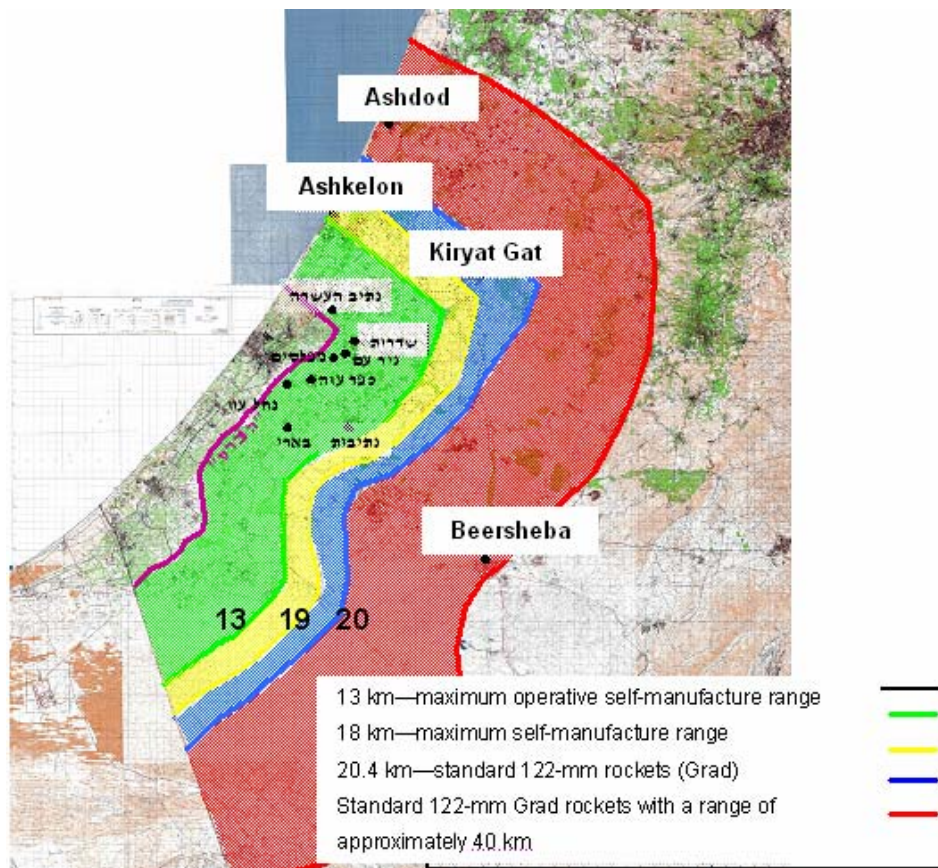




Intelligence and Terrorism  
Information Center  
at the Israel Intelligence Heritage  
& Commemoration Center (IICC)

1 בינואר 2009

## Summary of rocket fire and mortar shelling in 2008



**About one million Israeli civilians threatened by rocket fire**

## Overview

1. The year 2008 saw **the peak** of rocket use by Hamas and the other terrorist organizations operating in the Gaza Strip. Last year, the terrorist organizations managed to **significantly increase the scope of rocket attacks**. They gradually put **nearly one million Israeli civilians living in the south (about 15 percent of the entire population)** within the range of the rockets, and posed a security challenge to Israel, prompting it to launch Operation Cast Lead.

2. Rocket fire and mortar shelling first started in 2001, gradually becoming the major threat posed by the Palestinian terrorist organizations, which consider it an asymmetrical, simple, cheap, and reliable solution to Israel's military superiority. The rockets, while still having their share of problems and shortcomings, in the terrorists' view, allow them to disrupt the lives of **Israeli civilians** within the range of fire, destabilize their social fabric, override the security fence built by Israel along the Gaza Strip, and create a kind of balance of terror that makes it difficult for Israel's security forces to conduct counter-activities and reflects the terrorist policy of Hamas, which controls the Gaza Strip.

3. Following are three major characteristics of the use made by Hamas and the other terrorist organizations of rockets **during 2008** (see chapter on statistical data for details):

a. **A dramatic increase in the extent of rocket fire and mortar shelling despite the six months long lull in the fighting:** in 2008, the peak year of rocket fire and mortar shelling, a total of **3,278 rockets and mortar shells** landed in Israeli territory (1,750 rockets and 1,528 mortar shells). **That is a significant increase** compared to 2007 (the number of landings in 2008 more than doubled) and compared to the previous years of the Palestinian terrorist campaign.

b. **A significant increase in the number of Israeli residents exposed to rocket fire within 40 km of the Gaza Strip:** before 2008, the city of **Sderot** (about 20,000 residents) as well as villages around the Gaza Strip were the preferred target of rocket fire and mortar shelling. In 2008, other cities and hundreds of thousands of Israelis gradually entered the circle of fire: first the cities of **Ashkelon** and **Netivot**, and later, during Operation Cast Lead, **Ashdod**, **Beersheba**, and other cities within a range of 40 kilometers from the Gaza Strip. The rocket attacks created a new reality in which **nearly one million Israeli residents (about 15 percent of the entire**

