, so that the tactical nuclear option is, for now, off the table. England's Royal Navy, at the same time, retains its only nuclear capability in its Trident ballistic missile submarines. Nonetheless, research has not come to a halt in these countries, as is indicated by continuing work on electromagnetic pulse weapons in the United States, and experiments in "confinement fusion" conducted by the five first members of the nuclear club, as well as by several non-nuclear, but advanced, states such as Germany and Japan.

Further, whether accuracy, at present, compensates completely for recent reductions in mass is another matter. The payload of a modern-day anti-ship missile packs only a fraction of the punch of a single shell fired from the main guns of an Iowa-class battleship of the Second World War era, four of which were called back into service in the nineteen eighties in the U.S. Navy because there was as yet no substitute for them. It is also often stated by observers that today's American military, while more technologically advanced in certain respects than it was in 1991, is still "not the force that won the Gulf War", and has seen its size slashed too deeply for it to repeat the feat.

One way of getting around this problem would be to increase the firepower, as well as the precision, of present systems, to mate the new nuclear weapons with the more precise delivery systems now available. Nuclear weapons of the sort that the Russians have declared an intent to deploy would be one way of going about this. At present, for example, work is being done to turn cruise missiles into genuine unmanned bombers, capable of attacking multiple targets. Should appropriate low-yield nuclear submunitions, each with the power of a large conventional bomb, be developed to this end, they would drastically multiply the effectiveness of the Tomahawk's thousand-pound payload, which at present pales next to that of even a single attack plane. It stands to reason that one such cruise missile could do the work of several, perhaps even scores of Tomahawk missiles, greatly increasing the potency of what has become the preferred American response to provocations by rogue states. Conceivably, an aerial campaign could be executed without sending a single pilot into enemy airspace, and should cruise missiles flexible enough to make a tactical difference be developed, they could execute even more ambitious operations, such as slowing down an Iraqi reinvasion of Kuwait. More modestly, however, small expeditionary forces would be able to offset the superior numbers of local opponents with similar weapons fired from artillery or dropped from aircraft. (Such an approach would be of particular

use to a country like Britain or France, which have nuclear arsenals and worldwide networks of bases, but are incapable of sending militarily significant forces very far away from home.)

Politically, however, such an action may be untenable for some time (particularly in light of the admittedly reduced, but nonetheless extant, risk of radioactive contamination), and it is more likely that these weapons will initially be used in circumstances which offer no alternative to nuclear strikes. Nuclear weapons may be the sole weapons capable of attacking specific types of targets, such as certain underground facilities. (The latest addition to the American nuclear arsenal is the B 61-11, which is designed as an earth penetrator.) Furthermore, many of the current designs for space-based weapons, such as X-ray lasers; missile defence systems, like plasma weapons which ionize the atmosphere; and even "non-lethal weapons", like the electromagnetic pulse (EMP) weapon, have a basis in nuclear weapons technology. (The development of these weapons, incidentally, may be legal under the Comprehensive Test Ban Treaty.) There may also be circumstances in which, for one reason or another, precision-guided munitions (or their command and control systems) may not be available in the necessary numbers.

Whether such a scenario will actually appear in the near future, however, is anything but certain. Many would point that this entire line of reasoning is moot due to the decline of conventional warfare in general which, it is pointed out correctly, is at least one reason why militaries have been shrinking in the first place. The Soviet Union, for all its military commitments, did not fight a conventional war after 1945, and nor did the United States after Korea until Desert Storm. In the kinds of wars that were usually fought, as in Vietnam, Lebanon and Afghanistan, even tactical nuclear weapons would have been, even assuming a willingness to contaminate friendly territory, of only occasional utility at best, the enemy generally being dispersed, concealed among the civilian population, prone to hit and run and possessing little infrastructure.

Certainly, most states today have no great fear of external invasion, the conventional wisdom holding that most wars will be internal affairs, waged between guerrillas or terrorists and the forces of domestic order. Regardless, no one would argue with the assertion that for at least the next few decades, marginal, underdeveloped states, like Ethiopia and Eritrea, may wage conventional, interstate warfare on a modest scale. Few would totally discount the possibility of war between larger states, such as India and Pakistan, or sporadic, asymmetrical conflict between the United States and rogue states like Iraq.

