

# Amnesty International

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## Fuelling conflict: Foreign arms supplies to Israel/Gaza

Both Israel and Hamas used weapons supplied from abroad to carry out attacks on civilians. This briefing contains fresh evidence on the munitions used during the three-week conflict in Gaza and southern Israel and includes information on the supplies of arms to all parties to the conflict. It explains why Amnesty International is calling for a cessation of arms supplies to the parties to the conflict and calling on the United Nations to impose a comprehensive arms embargo.

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## Introduction

With fragile ceasefires now in place in Gaza and southern Israel, the full extent of the devastation caused in recent weeks is becoming increasingly clear. Amnesty International researchers visiting Gaza and southern Israel during and after the fighting found evidence of war crimes and other serious violations of international law by all parties to the conflict.

In the three weeks following the start of the Israeli military offensive on 27 December, Israeli forces killed more than 1,300 Palestinians in Gaza, including more than 300 children and many other civilians, and injured over 5,000 other Palestinians, again including many civilians. Israeli forces also destroyed thousands of homes and other property and caused significant damage to the infrastructure of Gaza, causing a worsening of the humanitarian crisis arising from the 18-month blockade maintained by Israel. Some of the Israeli bombardments and other attacks were directed at civilians or civilian buildings in the Gaza Strip; others were disproportionate or indiscriminate. Amnesty International has found indisputable evidence that Israeli forces used white phosphorus, which has a highly incendiary effect, in densely populated residential areas in Gaza, putting the Palestinian civilian population at high risk. Israeli forces' use of artillery and other non-precision weapons in densely-populated residential areas increased the risk, and the harm done, to the civilian population.

During the same period, Hamas and other Palestinian armed groups continued to fire indiscriminate rockets into residential areas of southern Israel, killing three civilians.

Direct attacks on civilians and civilian objects, disproportionate attacks and indiscriminate attacks are war crimes.

Amnesty International is calling on the United Nations, and the Security Council (SC) in particular, to establish an immediate independent investigation into allegations of war crimes and other serious violations of international law committed by all sides to the conflict and for those found responsible to be brought to justice in order to ensure accountability. The organization notes and welcomes the investigation established by the UN Secretary-General into attacks on UN installations in Gaza but considers this insufficient, and that an independent international investigation must be held into all allegations of war crimes and other violations of international law by all the parties to the conflict in Gaza and southern Israel. As well, Amnesty International is calling on the UN, notably the Security Council, to impose an immediate, comprehensive arms embargo on all parties to the conflict, and on all states to take action individually to impose national embargoes on any arms or weapons transfers to the parties to the conflict until there is no longer a substantial risk that such arms or weapons could be used to commit serious violations of international law.

Amnesty International is deeply concerned that weaponry, munitions and other military equipment supplied to Israel have been used by Israeli armed forces to carry out direct attacks on civilians and civilian objects in Gaza, and attacks which were disproportionate or

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indiscriminate. Amnesty International is also concerned that Hamas and other Palestinian armed groups have been firing indiscriminate rockets, supplied or constructed of materials supplied from outside Gaza, at civilian population centres in southern Israel.

## **Misuse of conventional arms by Israeli forces**

Hundreds of civilians taking no part in the hostilities, including over 300 children and more than 100 civilian police cadets who were not directly participating in the hostilities, were killed in attacks by Israeli forces against the Gaza Strip. Civilian homes and other buildings, including medical facilities, schools and a university, were also damaged or destroyed by Israeli air strikes and artillery and other attacks – artillery is an area weapon, not one that can be used with pinpoint accuracy, and so should never be used in densely-populated civilian areas.

Amnesty International researchers, including a weapons expert, found various fragments and components from munitions used by the Israeli army during the three-week military offensive launched on 27 December. They include fragments of artillery shells (white phosphorus, high explosive and illuminating), tank shells, mortar fins, highly incendiary white phosphorus-impregnated felt wedges, anti-tank mines and a range of live and spent bullets casings of various calibres - including 7.62 mm, 5.56 mm and the larger .50 calibre.

The information below describes the types of munitions and military equipment used during the conflict that Amnesty International has documented, including in circumstances which violate international humanitarian law and, in some cases, may amount to war crimes. Amnesty International called on the Israeli authorities to disclose the weapons used by their forces in Gaza so that medical staff would be adequately informed to treat victims of the conflict.

### **Air delivered munitions**

Amnesty International found remnants of air-delivered munitions – ranging from fragments of 20mm cannon and Hellfire and other missiles fired from helicopters and unmanned drones, to large fragments of large laser-guided and other bombs dropped from F-16 warplanes, as well as pieces of rocket motors, circuit boards and other electrical components of the missiles. Fragments from these bombardments are all over Gaza - on the streets, in school playgrounds, in hospitals and in people's homes. Fragments from one 500lb bomb contained the inscription 'For use on MK-82 fin guided bomb' and the markings 96214 ASSY 837760-4. The cage code 96214 indicates that this fin was produced by the US company Raytheon. A US government solicitation notice dated 22 October 2001 for 'bomb spare parts' included AFG Fin, Raytheon part number 837760-4.<sup>1</sup>

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<sup>1</sup> See solicitation , number N00164-02-Q-0017 at [http://www.fbodaily.com/cbd/archive//2001/10\(October\)/24-Oct-2001/99sol003.htm](http://www.fbodaily.com/cbd/archive//2001/10(October)/24-Oct-2001/99sol003.htm) Last accessed 10 February 2009.



**Fragments from a MK-82 bomb ©Amnesty International**

By the rubble of the American School in Gaza, Amnesty International delegates spoke to the father of the school guard, Mahmoud Mohammed Selmi Abu Qleiq, who was killed when Israeli F16 aircraft bombed the school campus. Hundreds of homes were completely destroyed as a result of bombardments by F-16 aircraft.

At the northern end of the al-Shati (Beach) refugee camp in Gaza City, Amnesty International visited the Abu 'Eisha family. Five members of the family - three children and their parents - were killed on the night of 5 January, when an Israeli aircraft dropped a bomb which struck and partially destroyed the house. The following day, 6 January, another Israeli F-16 bombardment killed 23 members of the al-Daya family, most of them children and women, as they slept in their home in the Zaytoun district of Gaza City. When Amnesty International delegates visited the ruins of the house two weeks later, several of the dead were still trapped under the huge pile of rubble.

## Anti-Tank Mines



An Israeli anti-tank mine with Hebrew markings ©Amnesty International

On Wednesday 28 January, at the home of the Mardi family in Atatra, where 20 members of the family lived, Amnesty International delegates found one of the anti-tank mines that was used by Israeli soldiers to blow up the family's house on 4 January. The mine was damaged but had failed to explode. The family said that they had found another such mine, wholly unexploded, which had been removed by the local police. The mine, like others - exploded and unexploded - found by AI delegates in the rubble of other destroyed houses, bore Hebrew writing and serial numbers. Though designed for use against tanks, these mines are easily adapted to other purposes through the addition of an explosive charge and fuse. Israeli soldiers have previously confirmed to Amnesty International that these anti-tank mines have long been used to destroy Palestinian houses, most often in the West Bank but also in Gaza.

## Artillery and Mortars

During the three-week military campaign Israeli forces made extensive use of artillery including 155mm white phosphorus shells (see below *White Phosphorus*) in residential areas, causing death and injuries to civilians. Homes, schools, medical facilities and UN buildings –

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all civilian objects - took direct hits from Israeli artillery shelling. Artillery shells are for use on conventional battlefields and are not capable of pinpoint targeting. Yet in Gaza they were fired into densely-populated civilian residential areas.

In an UNRWA primary school in Beit Lahia, where 1,600 people were sheltering from the fighting, an artillery carrier shell hit a classroom on the second floor where 35 people were sleeping at 6am on 17 January. Two brothers, aged five and seven, were killed and 14 others were injured, including the boys' mother, whose leg had to be amputated. Two days after the incident Amnesty International delegates found remains of 155 mm white phosphorus artillery shells and still smouldering remains of white phosphorus at the school.

Eleven days earlier, on 6 January, mortar shells fired by Israeli forces had landed in the street outside another UNRWA school in Jabalia, killing at least 41 people, among them 10 members of one family.

### **White Phosphorus**

There is evidence that white phosphorus was used by Israeli forces across Gaza. Amnesty International came across many white phosphorus 155mm artillery carrier shells throughout Gaza with markings M825 A1 – a US-made munition. These are the same markings of the 155mm white phosphorus shells photographed in Israeli Defense Forces' (IDF) stockpiles (see section *Arms supplies to Israel* below).

Several white phosphorus artillery shells hit the UNRWA field operations headquarters in Gaza City on 15 January, causing a large fire which destroyed tens of tons of humanitarian aid, including, medicines, food and other non-food items.<sup>2</sup> Amnesty International delegates who visited the site found the marking PB-91K018-035 on the fragments of one of the artillery shells which is the lot number and indicates that they were assembled by Pine Bluff Arsenal (PB) in 1991 (91) in October (K).

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<sup>2</sup> The Humanitarian Monitor, UN OCHA, January 2009:  
[http://www.ochaopt.org/documents/ocha\\_opt\\_humanitarian\\_monitor\\_2009\\_01\\_15\\_english.pdf](http://www.ochaopt.org/documents/ocha_opt_humanitarian_monitor_2009_01_15_english.pdf)  
- 'UNRWA: IDF Shelled Warehouse with White Phosphorus', IsraelNN.com, 15 January 2009,  
<http://www.israelnationalnews.com/News/News.aspx/129445>;  
- 'UN headquarters in Gaza hit by Israeli 'white phosphorus' shells', Timesonline, 15 January,  
[http://www.timesonline.co.uk/tol/news/world/middle\\_east/article5521925.ece](http://www.timesonline.co.uk/tol/news/world/middle_east/article5521925.ece)



**A white phosphorus carrier shell ©Amnesty International**

Amnesty International found that the Israeli army used white phosphorus, a weapon with a highly incendiary effect, in densely-populated civilian residential areas in and around Gaza City, and in the north and south of the Gaza Strip. The organization's delegates found white phosphorus still burning in residential areas throughout Gaza days after the ceasefire came into effect on 18 January - that is, up to three weeks after the white phosphorus artillery shells had been fired by Israeli forces. Amnesty International considers that the repeated use of white phosphorus in this way in densely-populated civilian areas constitutes a form of indiscriminate attack, and amounts to a war crime.<sup>3</sup>

White phosphorus is a weapon intended to provide a smokescreen for troop movements on the battlefield. When each 155mm artillery shell bursts, it releases 116 wedges impregnated with white phosphorus which ignite on contact with oxygen and can scatter, depending on the height at which it is burst (and wind conditions), over an area at least the size of a football pitch. In addition to the indiscriminate effect of air-bursting such a weapon, firing such shells as artillery exacerbates the likelihood that civilians will be affected. When white phosphorus

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<sup>3</sup> See the news release, 'Israel used White Phosphorus in Gaza civilian areas', Amnesty International, 19 January. Such use of white phosphorus is prohibited by Additional Protocol I to the Geneva Conventions, which prohibits indiscriminate attacks, and by the Third Protocol to the Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons which may be Deemed to be Excessively Injurious or to Have Indiscriminate Effects, which relates to incendiary weapons.