**population)** are exposed to rocket fire and mortar shelling in various levels of intensity.

c. **A significant improvement in the effectiveness of rockets and mortar shells possessed by Hamas and an increase in their quantity:** in 2008, Hamas put into use **122-mm Grad launchers (for ranges of 20.4 km and approximately 40 km) and standard 120-mm mortars**, which were smuggled into the Gaza Strip (in our assessment, from **Iran**). Those standard rockets and mortars, significantly different from self-manufactured rockets and mortars, not only increased the range of fire but also **increased its effectiveness**. That is a result of **increasing the rockets' warhead size and their fragmentation**. As for the mortars—the standard 120-mm mortars are more precise and their range is greater than that of the other mortars possessed by Hamas and the other terrorist organizations.

4. The **quantity** of rockets held by Hamas and the other terrorist organizations has also increased, currently reaching, in our assessment, a constant supply of **several hundred** self-manufactured 90 and 115-mm rockets and an unknown quantity of **self-manufactured** long-range rockets capable of **attaining greater ranges (up to 19 km)**. Also, we assess that Hamas has dozens of standard long-range Grad rockets (122-mm) **with a range of 20.4 km and a range of approximately 40 km**, smuggled into the Gaza Strip through the tunnels in the Rafah region, some during the lull in the fighting.

5. As a result of the rocket and mortar shell fire, **eight** people were killed in 2008, **four** of them during Operation Cast Lead.<sup>1</sup> During that operation, 58 people were injured as a result of rocket and mortar fire, 10 of them moderately and severely (as at December 31, 2008). Also, several dozen civilians were injured as a result of the rocket fire in 2008 (prior to Operation Cast Lead), and several hundreds suffered stress-related traumas. The number of fatalities, injuries, and stress-related traumas in 2008 is added to the number of casualties in the previous years of the confrontation (2001-2007): **10** civilians were killed, **434** were wounded, and **thousands of civilians** suffered from anxiety, shock, and various traumas as a result of the fire. The continuing fire of rockets and mortar shells has a severe, cumulative psychological effect on the population, causing severe damage to its social structure and severe damage to its feeling of safety. The fire also disrupts the efforts to promote a peace agreement between Israel and the Palestinians (the Annapolis process) by creating a lasting

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<sup>1</sup> In 2008, 21 people were killed as a result of terrorist attacks originating in the Gaza Strip, out of 31 killed as a result of terrorist attacks during that year (Summary of 2008 by the Israel Security Agency).

reality of rocket fire and counter-measures by Israel, which reached their peak in Operation Cast Lead.

## Statistical data

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6. What follows is a summary of statistical data in various spreads about the rocket fire and mortar shelling in 2008 compared to previous years:

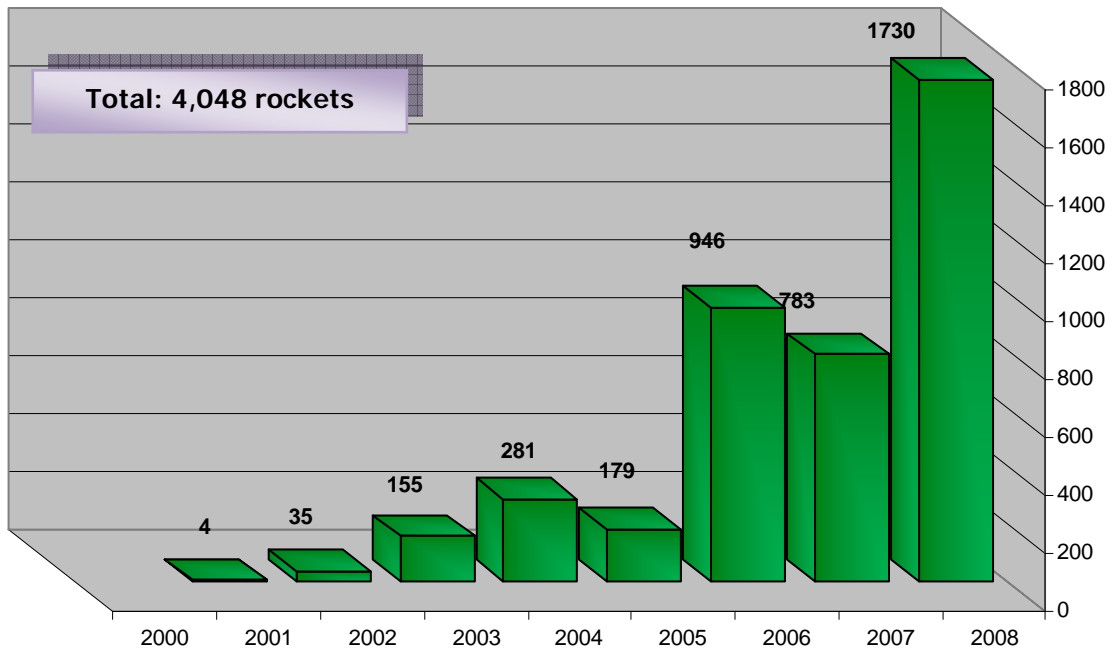
- a. Rocket fire chart in yearly distribution, 2000-2008
- b. Mortar shelling chart in 2000-2008
- c. Rocket fire chart in monthly distribution in 2008
- d. Mortar shelling in monthly distribution in 2008
- e. Rocket fire and mortar shelling during the lull in the fighting
- f. Rocket fire and mortar shelling during Operation Cast Lead (as at December 31)
- g. New Grad rockets and mortars which became operational in 2008:
  1. 122-mm Grad rockets for a range of 20.4 km
  2. 122-mm Grad rockets for ranges of approximately 40 km
  3. 120-mm mortars
- h. The number of Israeli residents in the main cities of south Israel (the Negev)

