

**Misube**

In fact, the mechanism of radar is similar to that of an echo. First, radio waves emitted from the antenna are reflected by the target.

**Maizono**

Next, the reflected radio waves are then received by an antenna.

Yo-ho~!

Yo-ho~!

When I come to a place with a nice view, I feel like shouting 'Yo-ho~!'

Hey! Where is Ms. Maizono?

She's probably buying some local torture devices at that souvenir shop.

?

**Misube**

But radar has its weaknesses.

150m

**Maizono**

Radar can't receive radio waves while it is emitting them.

So, the radar can't detect targets within 150 m of the antenna.

**Misube**

The speed of radio waves is about 300 meters per  $\mu\text{s}$ .

If it takes 40  $\mu\text{s}$  for the radio wave to return, then  $300 \times 40 \div 2 = 6 \text{ km}$

Enemy spotted 6 km south!

So, you can determine the distance to the target based on the time it took for the radio wave to make a round trip.

And you can determine the target's direction based on the orientation of the antenna.

You can shorten  $R_{min}$  by narrowing the pulse width of the radio wave.

Pulse width

Whew!

If you were as enthusiastic about my class as you are about exploring radar, I wouldn't need to punish you.

What do you intend to use the candle for?

Welcome back ★

Kagiya~!

Tamaya~!

This is called the minimum detection distance ( $R_{min}$ ).

The topic of radar made me want to shout at the mountains too ♥

The echo is coming back too quickly!