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lands on skin it burns deeply through muscle and into the bone, continuing to burn until deprived of oxygen. It can contaminate other parts of the patient's body or even those treating the injuries.

A 16-year-old girl, Samia Salman Al-Manay'a, was asleep in her home in the Jabalia refugee camp, north of Gaza City, when a phosphorus shell landed on the first floor of the house at 8pm on 10 January. Ten days later, from her hospital bed, she told Amnesty International that she was still experiencing intense pain due to the burns to her face and legs. "The pain is piercing. It's as though a fire is burning in my body. It's too much for me to bear. In spite of all the medicine they are giving me the pain is still so strong."<sup>4</sup>

Amnesty International has seen documents written during the Israeli military offensive on Gaza by the office of the Israeli army Chief Medical Officer and Medical Field Operations headquarters.<sup>5</sup> A document signed by Colonel Dr Gil Hirschorn, head of trauma in the office of the army's Chief Medical Officer, states: "When the phosphorus comes in contact with living tissue it causes its damage by 'eating' away at it. Characteristics of a phosphorus wound are: chemical burns accompanied by extreme pain, damage to tissue ... the phosphorus may seep into the body and damage internal organs. In the long run, kidney failure and the spread of infection are characteristic ... In conclusion: a wound by an ordnance containing explosive phosphorus is inherently dangerous and has the potential to cause serious damage to tissue."

Another document entitled "Exposure to White Phosphorus," prepared by Medical Field Operations HQ and sent from the Health Ministry, notes that "most of the data on phosphorus wounds stems from animal testing and accidents. Exposure to white phosphorus is highly poisonous, according to many lab experiments. Burns covering a small area of the body, 12-15 percent in lab animals and less than 10 percent in humans, may be lethal as a result of its effects, mostly on the liver, heart and kidneys."

In addition to the danger posed by the incendiary effect of white phosphorus, the artillery shells themselves continued to pose lethal threat after they dispersed the white phosphorus, as they continued on their trajectory and in many cases smashed into home full of civilians.

In Khuzaa, east of Khan Younis, in the south of Gaza, Amnesty International delegates found white phosphorus artillery carrier shells, both whole and in fragments, in several homes in a densely-populated residential area. In one home, they found the fragments of another 155mm artillery carrier shell which had killed 47-year-old Hanan al-Najjar, a mother of four. She and her family had fled their home and were staying with relatives in a residential area well inside the town. On the evening of 10 January an artillery shell penetrated the roof of the house and travelled through two rooms, breaking up in the hall, where a large fragment hit Hanan in the

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<sup>4</sup> 'Israel must disclose weapons used in Gaza', Amnesty International, 26 January 2009.

<sup>5</sup> "Gaza burn victims exhibit possible signs of white phosphorous wounds", Haaretz, 5 February 2009: <http://www.haaretz.com/hasen/spages/1061720.html>

chest, almost severing the upper part of her body. She was killed instantly. In the patio of the house, Amnesty International delegates found an artillery shell (illuminating round) and in a nearby house they found another whole artillery carrier shell which had crashed through the wall and landed on the young couple's bed, where a baby had been sleeping only minutes earlier.

### **Illuminating artillery shells**

Amnesty International delegates encountered 155mm M485 A2 illuminating shells used by the IDF which had landed in built up residential areas in Gaza. These eject a phosphorus canister, which floats down under a parachute. At least three of these carrier shells were found which had landed in people's homes. These shells are yellow and one had the following markings: TZ 1-81 155-M 485 A2. TZ is a known marking on Israeli ammunition.



**An artillery carrier shell which ejects a canister for illumination ©Amnesty International**

At the home of journalist Samir Khalifa, in the Zaitoun district of Gaza City, Amnesty International delegates found a 155mm artillery shell which had smashed into his fourth floor apartment at 6am on 10 January, striking the room next to where he and his wife and children

usually slept.<sup>6</sup> The family escaped harm as they were sleeping downstairs with the grandparents.

### **Flechettes**

Flechettes are not specifically prohibited under international humanitarian law. However, their use in densely-populated civilian areas in Gaza contributed to unlawful killings of and injuries to civilians. Flechettes are 4cm long metal darts that are sharply pointed at the front, with four fins at the rear. Between 5,000 and 8,000 of these darts are packed into 120mm shells which are generally fired from tanks. The shells explode in the air and scatter the flechettes in a conical pattern over an area about 300m long and 100m wide.<sup>7</sup> Flechette rounds are designed to be used against massed infantry attacks or squads of troops in the open and obviously pose a very high risk to civilians when fired in densely-populated civilian residential areas, as deployed by Israeli forces in the Gaza Strip.

Amnesty International investigated several deaths and injuries of civilians in Gaza caused by flechettes in January.<sup>8</sup> In one case, on 4 January 2009, an ambulance arrived about 15 minutes after a missile strike in Beit Lahiya that apparently targeted five unarmed young men. The ambulance was hit a few minutes later by a tank shell filled with flechettes. Two paramedics were seriously wounded in the incident and one of them, Arafa Hani Abd-al-Dayem, later died.

The following morning, Israeli forces fired several flechette shells into the main road near the Abd al-Dayem family home in 'Izbet Beit Hanoun, to the south-west of the town of Beit Hanoun. Two people, a child and a woman, were killed and several others were injured. Sixteen-year-old Islam Jaber Abd-al-Dayem was struck in the neck by a flechette. He was taken to the hospital's intensive care unit but died three days later. Mizar, his brother, was injured in the same attack and still has a flechette lodged in his back. Nearby, 21-year-old Wafa' Abu Jarad, who was pregnant, her two-year-old son, her husband, and her father and brother-in-law were all injured by flechettes in the courtyard of their home. Wafa' Abu Jarad died of her injuries two days later.

Amnesty International has previously documented Israeli forces' use of flechette rounds in Gaza resulting in the killing of children.<sup>9</sup> The manner in which shells containing flechettes were used by Israeli forces in Gaza – fired in densely populated civilian areas - violates the international law prohibition on indiscriminate attack. Prior to their use during the recent military offensive, the last known incident when flechettes were used in Gaza was on 16 April

<sup>6</sup> See blog, '[Journalists under fire](#)', Amnesty International, 29 January 2009.

<sup>7</sup> 'How Flechettes Work', The Guardian: <http://www.guardian.co.uk/graphic/0,,2274464,00.html>

<sup>8</sup> See New Release, 'Israeli army used flechettes against Gaza civilians', Amnesty International, 27 January 2009 and the blog, 'A bloodstained wall of flechettes', Amnesty International, 26 January 2009, <http://livewire.amnesty.org/2009/01/27/a-bloodstained-wall-full-of-flechettes/#more-866>

<sup>9</sup> See 'Israel and the Occupied Territories and the Palestinian Authority: Killing the future: Children in the line of fire', Amnesty International, (Index: MDE 02/005/2002).

2008, when Israeli soldiers fired a flechette tank shell at Reuters journalist Fadel Shana, while he was filming the tank, killing him and three other unarmed civilians, including two children.<sup>10</sup>

In 2001, Jane's defense publication quoted an Israeli military source, who stated: "The Israeli military obtained these weapons from the USA after the 1973 war and we have thousands of old shells in warehouses...The weapon is not regarded as reliable or effective and gunners have a difficult time in aiming this properly."<sup>11</sup>

### **Tank Ammunition**

The markings on the base of one tank round found by Amnesty International delegates in Gaza at the destroyed house of the Abu 'Ida family indicated that it was a 120mm M830 High Explosive Multi Purpose Cartridge made in the USA.



**Base of tank cartridge found by Abu Abdullah Abu 'Ida outside his house ©Amnesty International**

<sup>10</sup> <http://www.amnesty.org/en/news-and-updates/news/armys-so-called-inquiry-cameramans-killing-gaza-scandal-20080815>

<sup>11</sup> [http://www.janes.com/defence/land\\_forces/news/jdw/jdw010522\\_2\\_n.shtml](http://www.janes.com/defence/land_forces/news/jdw/jdw010522_2_n.shtml)

Amnesty International delegates found fragments from 120mm tank rounds all over Gaza, including in homes where these munitions had killed children and other civilians. Tank rounds are precision munitions. The killings of so many civilians, many in their homes, indicates that these munitions were – at best – used in a reckless or indiscriminate manner. In Jabaliya, north Gaza, at the home of Dr Izz al-Din Abu al-‘Eish, a gynaecologist who works in an Israeli hospital, Amnesty International delegates found fragments of the two 120mm tank shells which were fired by Israeli soldiers into the bedroom of Dr Abu al-‘Eish’s daughters on the afternoon of 16 January. Three of the doctor’s daughters and his niece were killed on the spot and another daughter and niece were seriously injured.