## Complementary studies

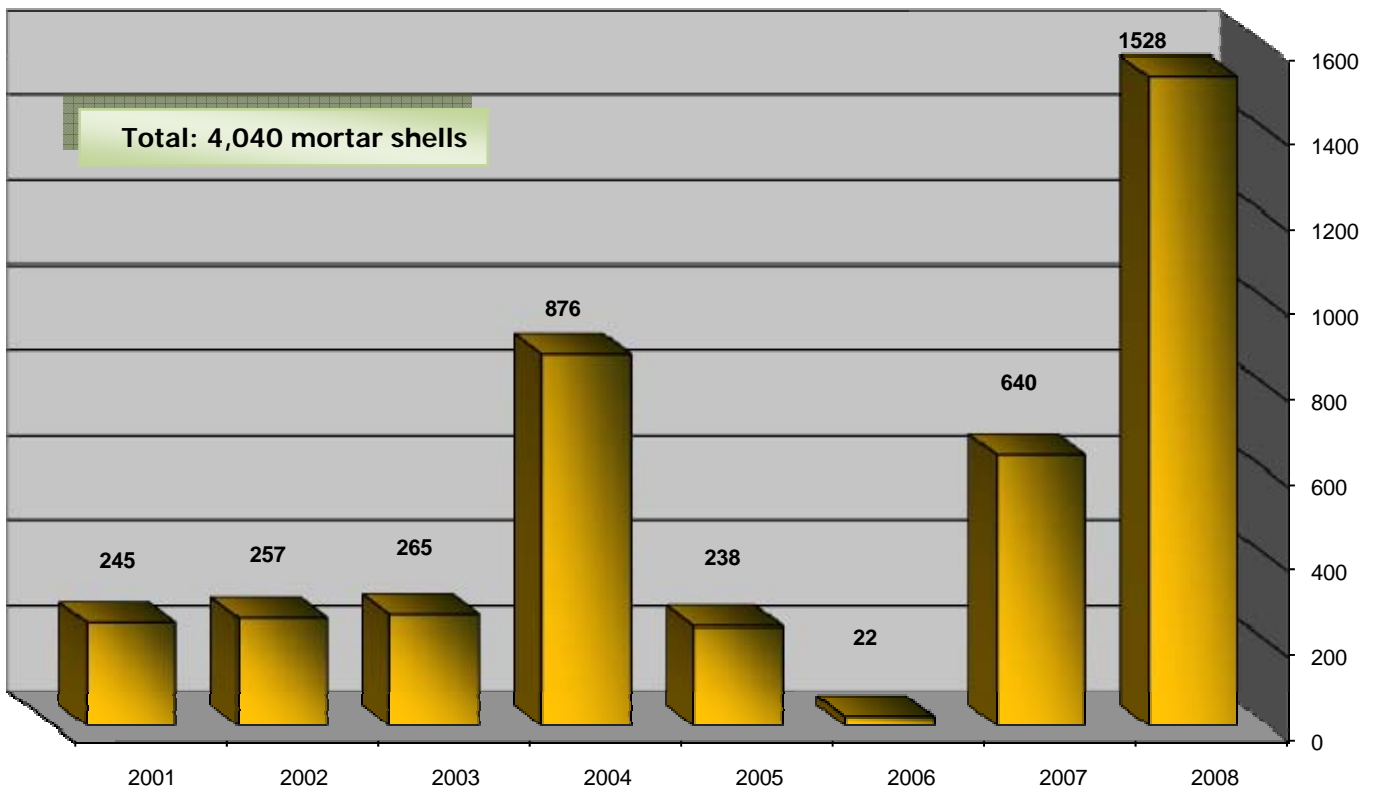
7. To complete the data and analysis in this document, one can draw upon four fundamental papers written by the Intelligence and Terrorism Information Center in 2008:

- a. Rocket threat from the Gaza Strip, 2000-2007 (December 2007)
- b. Hamas's military buildup in the Gaza Strip (Updated April 2008)
- c. Anti-Israeli Terrorism in 2007 and its Trends in 2008 (May 2008)
- d. The Six Months of the Lull Arrangement (December 2008)

