

# Directed Energy Weapons: Timeline

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By [GlobalData Thematic Research](#) 11 Aug 2020 (Last Updated August 11th, 2020 08:27)  
Lasers have become highly effective instruments of military operations.



Since the first laser was introduced to the public in 1960, many countries, especially the US and Russia, have implemented large-budget programs for the development of laser weapons. In the past two decades, military use of directed energy technologies has quickly matured from the research laboratory to the operational force.

**Listed below are the major milestones in the journey of DEWs theme, as identified by GlobalData.**

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1939 – Laser was invented and studies were initiated.

1952 – High Power Microwave technology was being invested upon.

1958 – Laser theory was released by Charles H Townes.

1959 – Russia claimed to have developed microwave power anti-ballistic missile system.

1972 – UK used laser weapons during Falkland War.

1972 – US signed Anti-Ballistic Missile (ABM) Treaty.

1985 – Japan initiated development of laser and microwave weapons for defensive purposes.

1996 – Genasys, former LRAD, launched its first directed sound technology.

1997 – US established The Joint Non-Lethal Weapons Directorate.

1998 – EU established The European Working Group Non-Lethal Weapons (EWG-NLW).

2001 – Raytheon demonstrated Active Denial System as non-lethal DEW.

2002 – US withdrew from Anti-Balistic Missile Treaty.

2002 – An anti-missile laser, called Tactical High Energy Laser (THEL), developed jointly by the US and Israel successfully incinerated an incoming artillery round.

2003 – Genasys developed the Long Range Acoustic Device (LRAD).

2009-2011 – US Navy successfully tested a prototype solid-state laser (SSL) called the Laser Weapon System (LaWS) against UAVs.

2010 – A Mid-Infrared Advanced Chemical Laser destroyed a Titan missile booster, marking the first successful deployment of laser weapon technology.

2010-2011 – US Navy tested another prototype SSL called the Maritime Laser Demonstration (MLD) on a Navy ship against a small boat.

2011 – The first airborne laser system, Boeing YAL-1 was tested on Boeing 747 by the US which could destroy ballistic missiles in flight.

2011 – Raytheon demonstrated a ship mounted laser weapon which was capable of taking drones down with a 50 kW beam development.

2011 – The US Navy initiated studies on Rail gun development.

2011 – Boeing initiated a Free Electron Laser (FEL) development.

2014 – Rafael unveils the “Iron Beam” – a mobile high-energy laser-based air defence system.

2014 – Boeing introduced an anti-drone compact laser weapon system.

2014 – A 15 kW laser beam was tested to inflamate small boats causing threat to the US naval ships.

2014 – Raytheon delivered the AN/SEQ-3 LaWS to the US Navy.

2014 – Boeing introduced the High Energy Laser Mobile Demonstrator (HEL MD).

2014 – Lockheed Martin tested prototypes of Aero-adaptive Aero-optic Beam Control Turret on commercial jets.

2015 – Israel tested the first intercept the Arrow 3.

2016 – Russian firm, Unified Instrument-Making Corporation, announced the development of radio electronic weapon.

2017 – China announced launching the “Silent Hunter” – a fibre optics laser air defence system.

2017 – Russia begun to test a land-based a laser weapon system called “Peresvet”.

2017 – The UK initiated the Dragofire Program.

2019 – USS Portland (LPD 27) was fitted with a new, 150-kilowatt laser weapon developed by the Office of Naval Research (ONR) and Northrop Grumman.

2019 – UK begun to test the Dragonfire, prototype Laser DEW capability demonstrator.

2021 – US Navy install high-energy laser with integrated optical dazzler and surveillance (HELIOS) systems to Arleigh Burke (DDG-51) class Aegis destroyer.

2023 – US test a space-based directed energy weapon based on neutral particle beam technology.

2025 – Laser weapons are fully operationally on combat systems and vehicles.

*This is an edited extract from the Directed Energy Weapons (Defense) – Thematic Research report produced by GlobalData Thematic Research.*