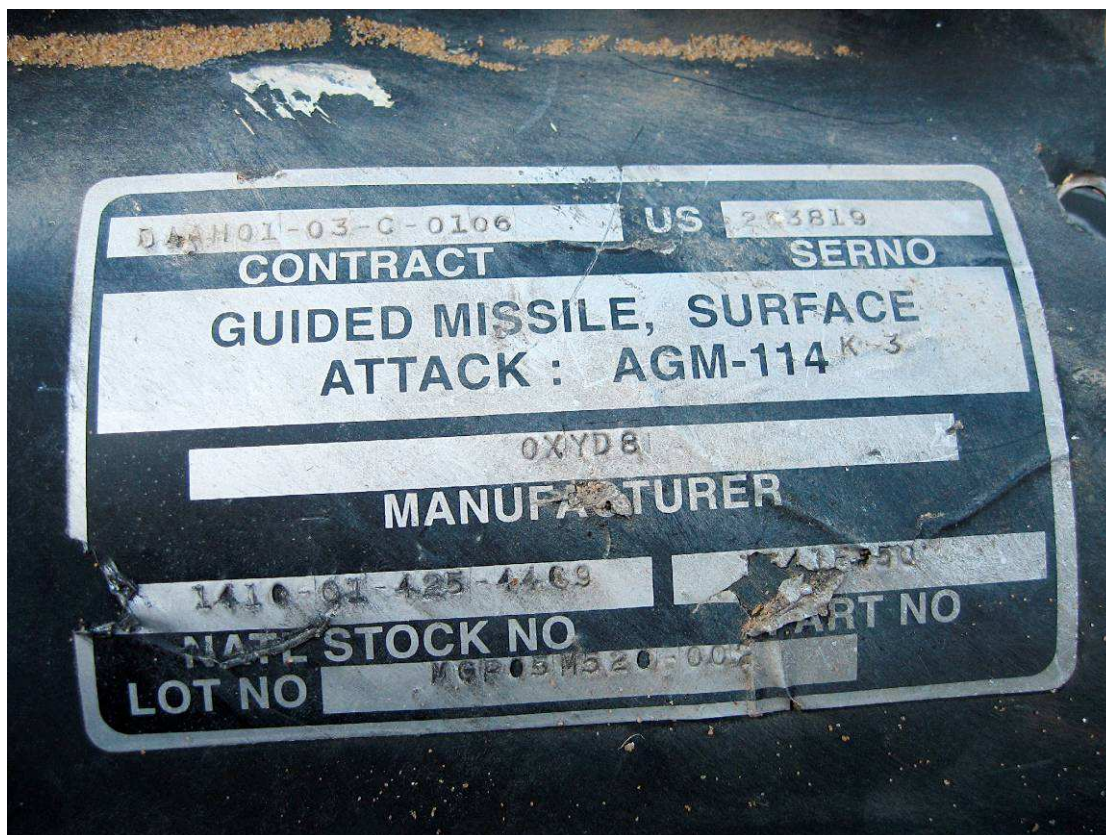
### **Missiles from UAVs – or “drones”, helicopters and aircraft**

Three paramedics in their mid 20s – Anas Fadhel Na’im, Yaser Kamal Shbeir, and Raf’at Abd al-‘Al – were killed in the early afternoon of 4 January in Gaza City as they walked through a small field on their way to rescue two wounded men in a nearby orchard. A 12-year-old boy, Omar Ahmad al-Barade’e, who was standing near his home indicating to the paramedic the place where the wounded were, was also killed in the same strike.

Amnesty International went to the scene of the incident with the two ambulance drivers who had accompanied the paramedics and who had witnessed the attack and met the child’s distraught mother and found the remains of the missile that killed the three paramedics and the child. The label read “guided missile, surface attack” and the USA is mentioned as the weapon’s country of origin.<sup>12</sup> This AGM 114 Hellfire missile, usually launched from Apache helicopters, was produced by Hellfire Systems of Orlando, a Lockheed Martin/Boeing joint venture, under a contract with the US Army’s Aviation and Missile Command at Redstone Arsenal, Alabama which uses the number DAAH01-03-C-0106 on its contracts.

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<sup>12</sup> See blog, ‘Attacks on Ambulance Workers’, Amnesty International, 27 January 2009.



**Label on the remains of a missile that killed three paramedics and a child ©Amnesty International**

Amnesty International found evidence of missile components, including Hellfire AGM 114, from the air attack on the police cadet parade that took place on 27 December 2008. One of the electrical components had “made in France” written on it.

### **Cube-shaped shrapnel**

Amnesty International delegates in Gaza also found evidence of the use of a new type of missile, seemingly launched from unmanned drones, which explodes large numbers of tiny sharp-edged metal cubes, each between 2 and 4 mm square in size. This purpose-made shrapnel can penetrate even thick metal doors and many were seen by Amnesty International’s delegates embedded deep in concrete walls. They appear designed to cause maximum injury and, in some respects, seem to be a more sophisticated version of the ball-bearings or nails and bolts which armed groups often pack into crude rockets and suicide bombs. The signature of these new missiles, in addition to the deadly tiny metal cubes, is a small and deep hole in the ground (about 10 cm or less in diameter and up to several metres in

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depth) and a small quantity of shrapnel made of very thin metal, seemingly from the missile's casing.

An X-ray of a young man who had been injured in one of these missile attacks, which killed a dozen youths and injured several others, showed the tiny metal pellets still embedded in his thigh.

A 13-year-old girl who was asleep in her bed; three primary school-age boys who were carrying sugar canes; two young women on their way to a shelter in search of safety; a 13-year-old boy on his bicycle; eight secondary school students who were waiting for the school bus to take them home; an entire family sitting in the courtyard of their home, and many others were all killed in attacks with these missiles.

### **Dense Inert Metal Explosives (DIME)**

There have been reports of the use by Israeli forces of DIME munitions in Gaza. Amnesty International researchers in Gaza were not able to confirm the use of such weapons but they interviewed doctors who described treating patients with injuries that could be consistent with the use of DIME weapons.<sup>13</sup>

According to the military publication, Jane's Intelligence Defence Review, DIME munitions contain high explosives mixed with a powdered, high-density metal such as tungsten, a design which reportedly "improves the blast impulse and lethality near the detonation point (near field) but reduces the more distant (far field) effects."<sup>14</sup>

DIME munitions are not specifically prohibited under international law. However, as a relatively new weapon, there are questions about their long-term health consequences, which require further study. It is suspected by some scientists that embedded weapons-grade tungsten alloy shrapnel rapidly causes cancer in rats and, while it is not known whether the rate of inducement would be equivalent in human beings, further studies are required into the effects, and risks posed to humans exposed to it, of weapons-grade tungsten shrapnel.

Some medical doctors in Gaza described attending victims who had unusual wounds that might have been caused by DIME weapons. Patterns of injury include limbs severed in a sharp amputation-like manner, with wounds looking as if cauterized and with little or no bleeding; very deep burns; and unexplained deterioration and deaths of patients with seemingly light injuries. Doctors are finding it difficult to treat these patients because of uncertainty about the nature of the munitions which caused the injuries.

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<sup>13</sup> See news release, 'Occupied Palestinian Territories: Israel must disclose weapons it used in Gaza attacks', Amnesty International, 22 January 2009.

<sup>14</sup> 'Hunt for high blast/low collateral damage weapons leads back to DIME/MBX', Jane's International Defence Review – 1 February 2008.

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Amnesty International is calling on the Israeli authorities to disclose the weapons and munitions used by their forces in Gaza, in order to facilitate treatment of the injured. The organization believes further studies are required before it can be determined whether the use of DIME munitions is lawful under international law. If it were determined that such weapons cause superfluous injury or unnecessary suffering, or if they violate the provisions of the Protocol on Non-Detectable Fragments (Protocol I to the Convention on Conventional Weapons) of 10 October 1980, then their use even against combatants, not only civilians, would be prohibited.

### **Unlawful use of indiscriminate rockets by Hamas and other Palestinian armed groups**

Palestinian armed groups affiliated to Hamas and to other Palestinian factions (including the al-Aqsa Martyrs' Brigades, the armed wing of Fatah, Palestinian President Mahmoud Abbas's party) have been launching rockets into towns and villages in south Israel. Although most of these rockets fall in empty areas, they have caused the deaths of several Israeli civilians, injured scores and caused damage to civilian property. In some cases these rockets have failed to reach Israel and have fallen inside Gaza, and some have killed and injured Palestinian civilians. In January 2009, as an increasing number of Palestinian rockets hit Ashkelon, Israeli officials reported that up to 40 percent of the city's 122,000 inhabitants had left their homes temporarily to stay in other parts of Israel. Sderot and villages in the area have also been similarly affected.

The rockets fired by Palestinian armed groups cannot accurately be directed at specific targets especially at longer distances. They include rockets described as Grads (Russian generic names which may indicate specific (Grad 122mm) calibres, or generically describe multiple-launched rockets) which have a range of about 35km, and home-made short range "Qassam" rockets (another generic name).<sup>15</sup> The military publication Jane's Terrorism and Security Monitor has described the "Qassam" rockets as: "inaccurate, short-range and rarely lethal".<sup>16</sup> According to Jane's the "Qassam" is a Palestinian improvised artillery weapon.<sup>17</sup> Amnesty International delegates visited Sderot and Ashkelon police stations, where they saw the rockets which have struck the towns and surrounding areas, including Grads, Qassams and Quds.<sup>18</sup> The latter two are very crude, rusty 60, 90, or 120mm pipes about 1.5 metres long with fins welded onto them. They can hold about five kilograms of explosives as well as shrapnel in the form of nails, bolts, or round metal sheets which rip into pieces on impact.

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<sup>15</sup> ' Hamas rockets keep raining down', Israeli forces have not entered population centres where many missiles are hidden, security expert says, by Patrick Martin, *Globe and Mail*, 9 January 2009.

<sup>16</sup> 'Rocket powered 'Hamastan' Jane's Terrorism and Security Monitor, 11 July 2007, 29 June 2007.

<sup>17</sup> *Ibid.*

<sup>18</sup> See blog, 'A day in southern Israel', Amnesty International, 28 January 2009.

They have a range of up to 20km, but cannot be aimed accurately. Grad rockets are more professionally built and according to Israeli Police spokesperson Micky Rosenfeld are smuggled into Gaza, not produced locally there.

According to the Israeli army, Hamas and other Palestinian armed groups launched 643 rocket attacks on Israel between 27 December 2008 and 11 January 2009. See the table for more information<sup>19</sup>:

<b>IDF Reports of Number of rocket attacks by Hamas 27 December 2008 – 11 January 2009 TOTAL: 643</b>																
Date	27/ 12	28/ 12	29/ 12	30/ 12	31/ 12	01/ 01	02/ 01	03/ 01	04/ 01	05/ 01	06/ 01	07/ 01	08/ 01	09/ 01	10/ 01	11/ 01
Attacks	78	35	80	51	64	64	31	35	34	33	33	18	18	24	22	23

Seven Israeli civilians were killed in 2008 by rockets fired by Palestinian armed groups from Gaza into communities in south Israel. Three of the victims were killed in separate attacks on three consecutive days, on 27, 28 and 29 December 2008.