Even were that not the case, the rise of the guerrilla did not so much spell the end of conventional warfare as consign it to an end game, and then only because of the clear superiority of states in conventional military power, which they survive principally by avoiding. Guerrillas using hit and run tactics may be able to tie down massive resources, sap the will and strength of a larger opponent, exacerbate social tensions and even deny the enemy effective control over its own territory, but they can not occupy ground as they eventually must to win, next to which all is mere preparation. Saigon, after all, fell not to guerrillas, but to North Vietnamese armor, and the same logic holds true today; in Colombia, the FARC (Revolutionary Armed Forces of Colombia) insurgency is working towards attaining a level of strength that will allow it to openly challenge the government's forces in the field.

At the same time, it is probably incorrect to assume that "the forces of order" will remain centered upon the state. The monopoly of the state on violence has always been somewhat theoretical, and will likely become more so in the future. (Even in the United States, much of the population considers arming itself a constitutional right, and state governors have some authority to call on their own military units, namely the National Guard.) The decline of welfare systems, the emergence of a world market increasingly less unencumbered by borders or regulation, and the decline of interstate warfare in much of the world have deprived even the most successful of states of much of their reason for being. Other states, lacking political legitimacy in the eyes of their people, or economic viability, have simply ceased to exist, as has been the case in Somalia and Afghanistan, and could be the case in a great many other places in the foreseeable future.

In either case, the services that governments once provided are increasingly privatised, from health care to physical security, and even military power is increasingly dispersed. The end of the Cold War has seen the rise of private military companies, like Sandline International, which do everything from train one's soldiers to put down rebellions for a fee, and just as the condottieri have returned to the world stage, so to speak, so might lords and dukes. In Colombia, the central government has allied itself with the right-wing paramilitary forces which are in de facto control of ten percent the country, in order to combat a seemingly intractable leftist insurgency. In Russia, there has even been talk of restoring the Cossacks as part of the military establishment.

Failing states, of which Colombia and Russia are two examples, moreover, will not always possess the preponderance of power that has forced guerrillas to hit and run. Instead, the breakdown of order will force them to accommodate themselves to the diffusion of armed force, even concluding alliances with some factions, which will brandish their military power more openly under the circumstances. Like the feudal lords who preceded them, they will probably have the modern-day equivalent of castles, and their armies might possess considerable heavy equipment, and the infrastructure which goes along with that. The Chechen insurgents, notably, had possessed an air force with over two hundred and fifty aircraft when Russia invaded the republic in 1994, as well as hundreds of armored vehicles and artillery pieces. The Bosnian Serb forces which laid siege to Sarajevo were similarly equipped. In any case, conventional wars will more likely change form or shrink in scope than disappear, just as it seems that some sort of central authority will survive in most places, even if the power of today's states will in many cases be parceled out to other players. These forces could all be targets of such weapons as are described here, or, perhaps, depending on how widely the technology proliferates, users of them.

Regardless of the exact form that conflict will take in the future, however, nuclear weapons will in the future be less contaminating, more discriminate, and more versatile, which, with the decline of conventional forces and the splintering of international conflict, will strengthen the temptation to use them. Indeed, there may be situations in which tactical nuclear weapons will appear to be not only a choice, but the only choice, and it would not be the first time someone argued that nuclear weapons had to be used in order to save lives. The taboo will likely break down to some extent, applying only to particular categories of nuclear weapon rather than nuclear weapons generally, or the use of the weapons against specific targets, freeing decisionmakers to use them. The use of these weapons, in turn, will undermine the taboo, setting a precedent for others. In any case, what would have been condemned in one period, much as

had been the case with dynamite, will come to be not merely accepted, but even praised in another, the early prohibition as anachronistic to future observers as the horror with which the Church had regarded crossbows seems to people of our time.

Notes

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