

## I ASSESSING CAPABILITIES AND CONTROLLING ARMAMENTS BY NUMBERS AND BY QUALITY OF WEAPONS

### Numbers and Quality of Conventional Weapons

The planning and conduct of military operations in war requires continual assessment of the combat power of both friendly and enemy forces. In peacetime, for the preservation of national and international security, and for the maintenance of security balances established through arms control agreements, it is also important to be able to assess the combat potential of various military formations, and to be able to ascertain whether balances are being changed. It is obvious that the capability for war of a nation, an army, or a collection of military hardware, depends on both the numbers of men and weapons and on their quality.

The relative importance of numbers and quality can be debated at great length. According to Lanchester's Law, devised for engagements between forces equipped with individually aimed long-range weapons, combat power is directly proportional to the lethality of each individual weapon, but varies as the square of the number of weapons. This would suggest that numbers are more important than quality. In previous centuries, opposing European armies were usually armed with similar weapons, with the result that battles and campaigns were determined by generalship, logistics, and the number (and quality) of soldiers, rather than the quality of weapons. A king preparing for war put more priority on making alliances with other powers, especially those with sizeable armies, equipped much as his own forces, rather than on attempting to acquire or develop superior weapons. And the advance of technology was so slow that any improvement in the performance of a weapon was likely to be marginal, and would soon be observed and copied by the rivals.

The importance of the quality of weapons was evident in conflict between societies at distinctly different levels of technological development. A few Europeans with firearms were able to conquer far larger numbers of warriors not so equipped.

However, in Vietnam and Afghanistan the possession of technically superior weapons was insufficient to achieve victory, although it should be added that this superiority was partially offset by the provision to the North Vietnamese and Afghan *Mujahaddin* of certain key modern weapons such as surface-to-air missiles. The decisive victory of the UN coalition in the Persian Gulf was due to superior quality of equipment, men, and organization, rather than to numbers of weapons or soldiers.