Fifty-eight-year-old Beber Vaknin was killed when a rocket fired from Gaza hit his apartment building in Netivot on 27 December 2008. The following day, on 28 December a 27-year-old Bedouin, Hani al-Mahdi, was killed and 16 of his co-workers were injured when a Grad rocket missile launched by Hamas militias from Gaza exploded at a construction site in the town of Ashkelon, where the group worked. A third Israeli, Irit Sheetrit, aged 39, was killed the following day, on 29 December 2008 when another Grad rocket hit the centre of the town of Ashdod. As with the attack of the previous day, Hamas also claimed responsibility for the attack.

Amnesty International has repeatedly called on Hamas and all other Palestinian armed groups in Gaza to stop firing indiscriminate rockets against towns and villages in southern Israel, and continues to do so.<sup>20</sup>

## Arms supplies to Israel

Israel is a significant manufacturer of conventional arms, falling within the top 10 of arms exporters in the world, but also relies on imports of military equipment, parts and

<sup>19</sup> Israeli Defence Force, Operation Cast Lead, second newsletter.

<sup>20</sup> Israel/Occupied Palestinian Territories: End unlawful attack and meet Gaza's emergency needs, AI, 29 December 2008.

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technologies. For example, Merkava-4 tanks produced in Israel have used diesel engines assembled in the USA incorporating components produced in Germany.

Since 2001, the USA has been by far the major supplier of conventional arms to Israel based on the value of export deliveries of all conventional arms including government to government as well as private commercial sales. US foreign military sales to Israel have continued on a large scale (see Appendix 1). The US authorities reported to the UN that the USA commercially traded \$1,313 million in “arms and ammunition” to Israel in the years from 2004 to 2007, of which \$447 million was traded in 2007. Israel did not report this trade to the UN. These figures for US trade would normally exclude gifts of military equipment and associated or “dual use” equipment and technologies. In addition to this trade, the USA has provided large funding each year for Israel to procure arms despite US legislation that restricts such aid to consistently gross human rights violators.

Since 2002, during the Bush administration, Israel received over \$21 billion in US military and security assistance, including \$19 billion in direct military aid under the Pentagon's Foreign Military Financing (FMF) program. Put simply, Israel's military intervention in the Gaza Strip has been equipped to a large extent by US-supplied weapons, munitions and military equipment paid for with US taxpayers' money.

Section 502B of the Foreign Assistance Act stipulates that "no security assistance may be provided to any country the government of which engages in a consistent pattern of gross violations of internationally recognized human rights" which includes "acts of torture or cruel, inhuman, or degrading treatment or punishment, prolonged detention without charges and trial, causing the disappearance of persons by the abduction and clandestine detention of those persons, and other flagrant denial of the right to life, liberty, or the security of person." Section 4 of the Arms Export Control Act authorizes the supply of US military equipment and training only for lawful purposes of internal security, "legitimate self-defense," or participation in United Nations peacekeeping operations or other operations consistent with the U.N. Charter. However, under the US Export Administration Act, security assistance may be provided if the President certifies that “extraordinary circumstances” exist, so Section 502B is circumvented. The Leahy Law, named after the senator who introduced the amendment to US legislation, prohibits the USA from providing most forms of security assistance to any military or police unit when there is "credible evidence" that members of the unit are committing gross human rights violations. Assistance can resume if the government in question takes "effective measures" and, under the Pentagon's interpretation of the law, if the foreign government filters out the "few bad apples" in that particular unit, security assistance can continue.

On 16 August 2007, the US and Israeli governments signed a 10-year agreement for the provision of \$30 billion in US military aid. Full details of the package were not disclosed; however, it is reported to include a new generation of F-35 fighter jets, advanced bombs, and laser-guided missiles. This military aid package, amounting to \$3 billion per year, represented a 25 percent increase of the US annual military aid appropriation to Israel of \$2.4

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billion. Israel was already the largest recipient in the world of US military aid before the proposed increase. Even after the start of the current conflict and reports of serious violations of international humanitarian law by the IDF in Gaza, the US authorities continued to authorize large consignments of US munitions, including white phosphorus munitions, to Israel.

Other major arms exporting states such as France, Germany and the UK have been exporting far less to Israel than the US since 2004 but nevertheless these exports appear significant. According to the EU's 2008 report on arms export licences, published in December for the 2007 calendar year and consolidating the accounts that Member States must annually submit, 18 EU Member States authorised a total of 1,018 such licences to Israel worth €199,409,348. France, Germany and Romania were the top three exporters. France issued export licences worth €126 million, Germany authorised €28 million and Romania €17 million. Export authorisations from states do not necessarily correspond to actual arms export data in any one year for a variety of reasons, but licence authorisations do show the willingness of governments of exporting States to equip Israel's armed forces. Actual annual arms export data from the EU to Israel until the end of 2007 are shown in the table below.

Under Criterion 2 of the EU Code of Conduct on Arms Exports, Member States are supposed to “deny an export licence if there is a clear risk that the proposed export might be used for internal repression” or “be used in the commission of serious violations of international humanitarian law”. The term “internal repression” “includes, inter alia, torture and other cruel, inhuman and degrading treatment or punishment, summary or arbitrary executions, disappearances, arbitrary detentions and other major violations of human rights and fundamental freedoms as set out in relevant international human rights instruments, including the Universal Declaration on Human Rights and the International Covenant on Civil and Political Rights.” Across the EU, only 28 export licences were refused as a result of human rights, internal security or regional stability reasons.

As a result of political pressure in some EU countries concerned about the conflict in Israel and the Occupied Palestinian Territories, nine EU states including Sweden now claim not to export any arms to Israel and states such as Italy and the UK have claimed to restrict their exports of conventional arms overall, but sometimes such exports to Israel consist of components or transit trade. Nonetheless export data show that such states have exported infantry weapons, military vehicles and components for arms sent to Israel.

Other significant suppliers of military equipment to Israel since 2001 are (in alphabetical order) Austria, Australia, Belgium, the Czech Republic, Finland, Germany, Hungary, Italy, Poland, Romania, Serbia-Montenegro, the Slovak Republic, Slovenia, South Korea and Spain. The Netherlands and Greece have been major transit countries for military equipment sent to Israel. Albania, Bosnia-Herzegovina, Brazil, Colombia, and India are reported to have been in the top 20 commercial suppliers of arms and ammunition.

### **International obligations regarding conventional arms transfers**

The UN Security Council, in Operative Provision 6 of Resolution 1860 (2009), of 8 January 2009, called on Member States "to intensify efforts to provide arrangements and guarantees in Gaza in order to ... prevent illicit trafficking in arms and ammunition..." According to the 1996 United Nations Guidelines for International Arms Transfers, the term "illicit arms trafficking is understood to cover that international trade in conventional arms, which is contrary to the laws of States and/or international law."<sup>21</sup>

The responsibility of all states to prohibit international arms transfers that will facilitate serious violations of international humanitarian law and human rights derives from their obligation not to participate in the internationally wrongful acts of another state. The principle is stated in Article 16 of the International Law Commission's Articles on Responsibility of States for Internationally Wrongful Acts<sup>22</sup> in terms which reflect customary international law, binding on all States. Article 16 states: "A State which aids or assists another State in the commission of an internationally wrongful act by the latter is internationally responsible for doing so if: (a) that State does so with knowledge of the circumstances of the internationally wrongful act; and (b) the act would be internationally wrongful if committed by that State." General international law prohibits conduct that involves patterns of blatant abuse and complicity in such a pattern of blatant abuse. The expression "gross" or "serious" violation of human rights is commonly used to convey a sense of scale, evoking both the number of violations and the gravity of their consequences for the victims. It also suggests a measure of intent.

The table below shows the USA and EU suppliers of conventional arms to Israel, including government to government transfers and commercial sales – up to the most recent period publicly available.

### **Actual Export of US and EU conventional military equipment to Israel for the period 2004 to 2007<sup>23</sup>:**

		<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>TOTAL</b>
USA	USD	1,622,878,000	2,634,108,000	2,487,285,000	1,529,306,000	8,273,577,000
<i>FMS</i>	USD	1,203,995,000	1,523,885,000	1,285,861,000	1,269,031,000	5,282,772,000
<i>DCS</i>	USD	418,883,000	1,110,223,000	1,201,424,000	260,275,000	2,990,805,000

<sup>21</sup> See paragraph 7; the Guidelines were endorsed by the General Assembly in A/RES/51/47 B, 10 December 1996.

<sup>22</sup> See Article 16 of the ILC Articles which were commended by the General Assembly, A/RES/56/83, 12 December 2001.

<sup>23</sup> Figures taken from the Annual Reports on the EU Code of Conduct, otherwise national reports which can be viewed at:

[http://www.sipri.org/contents/armstrad/atlinks\\_gov.html](http://www.sipri.org/contents/armstrad/atlinks_gov.html)

USA data is taken from the DOD Defense Security Agency Facts Book 2007.

Bulgaria	EUR				249,445	249,445
Czech Republic	EUR	821,000	1,289,000	261,000	2,442,820	4,813,820
France	EUR	17,300,000	12,808,032	21,358,751	7,998,720	59,465,503
Germany	EUR	417,000	477,000	14,000	770,000	1,678,000
Greece	EUR		558,858	88,606	29,640	677,104
Italy	EUR	161,780	220,095	42,588	444,670	869,133
Netherlands	EUR		3,253,083			3,253,083
Poland	EUR		508,819			508,819
Romania	EUR	3,154,943	3,395,240	6,809,454	7,631,156	20,990,793
Slovakia	EUR		304,656	205,506		510,162
Slovenia	EUR	435,818	233,544	492,150	1,138,180	2,299,692
Spain	EUR	35,257	273,728	441,335	1,515,934	2,266,254
UK	GBP		582,071	3,572,788	6,315,960	10,470,819

This table shows actual exports of military equipment as reported by the USA and EU governments. The value of the deliveries is shown in the different currencies as reported. Statistics are compiled differently by states. There is no available data for 2008. This table has been compiled, with the exception of the USA, in alphabetical order of the countries named in the table.