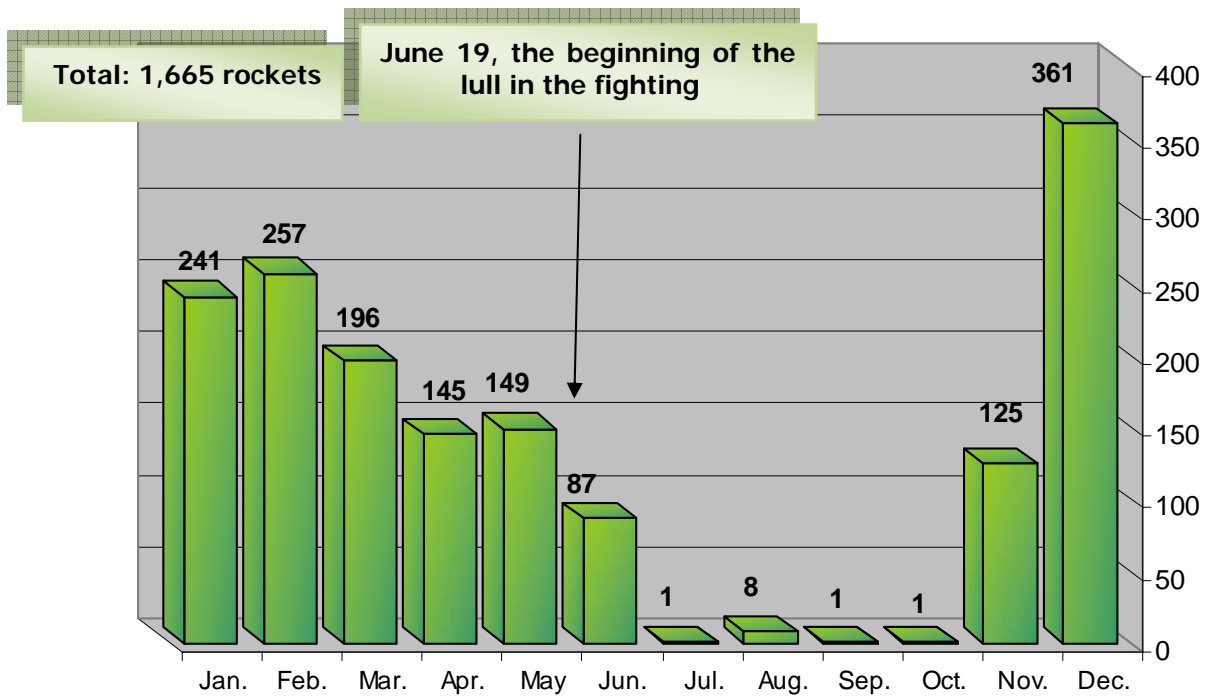
### Rocket fire in yearly distribution, 2000-2008



