



Technology Story:

# MK-82

**HISTORICAL CONTEXT & IMPACT IN PALESTINE**

E157AC - Engineering, Environment & Society    SPRING 2024

# HISTORICAL CONTEXT

- ❖ MK-82 is the most popular bomb sold by the US
- ❖ First introduced in 1950s: Vietnam War
- ❖ Other Wars: Gulf War, Afghanistan, Iraq, Syria, Yemen, and most recently, the Israeli-Palestine Conflict [1].

Photo Description: U.S. supplied MK-82 bombs is the Yemen Bus Massacre which killed around 51 people, 40 being children [2].



Source: Yemen Bus Massacre - MK-82 bomb fragment

# WHO IS PROFITING?



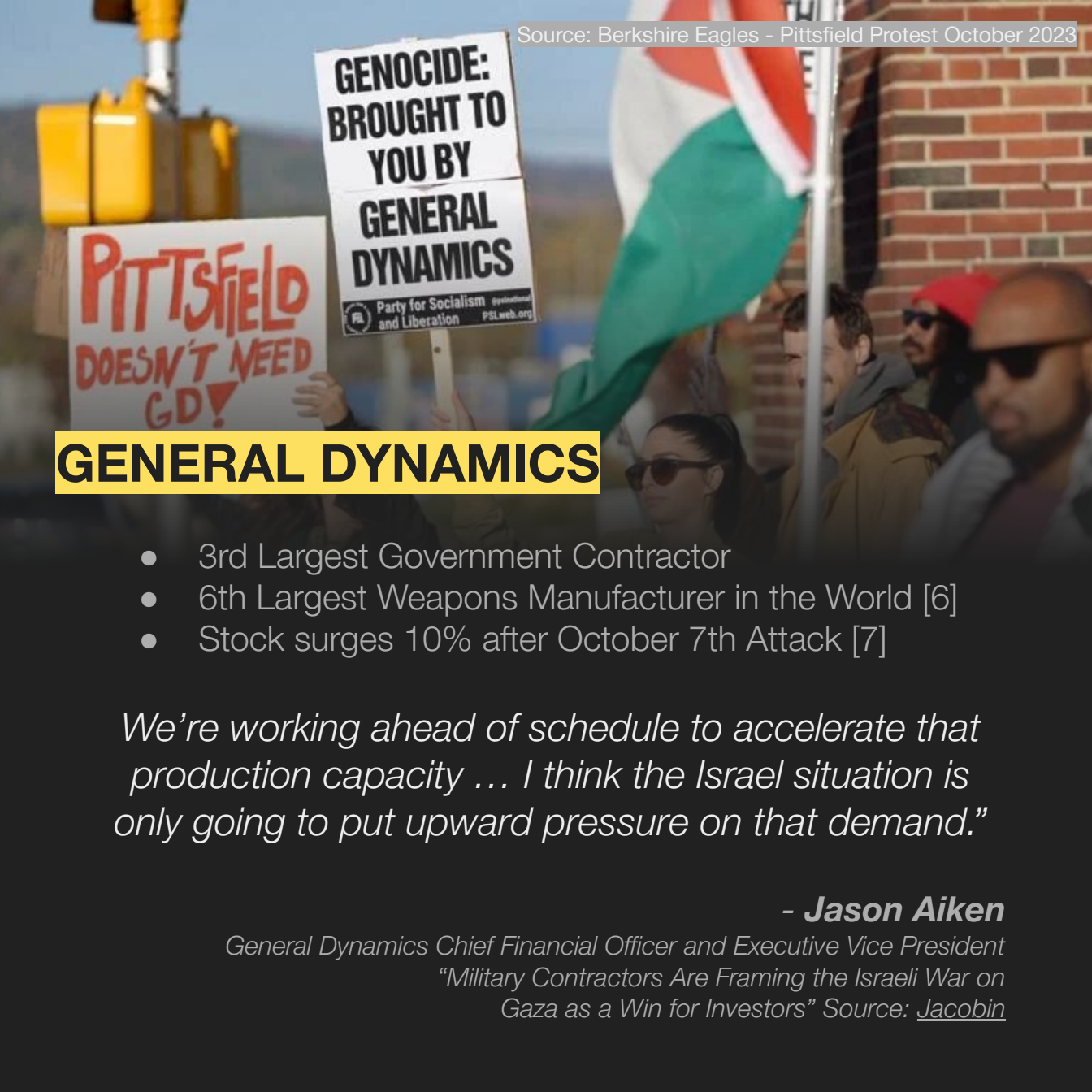
- ❖ Its profitable for the US to maintain their arms dependency. Since the Israel-Hamas conflict began, the U.S. conducted over 100 Foreign Military Sales.
- ❖ By December 2023, the U.S. had sent Israel over \$573 million in weapons [3], which includes 5,000 unguided MK-82 bombs. [4]
- ❖ The US Governments pays private companies to manufacturer weapons with the Federal Tax Dollars of U.S. citizens. Each MK-82 Bomb costs \$4,000 [5]