### **Major commercial suppliers of infantry weapons, munitions and armoured vehicles, and aircraft to Israel**

Based upon customs data submitted by states to the UN Commodity Trade Statistics Database (Comtrade) the US accounted for 95 percent of all commercial sales - which are those sales made directly to Israel by manufacturers to foreign recipients falling within the broad UN customs category 891 of "arms and ammunition" between 2004 and 2007 amounting to a total recorded value of over US\$1.3 billion. Other major suppliers in this category were Serbia and Montenegro (in 2004), Poland, Romania, Serbia (since 2005), South Korea, Slovakia, Czech Republic, Finland and Austria.

The table below shows the top 20 arms suppliers to Israel by value in US\$ according to this UN customs category of "arms and ammunition", code 891. UN data is not yet available for 2008.

<b>Top 20 Arms and Ammunition Deliveries to Israel between 2004-2007 measured in US\$</b>	
USA	1,312,909,556
Serbia and Montenegro (2004 only)	8,626,560
Poland	7,455,679
Romania	6,757,241

Serbia <sup>24</sup>	6,331,138
Korea, South	5,864,486
Slovakia	5,415,005
Czech Republic	4,491,753
Finland	4,138,731
Austria	4,015,987
Italy	3,187,896
Brazil	1,983,166
Bosnia-Herzegovina	1,880,499
Germany	1,531,000
Colombia	1,496,192
Albania	1,255,415
India	1,052,680
Spain	952,725
Netherlands	784,714
UK	754,367
Canada	707,384

#### **A note on UN Comtrade data**

No useful information is submitted by States to the UN Comtrade database on the quantity or exact types of military equipment or munitions transferred. The only indicator of the size of the shipment(s) is the value in US\$. Also, not all States report or report reliably to the UN and do not necessarily report their trade statistics for each and every year. However, UN Comtrade data can be used to ask governments about the exact nature of these deliveries, what equipment they exactly covered, what quantity, who the end-user is and what is the intended end-use. Nonetheless, the UN data does show which States are the main suppliers of arms to Israel.

#### **Aircraft and Helicopters**

Over the years, the US has also supplied Israel with US-made F-16 combat aircraft, Apache AH-64 helicopters and Black Hawk UH-60 combat helicopters.<sup>25</sup>

According to the most recent data available submitted to the UN Register on Conventional Arms by the US government, during 2007 the US exported to Israel one M577A2 Command armoured combat vehicle; 18 F-16D combat aircraft; and 50 LAU-129 A/A launcher missile launchers.<sup>26</sup> In 2006, the USA exported to Israel 21 F16 aircraft in 2006 and 42 Bell AH-1F

<sup>24</sup> This data was submitted by Serbia separately after 2005 after Montenegro separated from Serbia which is why the table actually lists the top 21 suppliers.

<sup>25</sup> Classified as S-70A/UH-60L

<sup>26</sup> US submission to the UN Register on Conventional Weapons, 18 July 2008.

Cobra.<sup>27</sup> The Bell AH-1F Cobra gunship incorporates the 2.75 inch rockets fired from 7-tube M158, 19-tube M200, 7-tube M-260, or 19-tube M261 rocket pods, the M65 TOW<sup>28</sup> missile system and the M197 20mm gun.<sup>29</sup>

### Tanks and other armoured fighting vehicles

According to the UN Comtrade database the following countries are the top five suppliers of equipment under the category of 'tanks and other armoured fighting vehicles' code 89111.

<b>Top 5 suppliers of armoured fighting vehicles between 2004-2007 in US\$</b>	
USA	540,900,776
Romania	5,819,346
Slovakia	901,676
Korea, South	530,775
Kazakhstan	197,861

### Ammunition

According to the UN Comtrade database, the US was the largest commercial supplier of "munitions of war" under the code 89129 to Israel between 2004-2007 with US\$480 million - 98% of all commercial sales in this category.

<b>Top 10 deliveries of 'munitions' 2004-2007 in US\$</b>	
USA	480,814,850
Finland	4,093,348
Korea, South	4,048,761
Germany	823,000
Serbia <sup>30</sup>	760,635
Poland	393,587
Albania	387,169
Serbia and Montenegro (2004 only)	376,681
Romania	329,150

<sup>27</sup> As reported by Israel and the US although the US entry states 19 F-16s whereas the Israel entry states 21 F-16s.  
<sup>28</sup> Tube-launched, optically tracked, wire-guided missile.

<sup>29</sup> *Huey Cobra Gunships* (New Vanguard 125), Osprey Publishing, 2006: pp. 11.

<sup>30</sup> This data was submitted by Serbia separately after 2005 after Montenegro separated from Serbia which is why the table actually lists the top 21 suppliers.

Estonia	185,772
UK	8,048

According to research by Amnesty International and International Peace Information Service (a NGO based in Antwerp), Serbian and Bosnian companies have in recent years exported large quantities of small arms ammunition and components, as well as artillery shell and mortar components to Israeli companies that supply such weapons to the IDF. Such exports have been sanctioned by the governments of Serbia, Montenegro and Bosnia-Herzegovina.

The primary Israeli importer of small arms ammunition components and finished products from the Balkans is the company Israeli Military Industries (IMI). During 2005 and 2006, IMI imported millions of rounds of 5.56 calibre ammunition from the Prvi Partizan factory in Serbia.<sup>31</sup> IMI also ordered 45 million rounds of 5.56 calibre ammunition compatible with IDF assault rifles from a Bosnian factory in September 2005.<sup>32</sup> IMI continued to import massive quantities of IDF compatible ammunition from Serbia. IMI is the leading small arms supplier to the IDF. See below for information on small arms and light weapons.

### Rockets and Missiles

Israel typically uses the AGM-114 Hellfire II missiles which are fired from the Boeing AH-64 Apache attack helicopter. The armament of the AH-64 Apache attack helicopter consists of the 2.75 inch (70mm) Hydra rockets carried in 19-tube rocket pods and the M230 30mm chain gun.<sup>33</sup> The US supplies these to Israel as the table below shows.

Proposed US Foreign Military Sales notified to Congress 2005-2008 (DSCA)			
Date	Source	Quantity	Description
30/10/07	Transmittal 08-07	2,000	Radio Frequency (RF) TOW 2A Missiles
		14	TOW 2A Fly-to-buy Missiles
		1,000	AGM-114K3 HELLFIRE II Missiles
		200	AGM-114L3 HELLFIRE II Longbow Missiles
		500	AGM-114M3 HELLFIRE II Missiles
		100	PATRIOT Guidance Enhanced Missile Plus (GEM+)
09/09/08	Transmittal 08-87	28,000	M72A7 66mm Light Anti-Armor Weapons (LAAWs),
		60,000	M72AS 21mm Sub-Caliber Training Rockets.

<sup>31</sup> According to information obtained from the Ministry of International Economic Relations (MIER) of Serbia & Montenegro.

<sup>32</sup> Arms transfer documentation made available to Amnesty International originating from Bosnia & Herzegovina  
<sup>33</sup> Apache AH-64 Boeing (McDonnell Douglas) 1976-2005 (New Vanguard 111), Osprey Publishing, 2005: pp. 14.

## Bombs

The table below shows proposed US supplies of the GBU-28 ‘bunker buster’ and other bombs to Israel between 2005 and 2008.

<b>Proposed US Foreign Military Sales notified to Congress 2005-2008 (DSCA)</b>			
<b>Date</b>	<b>Source</b>	<b>Quantity</b>	<b>Description</b>
29/04/05	Transmittal 05-10	100	GBU-28 bombs that include: BLU-113A/B penetration warhead, WGU-36A/B guidance control unit, FMU-143H/B bomb fuze, and BSG-92/B airfoil group guide. Also included are: support equipment; testing, spare and repair parts; supply support; publications and technical data, U.S. Government and contractor technical assistance and other related elements of logistics support.
20/04/07	Transmittal 07-21	3,500	MK-84 (Tritonal) general purpose bomb units
03/08/07	Transmittal 07-32	10,000 1,500 2,000 50	MK-84 live bombs; MK- 82 live bombs; BLU-109 live bombs; GBU-28 guided live bombs
09/09/08	Transmittal 08-82	1,000	GBU-39 Small Diameter Bombs (SDB1)

The US Department of Defense contracted Boeing in September 2006 to incorporate focused lethality munition (FLM) technology into small diameter bombs.<sup>34</sup> According to the table above 1000 GBU-39s were ordered in September 2008 by Israel. There are reports that the FLM uses DIME technology.<sup>35</sup>

### Artillery shells including white phosphorus shells

During the Gaza conflict, photographic evidence emerged of the Israeli army using stocks of white phosphorus smoke shells. Amnesty International has identified the pale blue 155mm rounds, clearly marked with the designation M825A1, as an American-made white phosphorus munition.<sup>36</sup> White phosphorus is also marked in the US list of munitions due to be carried on a ‘ship of shame’ from the USA to Israel – see section on “US arms ships” below.

<sup>34</sup> “Small Diameter Bomb (SDB): GBU-39,” Defense Update, 26 January 2009, <http://www.defense-update.com/products/s/sdb.htm>.

<sup>35</sup> <http://www.globalsecurity.org/military/systems/munitions/sdb-flm.htm>; ‘SDB Focused Lethality Munition’, Boeing Backgrounder, August 2008, [http://www.boeing.com/defense-space/missiles/sdb/docs/SDB\\_FLM\\_overview.pdf](http://www.boeing.com/defense-space/missiles/sdb/docs/SDB_FLM_overview.pdf)

<sup>36</sup> This evidence was reported in ‘Gaza victims’ burns increase concern over phosphorus’, The Times, 8 January, [http://www.timesonline.co.uk/tol/news/world/middle\\_east/article5470047.ece](http://www.timesonline.co.uk/tol/news/world/middle_east/article5470047.ece)

The table below shows government-to-government sales' notices for the shipment of artillery munitions from the US to Israel:

Proposed US Foreign Military Sales notified to Congress 2005-2008 (DSCA)			
Date	Source	Quantity	Description
30/10/07	Transmittal 08-07	150,048 8,000 30,003 100,000 5,000	M433 40MM High Explosive Dual Purpose (HEDP) Cartridges M930 120MM Illuminating Cartridges M889A1 81MM High Explosive Cartridges with M935 Fuzes M107 155MM High Explosive Artillery Rounds M141 83MM Bunker Defeat Munitions

Israeli companies such as Soltam Systems have also purchased large quantities of key mortar and artillery shell components from Bosnia & Herzegovina.<sup>37</sup> Soltam Systems is a leading supplier of artillery and mortar shells to the IDF.<sup>38</sup>

### Small Arms and Light Weapons

Israel makes its own pistols, assault rifles (Galil and Tavor), machine guns and other light weapons, while such items in the hands of Hamas and other Palestinian groups are usually former USSR types smuggled in from unknown sources.

