



Hamas Underground Warfare

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EXECUTIVE SUMMARY: Since taking control of Gaza, Hamas has built a maze of underground concrete bunkers and tunnels. The tunnels were designed to enhance the survivability of Hamas in case of Israeli attack, and to provide terror attack routes into Israel. The IDF must develop the technology and the tactical skills to locate, map and destroy these tunnels.

Underground warfare is not a new phenomenon – it started when humans were living in caves. However, it became a deliberate form of warfare when men began digging tunnels for military defensive and offensive use.

Defensive tunnels were used to hide people and property from attackers. Offensive tunnels were used to infiltrate under defensive walls or to collapse these walls by undermining their foundations. The defenders of besieged cities and forts fought back, trying to locate the attackers' tunnels by digging their own tunnels to break in and capture their enemies in hand-to-hand combat. The major problem for the defenders was locating the tunnels. Unless the attackers were careless, this was rare. The invention of gunpowder made siege and anti-siege tunnels much more effective – the sappers could be less accurate while navigating underground in order to hit the target.

During the First World War, hundreds of tunnels (called 'mines') were dug on the French front by armies on both sides of the conflict, under each other's positions. These were packed with explosives and detonated, killing dozens of men, in some cases more than a hundred, with each attack.

Since the First World War, tunnel warfare reverted mostly to defensive, smuggling or infiltration uses – the most famous and widespread use being during the Vietnam War. The Vietcong dug hundreds of kilometers of multi-level tunnels to live in, hiding from American forces and using them to ambush or raid the Americans. The Americans established a special unit, the Tunnel Rats, to discover and fight inside the tunnels.

More recently, since the mid-1990s, Hezbollah has used tunnels to store weapons and protect personnel. At first these were only under Beirut and in central Lebanon. However, after the Israeli withdrawal in 2000, Hezbollah also began building them in southern Lebanon as underground combat positions for launching rockets and from which to conduct military operations against IDF units above ground. After the war in 2006, Hezbollah increased its investments in these tunnel complexes. Possibly, they are also working on cross-border tunnels into northern Israel.

The use of tunnels in Gaza began approximately a decade and a half ago, on the border with Egypt to smuggle weapons into Gaza under the IDF border security. Very quickly, in addition to smuggling weapons, the tunnel operators began importing civilian goods. After Israel withdrew from Gaza, the number of smuggling tunnels jumped from a few dozen to hundreds as more and more Gazans got involved in this lucrative business. Taxes imposed by the Hamas government on the imports were a major source of its revenue. After the Egyptian military overthrew the Muslim Brotherhood government, the new regime shut down these tunnels – this being one of the causes of the present economic crisis in Gaza.

From 2001 the Palestinians began using explosive-filled tunnels to attack Israeli border-posts. However, they employed this tactic rarely because the effort far exceeded the benefit – casualties were light and it was much easier to achieve them by other means. In 2006 the Palestinians tried something new – a tunnel was dug underneath the Gaza-Israel border and an assault-team emerged behind an Israeli border-post. The Israeli soldiers were surprised – two were killed, one wounded and one abducted (Gilad Shalit).

After taking control of Gaza, Hamas began a project to build a maze of underground concrete bunkers connected with tunnels and multiple entrances/exits underneath the residential areas of Gaza. These underground complexes are fairly similar in concept to the Vietcong tunnels, though the quality of finishing is better with concrete walls and roofs, electricity and other required amenities for a lengthy sojourn.

Their purpose is to enable the Hamas command structure to reside safely underground while their armed forces conduct a mobile defense against Israeli forces. Many of the tunnels are interconnected to enable traveling underground from one to the other with multiple camouflaged openings to emerge above ground in different locations (inside civilian houses, mosques, schools and other public buildings). This enables surprise attacks on the IDF units from different directions, allowing the attackers to then disappear again underground to emerge and attack somewhere else. The exact extent of these complexes is not known. The entrances and probably the tunnels themselves are booby-trapped with explosives. These were first used during Operation

'Cast Lead' (December 2008 – January 2009). They were deemed successful so the project was expanded and accelerated.

After the failure of Hamas' rocket forces to inflict significant damage on Israeli towns in November 2012 (Operation 'Pillar of Defense'), Hamas apparently decided to build a large offensive tunnel capability that would enable them to infiltrate into Israeli villages within a few kilometers of the border or place large bombs underneath these villages.

The IDF knew of this operation but failed to find and destroy more than a few tunnels. Detecting the tunnels requires either detecting the entrance to the tunnel or 'seeing' the tunnel itself with various acoustic, seismic or radar detection devices as it crosses the border. Even after detecting an entrance one does not know the exact route of the tunnel from there to the border.

To hide the tunnel-work from Israeli intelligence the entrances are mostly located on the bottom floor of civilian residences, mosques, schools or other public buildings. The digging of smuggling and offensive-attack tunnels is a long manual process, lasting several months, because the use of motor-diggers would create a noise that could be heard by Israeli listening posts. On the other hand, tunnels distanced from the border can be dug by motor-diggers. In both cases, the removal of the earth from the site is done gradually and camouflaged by various ruses.

As yet, no reliable technology has been developed that can cover a wide area and see a man-sized tunnel to a depth of more than a few meters underground. The tunnels dug by Hamas are usually about 20 meters underground – so, even if you know the approximate location, they are almost impossible to detect. Therefore, Israel must either have excellent intelligence, or go in to search for the tunnels house by house.

Destroying a tunnel is a lengthy and somewhat complex operation. Just blowing up the entrance or some of the airshafts leaves most of the tunnel intact, so Hamas sappers will be able to quickly dig by-pass sections and continue to use the tunnel. Therefore, the entire length of the tunnel and its branches must be located, mapped and then completely destroyed.

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