Military robots and their impact on war

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directory

definitions and abbreviations

- UAV : Unmanned aerial vehicle
- UGV : Unmanned ground vehicle
- USV : Unmanned surface vehicle

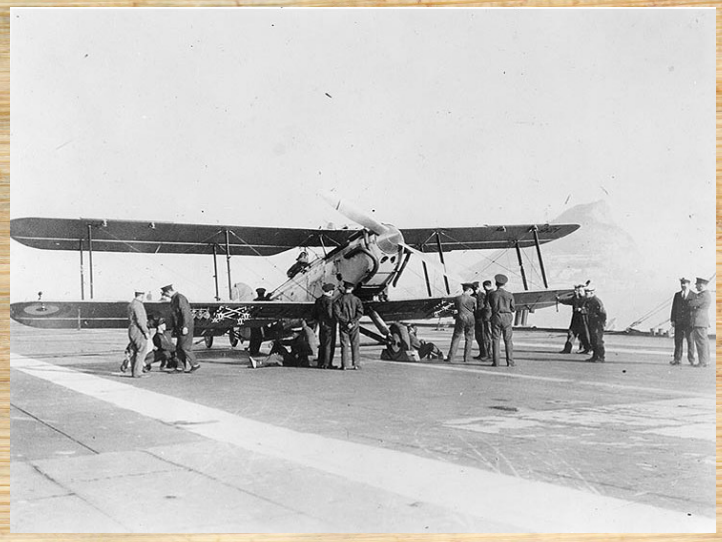
History I

- Teletank
- World War II
- Engineered by soviets

- Goliath tracked mine
- World War II
- Engineered by germans

History II

- Fairey III
- produced 1917
- used in WW I



- MQ-1 Predator
- In use since 1995
- CIA experiments in 1980s

unmanned surface vehicle I

- Valuable for oceanography
- Better than weather buoys and cheaper than weather ships
- Energy: solar or wave energy

unmanned surface vehicle II

- Protector:
- 9 m long
- Top speed 92.6 km/h
- First operational combat USV
- Developed by the Israeli `Rafael Advanced Defence Systems`

unmanned ground vehicle I

Used in dangerous Situations:

-disabling explosives

-patroling the border

Or for peacekeeping:

-ground surveillance

-urban street presence

-enhance police ops

unmanned ground vehicle II

Guardium:

-first tests in 2008

-can be used on streets and on fields

-80 km/h

-carrying capacity 300kg

-equipped with cameras, communicationsystems

-can also be equipped with weapons

unmanned ground vehicle III

BigDog:

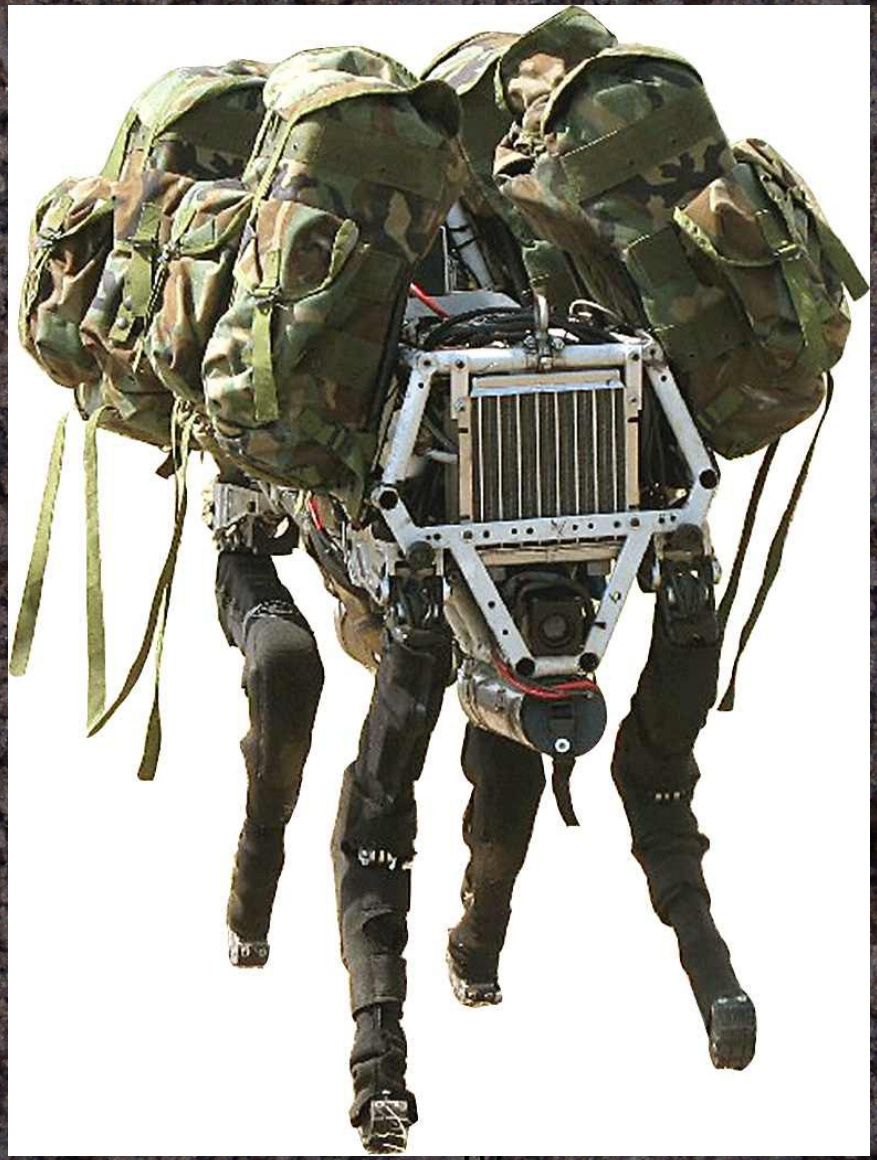
-length: 0,91 m

-height: 0,76 m

-weight: 110 kg

-payload: 150 kg

-speed: 6,4 km/h



unmanned aerial vehicle I

-known as drone

-military and civil use

-sensors:
electromagnetic spectrum sensors, gamma ray sensors, biological sensors, chemical sensors, high definiton cameras

unmanned aerial vehicle II

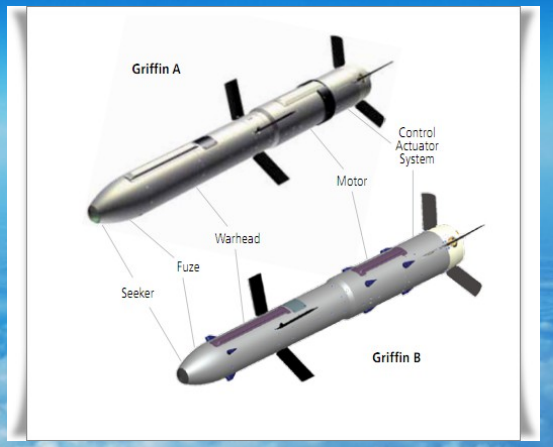
Weapons:

-AGM-114M Hellfire

-AGM-175 Griffin

-GBU-44 Viper Strike

-GBU-12 Paveway



unmanned aerial vehicle III

Predator (MQ-1,MQ-1B,MQ-1C)

length: 8-8,23 m

wing spread: 14,84-17 m

height: 2,1 m

max. weight: 1020-1451 kg

max. speed: 222 km/h

max. altitude: 7620-8840 m

max. time of flight: 36-40 h

unmanned aerial vehicle IV

Reaper (MQ-9)

Length: 10,97 m

wing spread: 20,12 m

Height: 3,8 m

max. weight: 4763 kg

max. speed: 482 km/h

max. altitude: 15400 m

max. time of flight: 30 h

unmanned aerial vehicle V

IAI Heron (Heron 1, Eitan)

Length: 8,5-14 m

wing spread: 16,6-26 m

Height: 2,3 m

max. weight: 1150-4650 kg

max. speed: 111-unk. km/h

max. altitude: 9150-12500 m

max. time of flight: 20-24 h

international arms race

USA:	689,591,000,000$
Russia:	64,123,000,000$
France:	58,244,000,000$
UK:	57,875,000,000$
Germany:	43,478,000,000$
Italy:	31,946,000,000$
Turkey:	18,687,000,000$
Israel:	15,209,000,000$
Iran:	7,463,000,000$

impact on soldiers

-out of danger zone

-live coverage

-observe and kill

-“Bugsplat“

impact on civil society I

-no privacy

-civilian deaths, many of them children

-from 2004 to 2011 291 droneattacks on pakistani border areas

impact on civil society II

-dehumanization

-no protection

-anxiety state

threshold to war

-war between man and machine

-no trial, direct kill

-no danger for own soldiers, no risk

-asymmetrical warfare

possible solutions

-equipment limitation treaty

-rules of transparency

-to forbid the use of robots, like the use of weapons of mass destruction

Sources

Pictures:

-Protector (*malaysiaflyingherold.wordpress.com*)

-Guardium (*Spiegel*)

-small UGV (*armybase.us*)

-soldier (*flightglobal.com*)

-UAV screen (*youtube.com*)

-BigDog (*robaid.com*)

-all other pictures are from *Wikipedia*