The US has been a large supplier of firearms and light weapons to Israel. Many Israeli soldiers can be seen carrying M4 carbine assault rifles. According to EU reports for exports to Israel during 2007, Bulgaria and Poland issued licences for small arms and/or light weapons worth over €2 million, with Germany, Spain, Slovenia and the UK approving small amounts of less than €500,000.

The top five suppliers to Israel of 'military weapons' (under the code 89112 in the UN Comtrade database) have been:

Top 5: 2004-2007 In US\$	
USA	31,181,225
Albania	868,246

<sup>37</sup> Israeli government Foreign Defense Assistance and Defense Export Organization literature for the UK Defence Systems and Equipment International Exhibition, DSEI.

[http://www.exhibitions.sibat.mod.gov.il/DSEI/UploadDocs/sod\\_soltam.pdf](http://www.exhibitions.sibat.mod.gov.il/DSEI/UploadDocs/sod_soltam.pdf) Soltam supply 120mm mortars and 155mm self-propelled artillery to the IDF. Soltam also supply 60mm and 81 mm mortar shells to ITF.

<sup>38</sup> <http://soltam.bsmart.co.il/HTMLs/article.aspx?C2004=12638&BSP=12491&BSS7=12638> last accessed on 8 August 2006.

Netherlands	420,360
Mexico	115,080
Croatia	47,342

### Electronic Equipment

The EU's 2008 consolidated report on arms exports lists "electronic equipment specifically designed or modified for military use" with licences for export to Israel approved by France (€89 million) and Germany (€5 million) during 2007. In addition, France approved the export of €22 million of "imaging or countermeasure equipment for military use". The US is also thought to be a major supplier of such equipment.

### Components

According to the UN Comtrade data, the US was the largest commercial supplier of "parts and accessories for military weapons and non-military weapons" to Israel. Between 2004 and 2007 the US exported US\$151 million-worth of such parts and accessories - 97% of all commercial sales in this category. Other suppliers include: Austria which shipped \$3,045,131 worth during the same period; the Netherlands \$361,841; the UK \$279,565 and the Czech Republic \$116,304. The table below shows proposed government to government transfers from the US to Israel:

<b>Proposed US Foreign Military Sales notified to Congress 2005-2008 (DSCA)</b>			
<b>Date</b>	<b>Source</b>	<b>Quantity</b>	<b>Description</b>
03/08/07	Transmittal 07-32	10,000	Joint Direct Attack Munitions (JDAM) tail kits;
		2,500	PAVEWAY II full kits for the MK-82 warhead;
		500	PAVEWAY II full kits for the MK-83 warhead;
		1,000	PAVEWAY II full kits for the MK-84 warhead;
		10,000	FMU-139 live fuze components; and
		10,000	FMU-152 live fuze components.

The UK is also coming under increasing scrutiny about the export of components. Amnesty International remains particularly concerned about the exports of UK components that may have been incorporated into military systems used by the IDF. The introduction in 2002 of revised UK guidelines for the control of exports of components for incorporation in military systems were specifically intended to allow the export of UK components to the USA for incorporation in military equipment such as F-16 combat aircraft and Apache combat helicopters which were known to be exported to Israel. The UK has also licensed components for a wide variety of military equipment directly to Israel. Details contained within UK government reports do not allow for a meaningful assessment of the end-user of this equipment, but Amnesty International has concerns that some of this equipment, particularly components for UAVs and naval equipment, may have been exported to Israeli military forces and used for serious violations.

In addition, numerous credible sources, including company promotional literature, established defence industry journals and sources from within the Israeli military have stated that a UK company provides the engines for the Hermes 450 pilotless “drone” UAV aircraft manufactured in Israel by Elbit systems.<sup>39</sup> The Hermes 450 UAVs are currently operated by the IDF as well as other armed forces. It has been widely reported that the Hermes 450 UAV uses a 'UEL AR-80-1010' engine manufactured by a company based in Lichfield.<sup>40</sup> The initial version of the aircraft was reportedly powered by an 'AR741' engine, also produced by the Lichfield company, when at the time the IDF were the only users of the Hermes 450<sup>41</sup>. A spokesperson for Elbit Systems has denied these claims, stating that whilst the UK company does provide engines for Hermes 450s that are destined for export, the UK company does not provide the engines for any of the drones used by the Israeli armed forces. Amnesty International is not alleging any illegality on the part of UK companies, nor suggesting that any of its exports have not been authorised by the necessary export licenses from the UK government.

UAVs have been extensively used in combat operations by the IDF in Lebanon and Gaza<sup>42</sup>. The claims have been strongly Denied by Elbit systems, the Israeli manufacturer of the Hermes 450, who have stated that UK engines are only used in variants manufactured for export and not used by the IDF. Amnesty International-UK has written to the UK government to seek assurances that it has not licensed components for use in UAVs and that it has undertaken sufficient end-use monitoring to ascertain that UK engines are not and have not been used in UAVs operated by the IDF. Government officials<sup>43</sup> have admitted that they are unable to say whether UK engines have been incorporated into drones used by the IDF. MPs are calling for a full account into arms exports to Israel. The lack of a robust end-use monitoring and verification system hampers public and parliamentary scrutiny of UK arms supplies, especially where it concerns the transfer of components that are incorporated into military equipment.<sup>44</sup>

<sup>39</sup> [http://amnesty.org.uk/news\\_details.asp?NewsID=18004](http://amnesty.org.uk/news_details.asp?NewsID=18004)

<sup>40</sup> [http://www.elbitsystems.com/data/un\\_Hermes%20450.pdf](http://www.elbitsystems.com/data/un_Hermes%20450.pdf)

<sup>41</sup> Latest Hermes UAV to equip IDF', Jane's International Defence Review, 1 July 1997: 'The `S' model is the latest version of Silver Arrow's Hermes 450...The 450S is powered by a single UEL AR-80-1010 air/water-cooled rotary engine'.

<sup>42</sup> Elbit Systems Press Release, 12 November 2007. See also statements by John Ging, Director of Operations for the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA), Gaza City, 5 January 2009: <http://domino.un.org/unispal.nsf/47d4e277b48d9d3685256ddc00612265/1a9a526ac2009453852575360052b3d7!OpenDocument>

<sup>43</sup> See recent exchanges by government officials at a UK parliamentary committee on arms export controls on 21 January 2009, available at: <http://www.publications.parliament.uk/pa/cm200809/cmselect/cmquad/uc178-i/uc17802.htm>

<sup>44</sup> See 'Israeli drones in Gaza may have had British engines, ministers admit: Government unable to say whether aircraft used to target missile strikes had UK-exported parts', The Guardian, 3 February 2009.

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According to the Canadian NGO Ploughshares, Canadian-built components are also included in many US weapons systems that are exported to Israel.

### **Special Fuels**

Under the Foreign Military Sales program the US government regularly provides the Israeli government with various fuels: EN590 diesel fuel and JP-8 jet fuel. Because of its properties JP-8 is also used in ground-based operations, for example armoured vehicles.<sup>45</sup> See **appendix two** for a table showing fuel contracts for the Israeli government between 2002 and 2008.

### **Current US arms ships**

Since early December 2008, the US Military Sealift Command has been organizing three large deliveries by sea of military ammunition and high explosives, including explosives with white phosphorus, from the US base at Sunny Hill, North Carolina, to an Israeli port near Gaza.

On 4 December 2008, the USA's military shipping service, Military Sealift Command, issued a request to charter a commercial cargo vessel to move a very large consignment of "containerized ammunition and other containerized ammunition supplies" from Sunny Point, North Carolina – the location of a US Military Ocean Terminal - to Ashdod in Israel. The contract was awarded on 8 December 2008 to a German shipping company, *Oskar Wehr KG GmbH*, and the cargo was due to be loaded in North Carolina on 13 December 2008.

The US military tender request indicated an extremely large quantity of ammunition and associated supplies: the first planned shipment consisted of the equivalent of 989 standard (20ft) shipping containers of cargo, and required the ship to carry at least 5.8 million lbs (around 2600 metric tons) of 'net explosive weight', a measure of the explosive content of the cargo. The ship was placed under the tactical control of the US Sealift Logistics Command for the duration of the voyage, and was required to have up to 12 US armed forces personnel on board.

On 31 December 2008, just four days after the start of Israel's attacks on targets in Gaza, a second request was issued by the US Military Sealift Command for a ship to transport two further shipments of ammunition from Astakos in Greece to Ashdod, Israel. These shipments were to comprise 157 and 168 standard shipping containers of ammunition with a net explosive weight of nearly 1 million lbs. The 'Hazard Codes' of the cargo indicate that the cargo would include articles containing white phosphorus.

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<sup>45</sup> B. Smith, T. Bruno: "Improvements in the measurement of distillation curves. 4. Application to the aviation turbine fuel Jet-A", *Industrial & Engineering Chemistry Research*, 2007 (Vol. 46, No. 1): pp. 310-320.

**Planned US munitions shipments to Ashdod (Israel), according to US tender documents:**

	<b>From</b>	<b>Loading date</b>	<b>Latest Arrival Date in Ashdod</b>	<b>Cargo Size (equivalent no. of 20ft shipping containers)</b>	<b>Net Explosive Weight (lbs)</b>
Shipment 1	Sunny Point, NC, USA	13 Dec 2008	?? (42 day charter)	989 containers	5,800,000
Shipment 2	Astakos, Greece	18-19 Jan 2009	22 Jan 2009	157 containers	971,575.9
Shipment 3	Astakos, Greece	25 Jan 2009? [latest arrival date in Astakos]	29 Jan 2009	168 containers	973,164.3

Transport tenders for these second and third shipments were cancelled on 9 January. However, a US military spokesperson confirmed on 12 January that they were still seeking a way to deliver these shipments, likewise destined for the Israel stockpile. US forces have also previously transferred ammunition consignments between vessels at sea around the Greek mainland and Crete.

