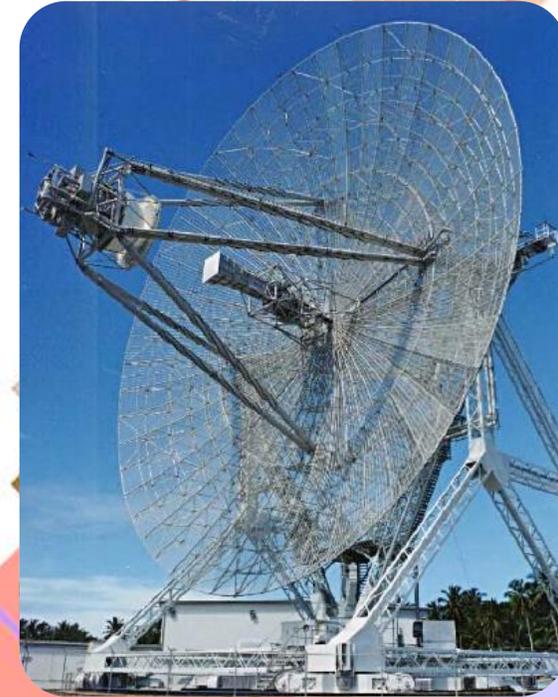


RADAR

A radar is a long-distance device used to detect flying objects. It was invented by scientists to detect the enemy's air attack during the First World War.

As early as 1887, a German physicist named Heinrich Hertz who studied electromagnetic waves, discovered that electromagnetic waves can reflect metals encountered in the transmission process, just like a reflective mirror. This discovery was the working principle of a radar. Regrettably, Hertz had not thought of inventing the radar using this idea.

By 1897, a Russian physicist, Alexander Stepanovich Popov discovered a strange phenomenon while conducting a radio communication test on two warships. The communication was interrupted and resumed several minutes later on a number of times during the test. The occurrence sent suspicions into Popov's mind. He inspected his machine, only to confirm that it was functioning properly. He then began to take note of his surroundings when the communication was interrupted again. To his surprise, a ship was passing between the two warships when the interruption occurred, and communication went back to normal right after the ship left.



RADAR

The keen Popov was immediately aware of the fact that the radio waves between the warships had been blocked by the passingby ship, thus causing the communication disturbance. He could not help but thought of the possible use of radio waves to detect objects on the surface of the sea. Again, it was regrettable that Popov stayed on his hypothesis and did not develop the idea further.

When exactly was the radar invented? In 1922, scientists in the USA began experimenting with Popov's hypothesis. They installed device which could transmit and receive electromagnetic waves at both sides of the water channel which vessels passed by in order to detect them. This device, although not exactly a radar, can be described as a prototype of the radar.



RADAR

In 1935, the famous Scottish physicist Sir Robert Alexander Watson-Watt invented the world's first radar, based on the above principle. The radar combined the radio wave transmission and reception functions, and can remotely detect aircraft operations.

The microwave transmitted by the radar had strong directionality of up to 1.5 cm, whereby it could be strongly reflected if objects were encountered, and hence effectively detecting airborne aircrafts.

This type of radar was called Chain Home system at that time. In 1938, after several improvements, the Chain Home system was officially installed near Thames Estuary. The 200 km radar network was seen as a major threat to the enemy and was once the cause of a huge headache for Hitler. With the installation of the radar systems in its warships by the British army, it played an unparalleled role in the maritime war.

Not just limited to military purposes, the use of the radar has become increasingly widespread. It can also be used to detect the weather, tombs, holes or ant holes hidden 20 metres beneath the ground as well as for many other purposes.

RADAR

Food for Thought:

- Inspiration comes from life. New ideas arise from careful observation and attention to changes in the surroundings.
- If attention and development is not given to uncommon phenomenon or ideas, they will not be used and benefit mankind.