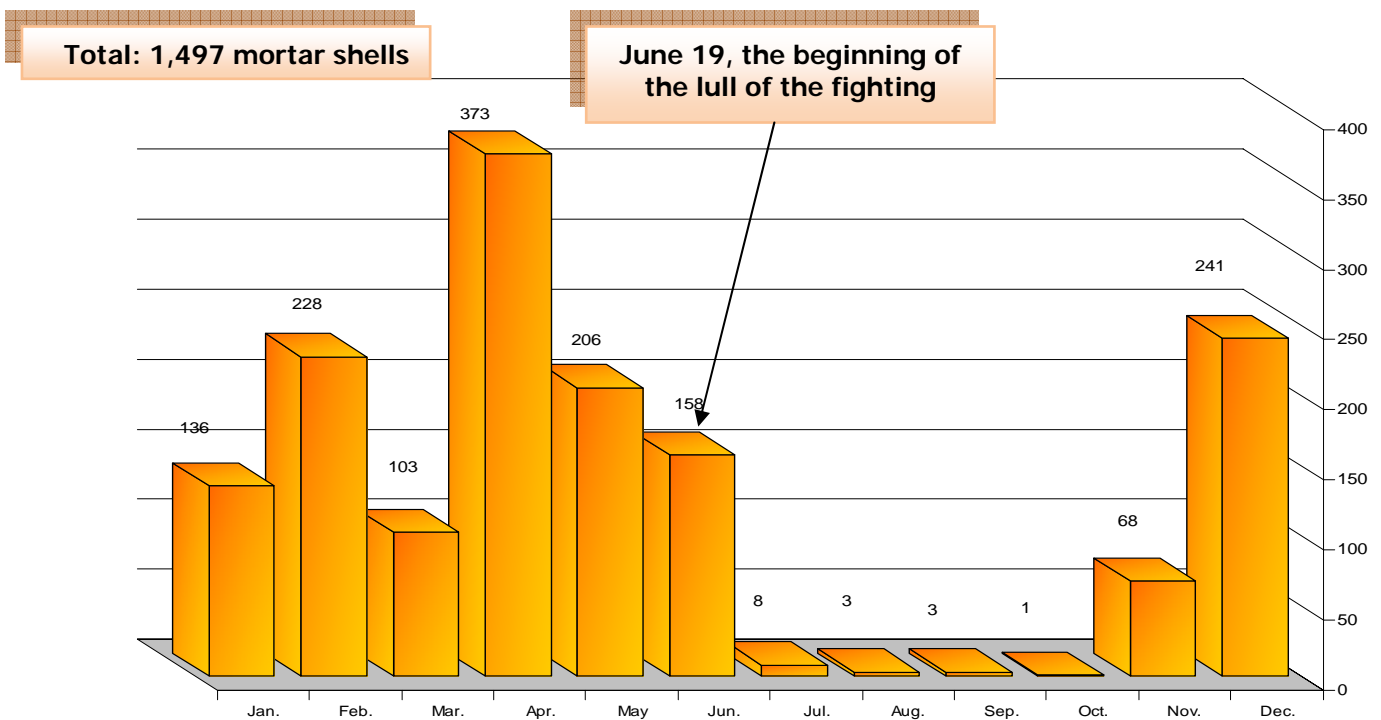
### Mortar shelling in 2000-2008



## Rocket fire in monthly distribution, 2008

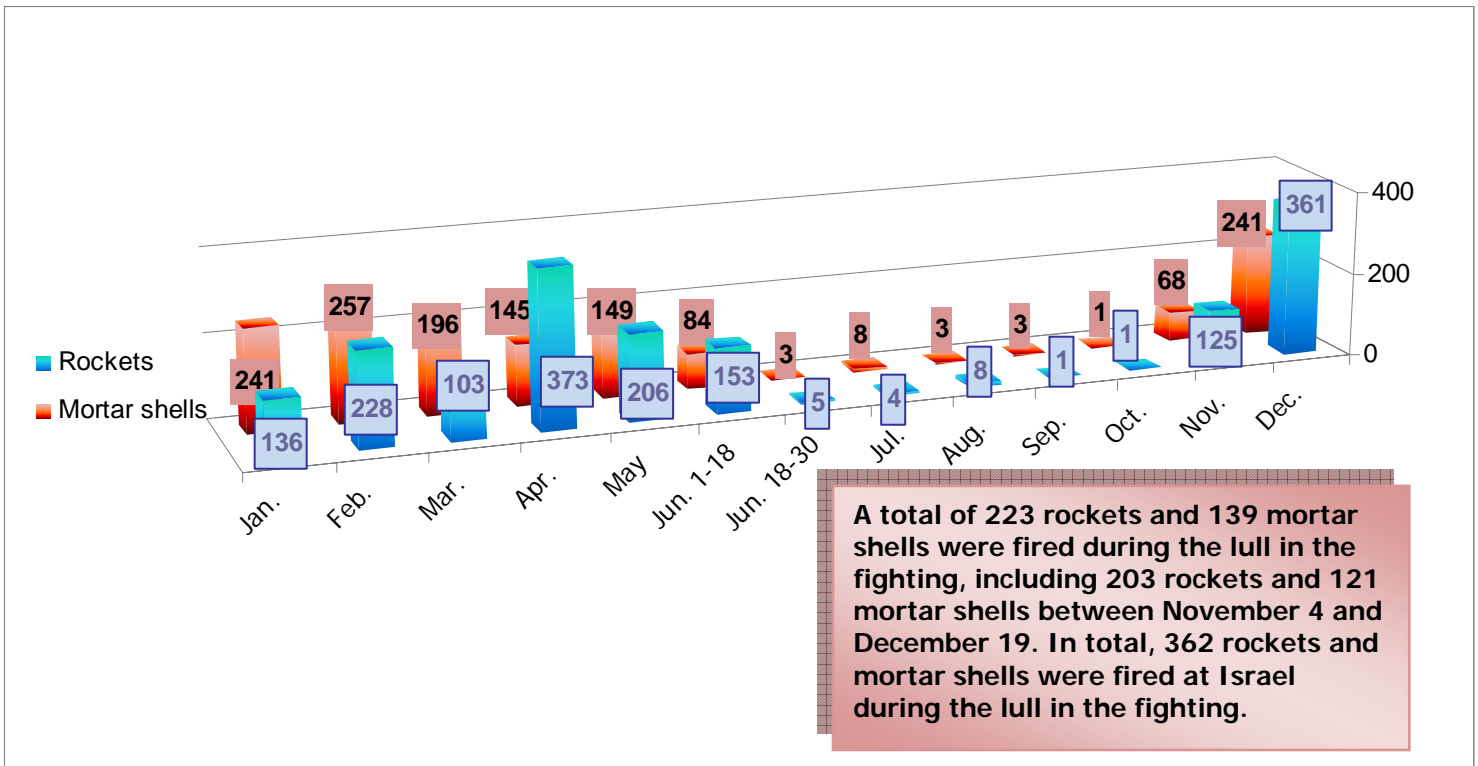


## Mortar shelling in monthly distribution, 2008

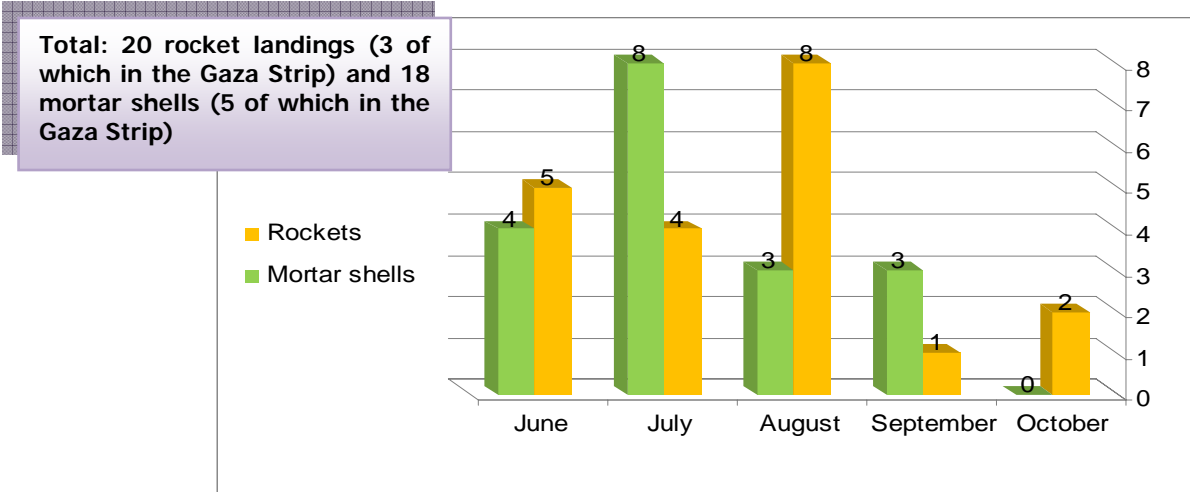


