

forces which remain, and to retain the national capability to arm reconstituted forces with the most modern equipment, should the need arise in the future. Also, in addition to the incentives related to national security, international relations, and the balance of power, there is the opportunity for profit in the sale of advanced military equipment.

For several good reasons, arms control has concentrated on the quantities rather than the qualities of weapons. It will be shown that it has been possible to make very significant additions to the military capabilities of a weapons inventory by modernizing or replacing the equipment, without increasing the numbers deployed. The force balances in place at the time of the signing of an arms control agreement may change in subsequent years without any violation of the terms of the agreement. A quantitative arms race can be replaced by a qualitative arms race.

Instances will be pointed out in which modernization resulted in important improvements to strategic stability. It should not be concluded that modernization is necessarily undesirable or dangerous.

To keep the study within reasonable bounds, to concentrate on military systems already involved in arms control, and to consider systems for which historical data is available, the discussion will focus on strategic systems (ICBMs, SSBNs, SLBMs, strategic bomber aircraft, ALCMs, and to some extent on their nuclear weapons), tactical air systems (fighter/attack and interceptor aircraft), and tactical land forces (tanks and anti-tank guided missiles). Naturally, bombers and tactical combat aircraft are affected by surface-to-air missiles, tanks by attack helicopters, and all of these by C3I. Tactical naval forces are very important, and demonstrate modernization as well as the others, but they have not as yet become subject to arms control. What is included in the paper is only a small selection of the thirty-one systems, but it should suffice to illustrate some of the aspects of modernization and how they affect both arms control and the assessment of force balances.