The Portable Atomic Bomb – When Special Forces Fought the Russians

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Among the most extreme and secretive military programs conceived during the Cold War is the **SADM** (*Special Atomic Demolition Munition*), a miniaturized tactical nuclear weapon designed to be transported, placed, and detonated by individual special forces operators. Developed by the United States starting in the 1960s, the system responded to a strategic doctrine focused on countering a potential large-scale invasion of Western Europe by forces of the Warsaw Pact.

Origins and Development of the SADM (B54)

In the early years of the Cold War, NATO military planning had to confront the stark numerical superiority of conventional Soviet forces in Central Europe. To bridge this gap and delay a potential offensive, U.S. commands explored unconventional solutions, including the use of tactical-scale demolitive nuclear weapons.

Previous weapons used for atomic demolition, such as the T-4 system, proved excessively heavy and complex, requiring teams from multiple units for piece-by-piece transport. The need to have a weapon truly transportable by a single operator led to the development of the **W54** warhead, the smallest nuclear weapon ever produced in series by the United States.

The variant intended for the SADM, officially designated **B54** (in versions Mod 0, Mod 1, and Mod 2), presented extreme technical specifications:

- **Dimensions:** Approximately 45 centimeters in length (18 inches) and 30 centimeters in diameter (12 inches).
- **Weight:** Between 26.5 kg (58.5 pounds) and 32 kg depending on modifications and transport containers.
- **Explosive power:** Estimated to vary between 10 tons and 1 kiloton of TNT (with selectable enhancement options, equal to fractions of a kiloton).

The weapon integrated a mechanical fuze and ignition system with clockwork timer and illuminated dials with tritium paint to allow nighttime reading of the gauges. It was also equipped with a remote wire control system (*Field Wire Remote Control System*) for remote activation under safe conditions.

The "Green Light Teams": Organization and Training

To manage the operational deployment of the SADM, the **Green Light Teams** were officially established in 1962, elite units recruited primarily from within the U.S. Army Green Berets, but also integrated by Navy SEAL operators, Marine reconnaissance detachments, and military engineers.

Candidates for these units faced rigorous selections focused not only on technical and diving or jump skills, but also on psychological profiles of stability and stress resistance. The teams operated in utmost secrecy, training at Fort Bragg and other specialized bases.

Infiltration Methods

Given the diversity of potential operational theaters (from Central Europe to the Middle East and the Korean Peninsula), the units were trained to infiltrate behind enemy lines through multiple

vectors:

1. **Aerial infiltration:** Drops with high-altitude and low-opening parachutes (HALO – *High-Altitude Low-Opening*), in which the weapon or components were secured to the body or to ventral and leg pouches.
2. **Maritime and underwater infiltration:** Transport via submarines capable of releasing small pneumatic boats or operators specialized in deep diving missions.
3. **Ground infiltration:** Movements on foot or aboard light camouflaged vehicles to evade border controls.

Employment Doctrine and "One-Way" Missions

Military doctrine foresaw the use of the SADM for both offensive and defensive combat engineering purposes. Priority targets included critical infrastructure whose destruction could drastically slow the advance of enemy armored columns:

- Strategic bridges and mountain overpasses
- Tunnels and Alpine passes
- Dams and hydraulic systems
- Port infrastructure, railway junctions, and industrial or energy facilities

The Time Factor and Operational Risks

The intrinsic nature of these missions involved extremely high risk margins. Once the weapon was armed and the mechanical timer started, operators had a limited time interval – estimated on the order of tens of minutes – to disengage from the area and seek shelter from the thermal and pressure effects of the explosion, as well as from immediate radioactive fallout. For this reason, in military historiography and in the testimonies of operators, the program has often been associated with the concept of high-risk missions with reduced survival prospects.

Program Discontinuation and Declassification

With the gradual shift in international geopolitical balance, the easing of tensions between the blocs, and the pressure exerted by some NATO allied countries (concerned about the presence of nuclear weapons on their territory), the program was scaled down during the 1980s.

Between 1986 and 1989, coinciding with the end of the Cold War and the signing of new arms control treaties, the Green Light Teams were definitively dissolved and stockpiles of SADM/B54 munitions withdrawn from active service and dismantled. The details of this program remained covered by military secrecy for decades, gradually emerging through the declassification of official documents and the memoirs of veterans.

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