

from prepared defensive positions, thereby reducing its exposure to enemy fire while engaging the more-exposed attacking forces as they move across the battlefield.⁸ How do the relative advantages of offence and defence balance? The traditional 'rule of thumb' holds that the offence must outnumber the defence three-to-one in order to have a reasonable expectation of success on the battlefield. The 1976 version of the United States Army field manual - FM 100-5, Operations - states that a defending unit can stop a force up to five times its size for short periods, assuming heavy air and artillery support on favourable terrain, and recommends force concentrations of six-to-one for offensive operations. In general, then, it seems fewer forces are needed to defend than to attack.

At some point, the defence reaches the optimum size relative to the area defended. This is referred to as the **force-to-space ratio**, i.e., the ideal concentration of combat power over a given length of the front. In modern armies, this ratio is thought to vary from seven to fifteen km for a brigade.⁹ A unit defending a front of this length is thought

⁸ One weakness in NATO's defensive posture is thought to be the lack of prepared defensive fortifications along the inter-German border. Although some criticize over-reliance on such fortifications--recalling the ease with which the Maginot Line along the Franco-German border was outflanked by the German Army in 1940--most concede that prepared fortifications while unable to stop a determined attacker, nevertheless slow him down sufficiently to allow mobile reserve forces to position themselves for further defence. However, the construction of a fortified belt along the inter-German border is politically unacceptable to West Germany, symbolizing as it does the permanent division of Germany.

⁹ This estimate of the 'ideal' force-to-space ration is approximate at best. The assignment of actual brigade frontages depends upon several factors. Rugged terrain demands a greater concentration of combat forces, thereby reducing the optimal size of the brigade front. Frontages may be extended for highly mobile defending forces. Shortages of