## The lull in the fighting

### Rocket fire and mortar shelling during the lull in the fighting compared to previous months

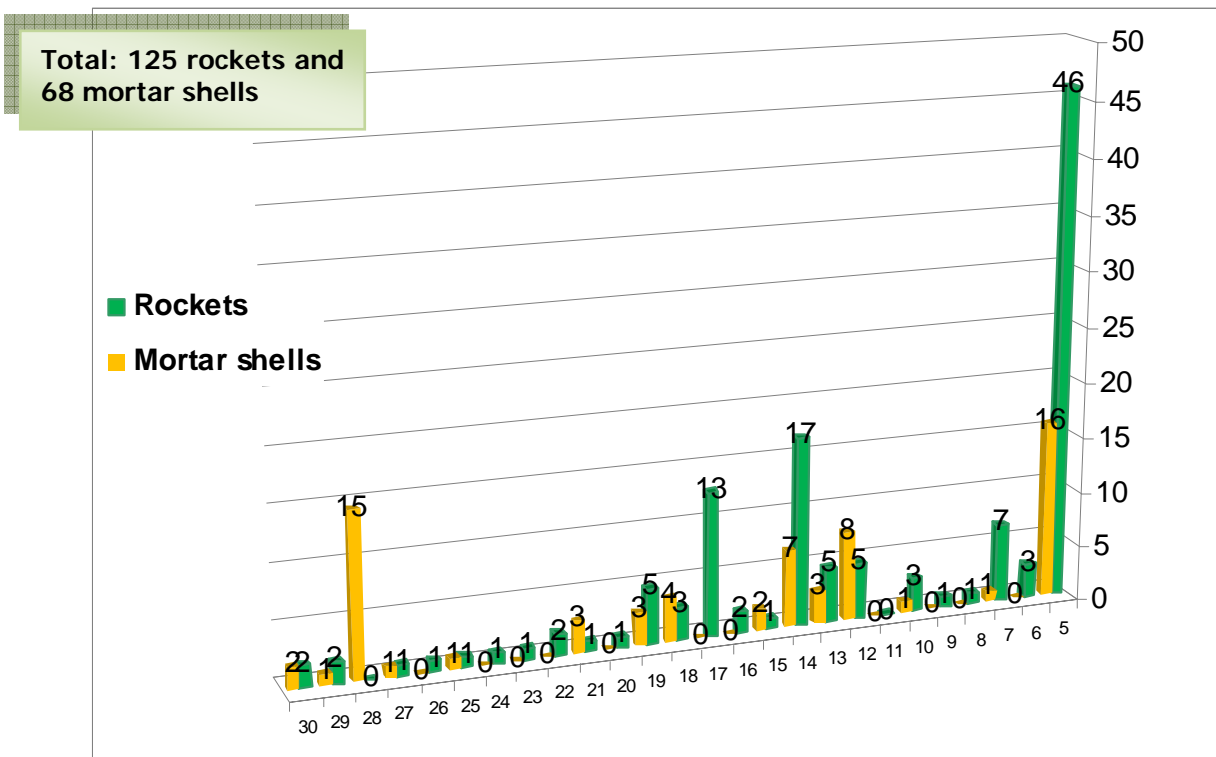


### Rocket fire and mortar shelling during the first period of the lull in the fighting (until November 4)



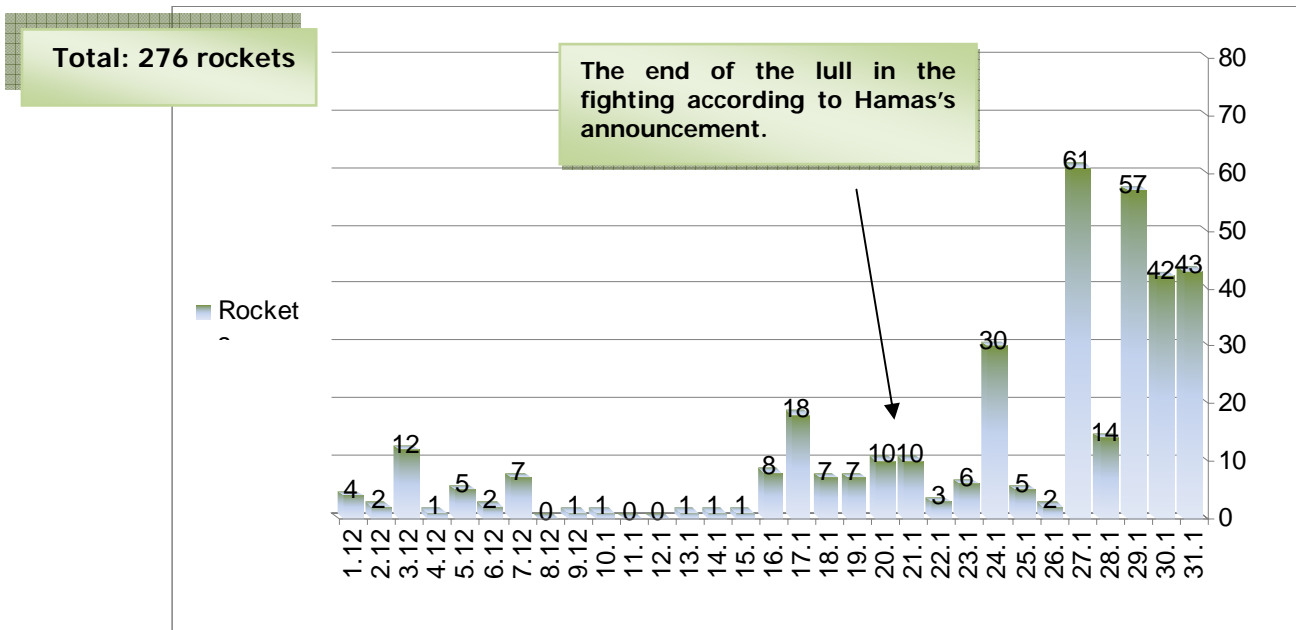
Note: the chart includes the fire incidents as of June 19, the beginning of the lull in the fighting. The chart includes 3 rockets and 5 mortar shells which landed in the Gaza Strip.

### The deterioration of the lull in the fighting: rocket fire and mortar shelling in daily distribution in the month of November 2008

