

Paramount News Presents
THE HIDDEN WEAPON
RADAR

No longer secret are details of radio location and the way it made its indispensable contribution to Allied victory. Discovered and developed by the scientists of Great Britain, Radar was made available for every ~~country~~ *ally* *side* with which we fought.

X A Radar set uses the principal of the Echo to detect enemy targets. Ultra high frequency radio waves are sent out by the Radar transmitter. X When a wave hits a solid object, a ship or plane for example, it bounces back to its source. X From the elapsed time between the transmission of the wave and its return Radar can tell just how far away the object is.

X On the cathode Ray tube, the heart of Radar, the presence of the enemy target is registered for the eye to see.... As the distance between the ship's Radar set and its target decreases the echo obviously returns more quickly. As the target moves ~~closer~~ *closer the peak* ~~the pip~~ moves to the left, which indicates that the range has shortened.

X Anti aircraft batteries were warned in good time that enemy planes approached. Radar gave them range and direction. Big military and industrial targets were protected by a ring of radar sets. Enemy planes were detected as soon as they came within a hundred mile range. Fog, cloud, smoke, or pitch darkness made no difference to radar. Under all conditions the high frequency radio waves are reflected back to the transmitter. A warning *peak* ~~pip~~ gives plenty of notice of an approaching enemy plane.

From each radar location reports of the course, speed, range and altitude of enemy aircraft were reported to the Plotting Centre. In this way, for example, Fighter Command in the Battle of Britain watched the progress of

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every single German aircraft attacking England. Fighter stations were instantly notified. Only by Radar could *this*

~~XXXXXXXXXXXXXXXXXXXX~~

~~the~~ R.A.F. nerve-centre have controlled the battle, loss of which might well have cost us the war.

X Searchlights synchronised with Radar automatically catch the target plane in their beam. Whole batteries of searchlights follow the Radar target-spotter. The rest is up to the gunners. In a matter of seconds the end of another German plane has been charted by Radar.

X All British and Allied planes carried a device called a Transponder, by which they were distinguished from the enemy. The ~~trans~~ transponder is a small automatic set which itself transmits an ~~extra~~ ^{extra} ~~pip~~ ^{peak} the moment it is touched by Radar waves.

X At sea Radar can detect individual ships in a fleet, each one appearing as a separate ~~pip~~ ^{peak} indicating the size of the ~~ship~~ vessel.

X Coastline details, as with this harbour, appear in distinctive form on the scope.

X Scouting planes could detect any number of targets by radar. For special jobs there was special radar equipment, ~~XXXXXXXXXXXXXXXXXXXX~~

X ~~but~~ basically all sets were the same. On the scope of an airplaness radar, large objects appeared as large ~~pips~~ ^{peaks}, small ones as small ~~pips~~ ^{peaks}. ^{These} ~~Pips~~ ~~XXXXXXXXXXXX~~ revealing ships broadside on to the scout plane are larger than those detecting ships head-on. Islands and coastlines are also registered - a big help in air navigation.

X As an offensive weapon Radar enabled scouts to detect enemy ships in fog or pitch dark. Warships were notified, moved into rage, got the enemy on the radar-scope and fired direct hit salvos, without one man of the ships crew seeing

~~the target~~

the target with his own eyes.

X Radar's peacetime rôle lies in air and sea navigation. For example if a pilot were forced to crash because of accident or fire he could get a distress signal back to the Plotting Centre and Radar would register exactly where he came down. X Rescue planes would be sent at once.

X At sea Radar thoroughly comes into its own in foggy weather. Full speed ahead, without the smallest danger, is now possible under conditions such as formerly were suicidal at any speed. Radar gives ample warning of icebergs. ~~Had there been Radar years ago the Titanic would not have gone down.~~ No invention can completely banish danger from travel by sea and air. But Radar enormously increases the safety factor. It is an all-seeing eye, reliable under all conditions, at all hours of the day or night.

N With the world at the beginning of a great expansion of air travel the value of Radar cannot be exaggerated. ~~Not often have the inventions of man aided the world in peace, but that is what Radar will do abundantly.~~ Far greater safety in the air is attained from now on.

Today a new age of airways lies ahead. In spite of rain, fog & sleet Radar is bringing planes safe to happy landings.

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August 21, 1945

1. TITLE: THE HIDDEN WEAPON -- RADAR

2. Radar -- one of the greatest secrets of all time, revealed at last. Radar -- that won the battle of Britain in 1940, and defeated the Nazi U-boat menace,

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A radar set uses the principle of the echo, to detect enemy targets. Ultra-high frequency radio waves are sent out, by the radar transmitter. When a wave hits a solid object, a ship or a plane, for instance, it bounces back to its source. From the elapsed time, between the transmission of the wave, and its return, radar can tell just how far away the object is. On the cathode ray tube -- the heart of radar -- is registered the visible indication of the enemy target -- a pip or blip. As the distance between the ship's radar set and its target decreases, the echo will return in a shorter time. As the target moves closer, the pip moves to the left, and a shorter range is indicated.

14. Now, an illustration of how a vital area, such as the Panama Canal Zone, was protected by radar. ¹⁴ Now military or industrial targets are protected by a ring of radar sets, that warn of planes when they are as far away as 100 miles! This amazing weapon penetrates straight to the enemy through fog, clouds, smoke, or pitch darkness. The waves bounce back to the base and a warning blip gives notice of an approaching enemy plane. ^{15/18} Meters register course, speed, range, and altitude, which are reported to the plotting center. ^{19/24} Here, a symbol for the plane goes on the plotting table, while anti-aircraft and searchlight batteries are alerted. ^{25/33} ~~that~~ ^{q/c} ~~down~~ ^{pl}

25. Radar is so deadly accurate, that a searchlight synchronized with it can catch the target plane in the center of its beam, while other searchlights form a cross-beam. For this plane, radar has charted the end. Anti-aircraft batteries do the rest.