According to Amnesty International research with the NGOs TransArms and the Omega Research Foundation, on 20 December 2008, the first delivery of 989 containers was taken from North Carolina in a container ship, the *Wehr Elbe*, owned by Oskar Wehr KG. This arms ship entered Gibraltar on 28 December, but the German firm told Amnesty International that its ship did not unload the arms in Israel. According to maritime tracking facilities, the *Wehr Elbe* sailed off the coast of Greece near Astakos for several days then disappeared off the radar on 12 January reportedly after the Greek Government refused to grant permission to tranship the munitions to Israel. The *Wehr Elbe* has a capacity of over 2,500 20 ft shipping containers and thus has the capacity to load the first shipment of ammunition in North Carolina, load the other shipments in Astakos, and sail on to Ashdod. As of 27 January, according to maritime tracking facilities, the ship's last port of call was Augusta, Italy. As of 17 February, the ship has not subsequently docked anywhere.

According to a report from Reuters on 9 January 2009, a US naval spokesperson stated that the delivery was "to a pre-positioned U.S. munitions stockpile in Israel in accordance with a congressionally authorized 1990 agreement between the U.S. and Israel...This previously scheduled shipment is routine and not in support of the current situation in Gaza." However, the portion of US Army Prepositioned Stocks (APS) maintained in Israel is the War Reserve Stocks for Allies – Israel (WRSA-I) stockpile. According to information provided to Congress in 2003 by the US Department of Defense, this is a "separate stockpile of U.S.-owned munitions and equipment set aside, reserved, or intended for use as war reserve stocks by the

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U.S. and which may be transferred to the Government of Israel in an emergency, subject to reimbursement.”<sup>46</sup>

## Arms supplies to Hamas and other Palestinian armed groups

Hamas and other Palestinian armed groups have smuggled small arms, light weapons, rockets and rocket components into Gaza, using tunnels from Egypt into Gaza; this weaponry has been acquired from clandestine sources. “Katyusha” rockets are originally Russian-made, but those being used by Palestinian fighters are unlikely to have been acquired directly from Russia. Such imports and holdings are on a very small scale compared to those of Israel. A rocket arsenal that provides an offensive or deterrent capability similar to that fielded by the Lebanese group Hizbullah during the 2006 war with Israel is beyond the reach of Palestinian militant groups.

It is reported by *Jane's Defence Weekly* that Hamas has an estimated rocket arsenal of 3,000, primarily locally made, short-range rockets: the Qassam 1, 2 and 3. The longer-range rockets are purchased abroad and smuggled into Gaza via Egypt. These include the 122mm Grad rocket, originally Russian-made, the Iranian-made 220mm Fajr-3, and allegedly also Chinese-made rockets smuggled from Sudan.<sup>47</sup> The explosives used in the warheads is either manufactured locally from fertilizer or smuggled into Gaza through tunnels or from the sea.

Over the years several arms shipments allegedly en route to Gaza are reported to have been intercepted by Israeli or Egyptian security forces. In May 2006 the Israeli Navy said it had intercepted a Palestinian fishing boat with 500kg of weapons grade TNT.<sup>48</sup> The Egyptian police said they recovered 1,000 kg of explosives in Sinai – 30 km from Gaza - in October 2006.<sup>49</sup> Also, in 2008, several large caches were reportedly recovered: Egyptian police uncovered a cache in May 2008 containing 500kg of TNT 500 metres from the Rafah border crossing between Egypt and Gaza.<sup>50</sup> In late May 2008, an Egyptian police official told the Associated Press news agency that the Egyptian authorities had found ammunition boxes, RPGs and anti-aircraft missiles apparently bound for Gaza some 80 km south of Rafah.<sup>51</sup>

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<sup>46</sup> ‘US says arms shipment to Israel is not linked to Gaza’, Reuters, 9 January 2009.

<sup>47</sup> ‘Hamas deploys rocket arsenal against Israel’, *Janes’ Defence Weekly*, 14 January 2009, pp. 5

<sup>48</sup> ‘Israel Navy seizes load of high grade explosives off Gaza’, *International Herald Tribune*, 9 May 2006

<sup>49</sup> ‘Egyptian police seize some 1,400 kilos of TNT buried in N. Sinai’, *Haaretz (Associated Press)*, 4 November 2006.

<sup>50</sup> ‘Egyptian police uncover 500 kilograms of TNT near Egypt-Gaza border’, *Jerusalem Post (Associated Press)*, 27 May 2008.

<sup>51</sup> ‘Egyptian police uncover weapons cache inside a Sinai mountain’, *International Herald Tribune (Associated Press)*, 31 May 2008.

The table below estimates the Hamas rocket arsenal<sup>52</sup>:

Type	Range	Warhead Payload	Origin
Qassam-1	3 km	0.5 kg	Locally made
Qassam-2	6-10 km	5-7 kg	Locally made
Qassam-3	10 km	10 kg	Locally made
122mm Grad	20 km		USSR/Russia, various
220mm Fajr-3	40 km	45 kg	Iran
122mm	40 km		China

According to *Jane's Defence Weekly*, Hamas is in the possession of several home-made anti-armour rockets: the Al-Battar, the Banna 1 and Banna 2.<sup>53</sup>

There have been several reports that Iran has provided military equipment and munitions, including rockets, to Hamas and other Palestinian armed groups but Amnesty International has not seen any evidence to verify these allegations.

## Recommendations

- **Impose UN SC arms embargo** - Impose immediately a comprehensive UN Security Council arms embargo on Israel, Hamas and other Palestinian armed groups until effective mechanisms are in place to ensure that weapons or munitions and other military equipment will not be used to commit serious violations of international human rights law and international humanitarian law. This must include ensuring that alleged violations are thoroughly and impartially investigated and accountability, with any persons who are found responsible being brought to justice in fair trials.
- **Suspend All Arms Transfers** - Act immediately to unilaterally suspend all transfers of military equipment, assistance and munitions, as well as those which may be diverted, to Israel, Hamas and other Palestinian armed groups until there is no longer a substantial risk that such equipment will be used for serious violations of

<sup>52</sup> This information has been compiled from the following articles: 'Israel aims for new security reality in Gaza', *Jane's Defence Weekly*, 14 January 2009; 'Hamas is on the defensive in Gaza crisis', *Jane's Defence Weekly*, 14 January 2009; 'Hamas deploys rocket arsenal against Israel', *Jane's Defence Weekly*, 14 January 2009; 'Hamas longer-range rockets threaten Israeli Companies', *Defense News*, 5 January 2009.

<sup>53</sup> "Hamas deploys rocket arsenal against Israel", *Jane's Defence Weekly*, 14 January 2009, pp. 5.

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international humanitarian law and human rights abuses. The suspension should include all indirect exports via other countries, the transfer of military components and technologies and any brokering, financial or logistical activities that would facilitate such transfers.

- **Accountability** - Establish without delay thorough, independent and impartial investigation of violations and abuses of international human rights law and international humanitarian law, including the Israeli attacks which have been directed at civilians or civilian buildings in the Gaza Strip, or which are disproportionate, and Palestinian armed groups' indiscriminate rocket attacks against civilian centres in southern Israel. Amnesty International has collected evidence of possible war crimes and other serious violations of international humanitarian law and human rights law. There must be full accountability for such crimes. Where appropriate states must be ready to initiate criminal investigations and carry out prosecutions before their own courts if the evidence warrants it.
- **Support for the Golden Rule on Human Rights** - Actively support the establishment of an effective global Arms Trade Treaty that includes the "Golden Rule" on human rights and international humanitarian law to avoid and minimise the recurrence of arms supplies contributing to such serious violations – the Golden Rule promoted by Amnesty International and other NGOs is that all States will prevent the transfer of arms, including military weapons, ammunition and equipment, where there is a substantial risk that the arms are likely to be used for serious violations of international human rights law or international humanitarian law.

Public Document

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International Secretariat, Amnesty International, 1 Easton St., London WC1X 0DW, UK  
[www.amnesty.org](http://www.amnesty.org)

## Appendix One: Proposed US Foreign Military Sales notified to Congress 2005-200854

Date	Source	Quantity	Description
29/04/05	Transmittal 05-10	100	GBU-28 bombs that include: BLU-113A/B penetration warhead, WGU-36A/B guidance control unit, FMU-143H/B bomb fuze, and BSG-92/B airfoil group guide. Also included are: support equipment; testing, spare and repair parts; supply support; publications and technical data, U.S. Government and contractor technical assistance and other related elements of logistics support. The estimated cost is US\$30 million.
20/04/07	Transmittal 07-21	3,500	MK-84 (Tritonal) general purpose bomb units, testing, support equipment, spares and repair parts, supply support, personnel training and training equipment, publications and technical data, U.S. Government and contractor technical assistance and other related elements of logistics support. The estimated cost is US\$65 million.
03/08/07	Transmittal 07-32	10,000 2,500 500 1,000 10,000 1,500 2,000 50 10,000 10,000	Joint Direct Attack Munitions (JDAM) tail kits; PAVEWAY II full kits for the MK-82 warhead; PAVEWAY II full kits for the MK-83 warhead; PAVEWAY II full kits for the MK- 84 warhead; MK-84 live bombs; MK- 82 live bombs; BLU-109 live bombs; GBU-28 guided live bombs; FMU-139 live fuze components; and FMU-152 live fuze components. Also included: Containers, bomb components, spare/repair parts, publications, documentation, personnel training, training equipment, contractor technical and logistics personnel services, and other related support elements. Total value could be US\$465 million
24/08/07	Transmittal 07-37	30 500	RGM-84L BLOCK II HARPOON Anti-Ship missiles with containers and AIM-9M SIDEWINDER Short Range Air-to-Air Infrared Guided missiles, spares and repair parts for support equipment, training, publications and technical documents, U.S. Government and contractor technical assistance, and other related elements of logistics and program support. The estimated cost is US\$163 million.
24/08/07	Transmittal	200	AIM-120C-7 Advanced Medium Range Air-to-Air

<sup>54</sup> US Department of Defense, Defense Security Cooperation Agency, Arms Sales Notifications, [http://www.dsca.mil/PressReleases/36-b/36b\\_index.htm](http://www.dsca.mil/PressReleases/36-b/36b_index.htm) last accessed 19 January 2009.