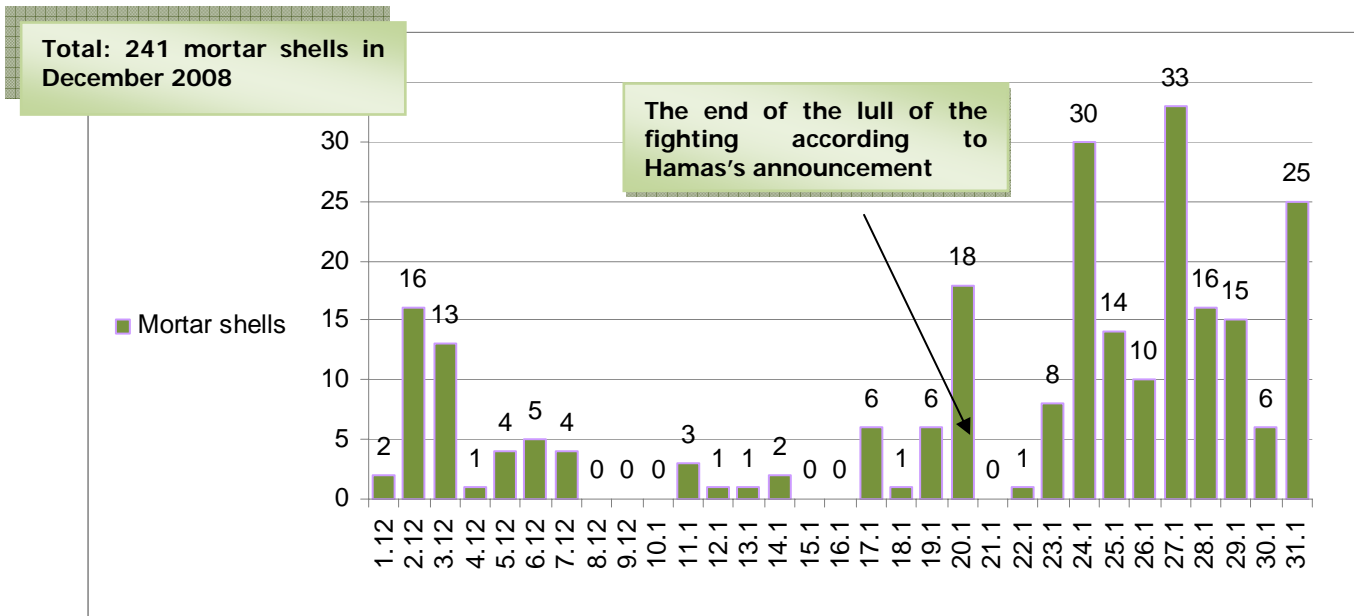




The deterioration of the lull in the fighting: rocket fire in daily distribution in the month of December 2008

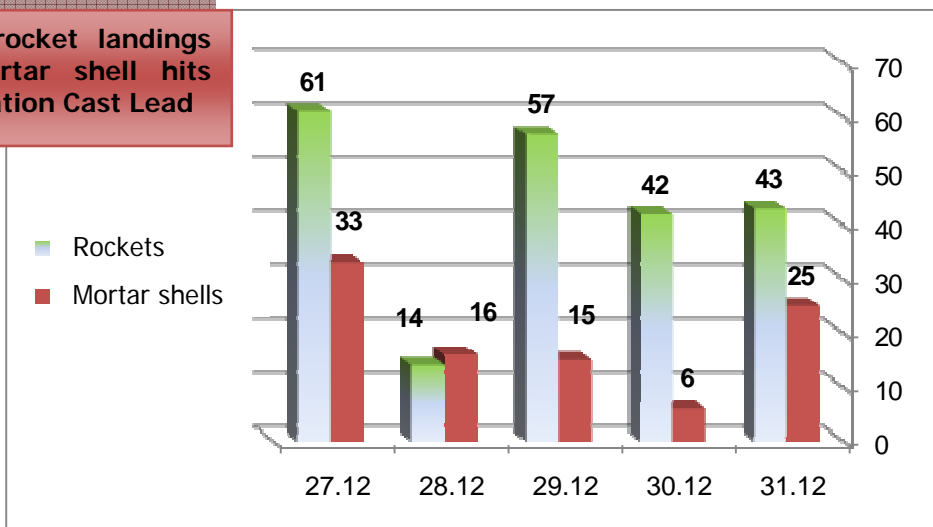


The deterioration of the lull in the fighting: mortar shelling in daily distribution in the month of December 2008



## Rocket fire and mortar shelling during Operation Cast Lead

Total: 217 rocket landings and 95 mortar shell hits during Operation Cast Lead



## New standard rockets and mortars used in 2008

### Improved 122-mm Grad

Improved Grad rocket

Diameter—122 mm

Maximum range—20.4 km

Warhead weight—66 kg

Manufacturer—China, Iran, Russia, Bulgaria



### Improved 122-mm Grad rocket for ranges of approximately 40 km

Diameter—122 mm

Maximum range—40 km

Warhead weight—18-22 kg

Number of ball bearings—3,000-5,700

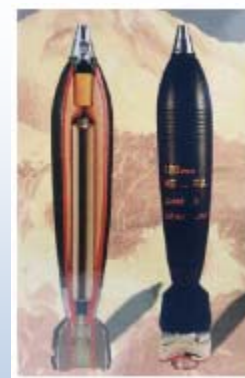
Manufacturer—China



The remains of the rocket identified by the Israeli police, which landed near Gan Yavne, northeast of Ashdod (December 28)

### 120-mm mortar shell

**120-mm standard Iranian-made mortar shell** (a replica of an Israel Military Industries mortar shell from the 1970s supplied to Iran). **The bomb is equipped with an auxiliary rocket engine which increases its range from six to ten kilometers.**



**Note:** on February 24, 2008, such mortar shell was fired and landed near Kibbutz Saad. On June 5, a 120-mm mortar shell hit the Nirlat paint factory in Kibbutz Nir Oz, killing Amnon Rosenberg, 51, from Kibbutz Nirim, and injuring four other people, two of them moderately. In addition, 120-mm mortar shells were fired in some other incidents.

## Large Israeli cities exposed to rocket fire

City	Number of residents <sup>2</sup>
Ashdod	208,900
Beersheba	186,800
Ashkelon	110,000
Kiryat Gat	47,900
Rahat	43,300
Yavne	32,300
Netivot	26,100
Ofakim	24,700
Kiryat Malachi	19,700
Sderot	19,400

<sup>2</sup> According to the Central Bureau of Statistics, as of September 2008.