67B205

Source: U.S. Air Force - Public Domain





GENOCIDE:  
BROUGHT TO  
YOU BY  
GENERAL  
DYNAMICS

Party for Socialism and Liberation dynethed.com PSLweb.org

PITTSFIELD  
DOESN'T NEED  
GD!

## GENERAL DYNAMICS

- 3rd Largest Government Contractor
- 6th Largest Weapons Manufacturer in the World [6]
- Stock surges 10% after October 7th Attack [7]

*We're working ahead of schedule to accelerate that production capacity ... I think the Israel situation is only going to put upward pressure on that demand."*

**- Jason Aiken**

*General Dynamics Chief Financial Officer and Executive Vice President*

*"Military Contractors Are Framing the Israeli War on Gaza as a Win for Investors" Source: Jacobin*

# MANUFACTURERS

**MK-82:** General Purpose Aviation Bomb

**MK-80 Series:** MK-82 (500 lb), MK-83 (1000 lb), MK-84 (2000 lb)

**Casings:** General Dynamic Ordnance and Tactical System (GD-OTS)  
Garland, Texas

**Fillings:** McAlester Army Ammunition Plant (MCAAP)  
McAlester, Oklahoma

Source: [U.S. Army](#)



# MANUFACTURING

## CRATER SIZES CAUSED BY BOMBS

40mm hand  
grenade



Tank

(Scale purposes)



250 lbs  
MK81



500 lbs  
MK82



1000 lbs  
MK83



2000 lbs  
MK84



October 18, 2023



**Explosives:** 87 lbs of Tritonal (80% TNT + 20% Aluminum)

**MK-82 Manufacturing Emissions:** ~ 903 kg CO<sub>2</sub> eq. / each

### Raw Materials Extracted:

- Crude Oil + Sulfur (TNT Manufacturing)
- Aluminum + Iron Mining

**Cost:** ~ \$4,000 / each

Source: [Climate Focus](#) + [GICHD](#)

# IMPACT OF 'DUMB BOMBS'

- ❖ 'Dumb Bombs': No internal guidance system
- ❖ Impacts in Gaza: ~45% of the 29,000 munitions dropped on Gaza have been unguided. [4]
  - Result: High civilian casualties in the densely populated area.
- ❖ Example of Craters:

Source: [BBC](#) + [GICHD](#)



**MK-82**



**MK-84**



## MUNITIONS AND WEAPONS

By December, US had dispatched **230 cargo planes** and **20 ships** loaded with weapons and military equipment



**57,000**

155mm artillery shells



**≈21,000**

precision-guided munitions



**5,000**

unguided MK82 bombs



**500**

precision-guided attack munitions (JDAMs)



**+5,400**

MK84 bombs



**1,000**

GBU-39 small-diameter bombs



**200**

Kamikaze drones

## U.S. HYPOCRISY

- ❖ Dumb Bombs have been criticized as inhumane in highly populated areas.
- ❖ The U.S military has discontinued its own use of ‘dumb bombs’ for over a decade, due to the risk to civilians.
- ❖ Despite this risk, the US continues to provide unguided bombs to other countries. [4]





## UNGUIDED STRIKE BOMBS ARE A WAR CRIME AND SHOULD BE DISCONTINUED AND PROSECUTED

- ❖ Purpose of Unguided Bomb: Increase civilian casualties and destroy Infrastructure
- ❖ Why Israel Demands Unguided Bomb: 'Scorched Earth' policy [3].