	07-43		(AMRAAM) missiles, containers, components, spare/repair parts, publications, documentation, personnel training, training equipment, contractor technical and logistics personnel services, and other related support elements. The estimated cost is US\$171 million.
30/10/07	Transmittal 08-07	2,000 14 1,000 200 500 100 150,048 8,000 30,003 100,000 5,000	Radio Frequency (RF) TOW 2A Missiles TOW 2A Fly-to-buy Missiles AGM-114K3 HELLFIRE II Missiles AGM-114L3 HELLFIRE II Longbow Missiles AGM-114M3 HELLFIRE II Missiles PATRIOT Guidance Enhanced Missile Plus (GEM+) M433 40MM High Explosive Dual Purpose (HEDP) Cartridges M930 120MM Illuminating Cartridges M889A1 81MM HE Cartridges with M935 Fuzes M107 155MM HE Projectiles M141 83MM Bunker Defeat Munitions Also, includes non-MDE cartridges, projectiles, charges, fuzes, containers, spare and repair parts, test and tool sets, personnel training and equipment, publications, U.S. Government and contractor engineering and logistics personnel services, Quality Assurance Team support services, and other related elements of logistics support. The estimated cost is US\$1.329 billion.
09/06/08	Transmittal 08-42	25	T-6A Texan aircraft, Global Positioning System (GPS) with CMA-4124 GNSSA card and Embedded GPS/Inertial Navigation System (INS) spares, ferry maintenance, tanker support, aircraft ferry services, site survey, unit level trainer, spare and repair parts, support and test equipment, publications and technical documentation, personnel training and training equipment, contractor technical and logistics personnel services, and other related elements of logistics support. The estimated cost is US\$190 million.
09/09/08	Transmittal 08-62	3	PATRIOT System Configuration 3 Modification kits to upgrade 3 PATRIOT fire units to Radar Enhancement Phase 3 (REP-3) and Classification, Discrimination and Identification Phase 3 (CDI-3). Non-MDE includes: communication support equipment, tools and test equipment, integration and checkout, spares and repair parts, installation and training, publications and technical documents, U.S. Government and contractor technical assistance, and other related elements of logistics and program support. The estimated cost is US\$164 million.
15/07/08	Transmittal 06-63	4	Littoral Combat Ships (LCS-I variant): Hull, and all mechanical and electrical functions. Each ship will be equipped with: 2 MK-41 Vertical Launch Systems, 8 cells for each system; 1 Close-In-Weapon System, Block 1A, 1 Enhanced HARPOON Launching System with launchers; 2

			MK-32 Surface Vessel Torpedo Tubes; Communications and Sensors; Link 16; COMBATSS-21 with SPY-1F(V) and MK-99 Fire Control System; or Ship Self-Defense System. Also includes design and integration services, hardware and software, spare and repair parts, test and tool sets, personnel training and equipment, publications, U.S. Government and contractor engineering and logistics personnel services, and other related elements of logistics support. The estimated cost is US\$1.9 billion.
30/07/08	Transmittal 08-76	9 6 9 9 9 4 10 4 3 1 2 10 5	Lockheed Martin C-130J-30 United States Air Force (USAF) baseline aircraft including USAF baseline equipment and Block 7.0 Software; Rolls Royce AE 2100D3 spare engines; AN/AAR-47 Missile Warning Systems (includes three spares) ; AN/ALR-56M Advanced Radar Warning Receivers (includes three spares); AN/ALE-47 Counter-Measures Dispensing Systems (includes three spares) ; AN/AAQ-22 Star SAFIRE III Special Operations Suites (includes three spares) ; spare AN/ARC-210 Single Channel Ground and Airborne Radio Systems (SINCGARS); spare Secure Voice Very High Frequency/Ultra High Frequency Radios ; spare Secure Voice High Frequency Radios ; spare AN/AAR-222 SINCGARS and Key Gen (KV-10) Systems ; KIV-119 Non-standard Communication/COMSEC equipment ; ARC-210 Non-standard Communication/COMSEC equipment ; External Pylons and Fuel Tanks ; Internal Israeli Tank Modification Kits ; Also included are spare and repair parts, configurations updates, communications security equipment and radios, integration studies, support equipment, aircraft ferry and tanker support, repair and return, publications and technical documentation, personnel training and training equipment, U.S. Government and contractor engineering and logistics US\$1.9 billion.
09/09/08	Transmittal 08-82	1,000 150 30 2 7 1 2 12	GBU-39 Small Diameter Bombs (SDB1), BRU-61/A SDB1 Mounting Carriages, Guided Test Vehicles, BRU-61/A SDB Instrumented Carriages, Jettison Test Vehicles, Separation Test Vehicle, Reliability and Assessment Vehicles, Common Munitions BIT and Reprogramming Equipment with

			<p>Test Equipment and Adapters,  3 SDB1 Weapons Simulators, and  2 Load Crew Trainers.</p> <p>Also includes containers, flight test integration, spare and repair parts, support equipment, personnel training and equipment, publications and technical data, U.S. Government and contractor engineering and logistics personnel services, and other related elements of logistics support. The estimated cost is US\$77 million.</p>
29/09/08	Transmittal 08-83	25 (+50 optional)	<p>25 F-35 Joint Strike Fighter Conventional Take-Off and Landing (CTOL) aircraft with an option to purchase at a later date an additional 50 F-35 CTOL or Short Take-Off and Vertical Landing (STOVL) aircraft. All aircraft will be configured with either the Pratt and Whitney F-135 engines or General Electric-Rolls Royce F-136 engines. Other aircraft equipment includes: Electronic Warfare Systems; Command, Control, Communication, Computers and Intelligence/Communication, Navigational and Identification (C4I/CNI); Autonomic Logistics Global Support System (ALGS); Autonomic Logistics Information System (ALIS); Flight Mission Trainer; Weapons Employment Capability, and other Subsystems, Features, and Capabilities; F-35 unique infrared flares; unique systems or sovereign requirements; reprogramming center, Hardware/Software In-the-Loop Laboratory Capability; External Fuel Tanks; and F-35 Performance Based Logistics. Also includes: software development/integration, flight test instrumentation, aircraft ferry and tanker support, support equipment, tools and test equipment, spares and repair parts, personnel training and training equipment, publications and technical documents, U.S. Government and contractor engineering and logistics personnel services, and other related elements of logistics and program support. The estimated cost is US\$15.2 billion.</p>
09/09/08	Transmittal 08-87	28,000 60,000	<p>M72A7 66mm Light Anti-Armor Weapons (LAAWs),  M72AS 21mm Sub-Caliber Training Rockets, spare and repair parts, support equipment,  publications and technical documentation, personnel training and training equipment, U.S. Government and contractor engineering and logistics personnel services, and other related elements of logistics support. The estimated cost is US\$89 million.</p>

## Appendix Two: US Foreign Military Sales Fuel Contracts for Israeli government 2002-2008<sup>55</sup>

Award No.	Awardee	Description	Source
SP0600-08-D-0495	Valero Marketing & Supply Co., San Antonio, Texas	\$45,978,408.00 fixed price with economic price adjustment, indefinite delivery and indefinite quantity contract for <b>fuel</b> . Using service is the Government of Israel. The date of performance completion is Aug. 13, 2008	Defense Contracts, No. 562-08 (3 July 2008)
SP0600-06-D-0506	Refinery Associates of Texas, Inc., New Braunfels, Texas,	a maximum \$22,556,374 fixed-price with economic price adjustment contract for <b>diesel fuel</b> . The using service is foreign military sales – Israel. The other location of performance is Compagnie Industrielle Maritime SNC, Le Harve, France. This is an indefinite-delivery, indefinite-quantity type contract. The date of performance completion is July 31, 2006.	Defense Contracts, No. 707-06 (25 July 2006)
SP0600-06-D-0542	Valero Marketing & Supply Co., San Antonio, Texas	a maximum \$36,781,780 fixed-price with economic price adjustment contract for <b>JPS jet fuel</b> for the government of Israel. The date of performance completion is Jan. 30, 2007.	Defense Contracts, No. 669-06 (14 July 2006)
SP0600-05-D-0453	Valero Marketing & Supply Co., San Antonio, Texas	A \$103,331,200 fixed price with economic price adjustment type contract for fuel for the government of Israel. Performance completion date is expected to be December 31, 2005.	Defense Contracts, No. 1216-04 (29 November 2004)
SP0600-05-D-0451	ExxonMobil Fuels Marketing, Fairfax, Va.	A maximum \$32,306,080 fixed price with economic price adjustment contract for USG of <b>EN590</b> and <b>EN 228</b> for Foreign Military Sale to Israel. Performance completion date is Dec. 31, 2005.	Defense Contracts, No. 229-05 (4 March 2005)
SP0600-04-D-0452	ExxonMobil Fuels Marketing, Fairfax, Va.	A \$24,314,094 fixed price with economic price adjustment for <b>fuel</b> for	Defense Contracts,

<sup>55</sup> US Department of Defense, contract archive, <http://www.defenselink.mil/contracts/archive.aspx> last accessed 19 January 2009.

		Foreign Military Sale (Israel). Performance completion date is expected to be March 1, 2005.	No. 965-03 (19 December 2003)
SP0600-04-D-0454	Valero Marketing and Supply Company, San Antonio, Texas	A \$7,093,519 fixed price with economic price adjustment type of contract for <b>fuel</b> for the government of Israel. Performance completion date is expected to be November 30, 2003.	Defense Contracts, No. 817-03 (4 November 2003)
SP0600-03-D-0457	Valero Marketing and Supply Co., San Antonio, Texas	A \$87,199,890 fixed-price with economic-price adjustment type contract for JP8 and EN590 fuel for the government of Israel. The performance completion date is January 30, 2004.	Defense Contracts, No. 618-02 (5 December 2002)
SP0600-02-R-0552	Valero Marketing and Supply Co., San Antonio, Texas	A \$6,922,338 fixed price with economic price adjustment type contract for <b>JP8 jet Fuel</b> for the Government of Israel. Performance completion date is scheduled for October 2002.	Defense Contracts, No. 464-02 (12 September 2002)
SP0600-02-D-0502	Valero Marketing and Supply Company, San Antonio, Texas	A \$8,744,537 fixed-price with economic price adjustment type contract for 10,500,000 USG of <b>EN590</b> for the Government of Israel. Performance completion is expected to be April 30, 2002.	Defense Contracts, No. 164-02 (5 April 2002)