

Multiple Independently-targetable Reentry Vehicle (MIRV)

Multiple Independently-targetable Reentry Vehicles (MIRVs) were originally developed in the early 1960s to permit a missile to deliver multiple nuclear warheads to different targets. In contrast to a traditional missile, which carries one warhead, MIRVs can carry multiple warheads. For instance, a Russian MIRVed missile under development may be able to carry up to [16 warheads](#), each in a separate re-entry vehicle. Warheads on MIRVed missiles can be released from the missile at different speeds and in different directions. Some MIRVed missiles can hit targets as far as [1,500 kilometers](#) apart.

Land-based MIRVed missiles are considered particularly destabilizing. These missiles are a much more tempting target than traditional land-based missiles, because an attacker can take out several of their enemy's warheads at once.

Although MIRVs were not initially intended to defeat [ballistic missile defenses](#), they are much more difficult to defend against than traditional missiles and are considered effective BMD countermeasures.

Who has them?

The development of MIRV technology is not easy. It requires the combination of large missiles, small warheads, accurate guidance, and a complex mechanism for releasing warheads sequentially during flight.

The United States was the first country to develop MIRV technology, [deploying](#) a MIRVed Intercontinental Ballistic Missile (ICBM) in 1970 and a MIRVed Submarine-Launched Ballistic Missile (SLBM) in 1971. The Soviet Union quickly followed suit and by the end of the 1970s had developed their own MIRV-enabled ICBM and SLBM technology.

Today, the [United States](#), the [United Kingdom](#), and [France](#) use MIRV technology on SLBMs. [China](#) has MIRVed ICBMs, while [Russia](#) deploys both MIRVed ICBMs and SLBMs. The use of MIRVs on submarines is considered less destabilizing than on land-based missiles because the difficulty of finding nuclear submarines makes strikes against them unlikely.

India and Pakistan are also experimenting with MIRV technology. In January 2017 Pakistan reportedly [tested](#) a MIRVed missile, the Ababeel. Senior Indian defense officials, meanwhile, have [indicated](#) that future iterations of the Agni-class long-range missiles will be MIRVed.

Sources: Federation of American Scientists, Nuclear Threat Initiative, Center for Strategic and International Studies, Union of Concerned Scientists, UK Parliament Research Services, Radio Free Europe, Bulletin of the Atomic Scientists, The Diplomat.

Learn more about MIRVed missiles by checking out [our infographic](#).