*"Whoever returns here, if they return here after, will find scorched earth. No houses, no agriculture, no nothing. They have no future"*

Colonel Yogev Bar-Shesht  
Civil Administration Deputy Head of Palestinian Territories  
November 4, 2023

# POLLUTION FROM BOMBS



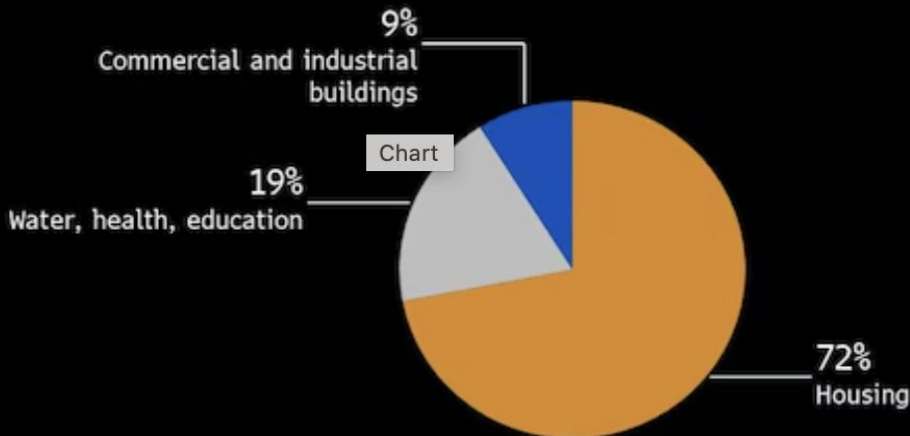
- ❖ 281,000 tons of carbon dioxide were generated by Israel's aerial bombardment [8]
  - Equates to "greater than the annual carbon footprint of more than 20 of the world's most climate-vulnerable nations"
  - Water and sewage infrastructure has been destroyed and contaminated with phosphorus [9]

# ENVIRONMENTAL IMPACTS IN PALESTINE

- ❖ 26 million tons of rubble and debris has been left behind
- ❖ Hospitals, schools, places of worship, homes, orchards, damaged or destroyed
- ❖ Average individual in Gaza is living on only 3 liters of water per day for drinking, cooking and bathing [8]

## Gaza Damage

Israel's operations have caused \$18.5 billion in infrastructure damage.



Source: World Bank, United Nations

# SOCIAL IMPACTS IN PALESTINE

- ❖ More than 33,000 people dead
- ❖ 80% of Gazans displaced by the war, majority killed were mostly women and children [9]
- ❖ Bomb explosions lead to human exposure of fragments and other harmful substances, a 500-pound blast will severely damage, injure or kill everything or anyone within 65 feet [10]



Source: Aljazeera - Disarmed MK 84 Bomb 2021





## KNOW THEIR NAMES

Some of the 33,000 Palestinians who have died since Oct. 2023.

**MAHMOUD AND KHULOUD DAHDOUH** are the children of Al Jazeera Arabic correspondent Wael Dahdouh. Along with their Mother, 7 year old sister Sham, and nephew Adam they took shelter in Nuseirat camp in Gaza. An Israeli air raid killed them and 21 other Palestinians. Mahmoud had dreams of being a journalist, like his father. [11]

Source: Nuseirat Camp Bombing Oct 2023



## KNOW THEIR NAMES

**SUHAIL, JOULY, and MAJD RAMEZ EL SOURY** are three siblings who died in an Israeli airstrike after taking cover in Gaza's oldest church. [12]

They were children, the oldest being 14 and the youngest being 10. Their father pulled them from the rubble of what he thought was supposed to be a safe haven. In his grief, he calls them "my angels."

Source: Church of Saint Porphyrius Bombing Oct 2023



## CONCLUSION

The U.S.' contribution to the war by providing “dumb bombs” are both socially and environmentally detrimental, and the U.S. must stop contributing to this genocidal effort in totality. The use of dumb bombs should be an international violation to the human race. The U.S.' continuation of building these bombs is an act of direct genocide.

**THE UNITED STATES MUST STOP PRODUCING DUMB BOMBS AND FUNDING THE ISRAELI WAR EFFORTS!**

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